Search history

Search 1: FT=concrete and fill* and column and steel and modular and reinforc* (Results 58)

Search 2: FT=(concrete filled or in–filled) and (column or steel tube) (Results 1280)

Search 3: FT=(concrete filled or in–filled) and (column or steel tube) and reinforc* (Results 517)

Search 4: FT=(concrete filled or in–filled) and (column or steel tube) and reinforc* and (flange or tab) (Results 68)

Search 5: FT=steel and plate and construction (Results 66402)

Search 6: FT=steel and plate and construction and fill* and concrete (Results 3523)

Search 7: FT=steel and plate and construction and fill* and concrete and column (Results 639)

Search 8: FT=steel plate and construction (Results 16822)

Search 9: FT=steel plate construction (Results 298)

Search 10: FT=steel plate construction and concrete (Results 30)

Search 11: FT=steel and column and (housing or formwork or framework) and concrete (Results 1676)

Search 12: FT=steel and column and (housing or formwork or framework) and concrete and fill* (Results 442)

Search 13: FT=steel and column and (housing or formwork or framework) and (concrete and filled or in–filled) (Results 301)

Search 14: FT=steel and column and (housing or formwork or framework) and (concrete filled or in–filled) (Results 38)

Search 15: FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) (Results 2527)

Search 16: FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) and (holes or perforations or bores) (Results 651)

Search 17: FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) and concrete and reinfor* (Results 555)

Search 18: FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor* (Results 590)

Search 19: FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor* and PD<20160302 (Results 551)

- session log created:27 June 2017 05:48:17
- Update information:

  PatBase Coverage at Update 2017 Week 25 (Year 2017 Week 25)

  PatBase Coverage includes 100+ million documents from over 100 patent–issuing authorities and includes patent applications, granted patents, utility models and designs â€“ detailed in the below coverage listings.

  Major countries

Publishing body	Document type	Bibliographic publication date		Full–Text publication date	
		Earliest	Latest	Earliest	Latest
CN China	Patent Applications	19850910	20170623	19850910	20170623
	Patents	19930106	20170623	19930106	20170623
	Utility Model Applications	19850409	19921230	19850409	19921230
	Utility Models	19930106	20170623	19930106	20170623
	Designs	19850910	20170623	19850910	20150819
DE Germany	Patent Applications	19211221	20170622	19650317	20170614
	Patents	18770101	20170622	19200113	20170614
	Utility Models	19280626	20170622	19610831	20170614
	EP/WO Patents	19871217	20140410		
EP European Patent Office	Patent Applications	19781220	20170621	19781220	20170614
	Patents	19800109	20170621	19800109	20170614
FR France	Patent Applications	19690307	20170616	19810102	20170526
	Patents	18550227	20170616	19600502	20170616
	Utility Model Applications	19720107	20170616	19800104	20170526
	Utility Models	19730112	20170609	19690802	20170609
GB United Kingdom	Unpublished Patent Applications	19830209	20170614		
	Patent Applications	19790104	20170621	19790104	20170531
	Patents	17820704	20170621	19020911	19811216
JP Japan	Patent Applications	19710116	20170629	19930108	20170615
	Patents	19281026	20170607	19960529	20170607
	Utility Model Applications	19710723	20060209	19990817	20031107
	Utility Models	19640805	19960329		
	Registered Utility Models	19940726	20170608	19940726	20101216
	Designs	20141110	20170619		
KR Republic of Korea	Patent Applications	19781209	20170623	19940103	20170623
	Patents	19700820	20170623	19970104	20170623
	Utility Model Applications	19781127	20170623	19940730	20170623
	Utility Models	19780110	20170623	19970104	20170623
US United States of America	Patent Applications	20010315	20170622	20010315	20170615
	Patents	18360101	20170620	18560617	20170613
	Designs	18650912	20170620	19770719	20170613
WO World Intellectual Property Organization (WIPO)	Patent Applications	19781019	20170622	19781019	20170615
	Designs	20151127	20170616	20151127	20170609

20170624 21:00

- Login to Patbase:27 June 2017 05:48:17
- **search:** SS1 FT=concrete and fill* and column and steel and modular and reinforc* (Results 58)
- List: SS1 1–50 (FT=concrete and fill* and column and steel and modular and reinforc*) (Results 58)

0) US2009107065A – BUILDING CONSTRUCTION FOR FORMING COLUMNS AND B...

1) Family number: 43198191 (US2009107065A) © PatBase

Title: BUILDING CONSTRUCTION FOR FORMING COLUMNS AND BEAMS WITHIN A WALL MOLD

Priority: US20070000112P 20071024 US20080137224P 20080729 US20080231875 20080908 US20090208224P 20090223 US20090456707 20090622 US20090456707 20090722 WO2009US04335 20090727 US20110628044P 20111024 US20110629442P 20111118 US20120398243 20120216 US20120400103 20120219 US20120398168 20120217 US20120437707 20120402 US20120437630 20120402

Family:

Publication number	Publication date	Application number	Application date
AU2009277150 AA	20100204	AU20090277150	20090727
IN00351MN2011 A	20110826	IN2011MN00351	20110223
US2009107065 AA	20090430	US20080231875	20080908
US2010058700 AA	20100311	US20090456707	20090622
US2012144765 AA	20120614	US20120398243	20120216
US2012144767 AA	20120614	US20120400103	20120219
US2012174512 AA	20120712	US20120398168	20120217
US2012186174 AA	20120726	US20120437630	20120402
US2012186180 AA	20120726	US20120437707	20120402
US8161699 BB	20120424	US20090456707	20090622
US8176696 BB	20120515	US20080231875	20080908
US8671637 BB	20140318	US20120400103	20120219
US8756889 BB	20140624	US20120398168	20120217
US8763331 BB	20140701	US20120437630	20120402
US8800227 BB	20140812	US20120437707	20120402
WO10014192 A1	20100204	WO2009US04335	20090727

Probable Assignee: LEBLANG DENNIS WILLIAM

Assignee(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Assignee(s): DENNIS LEBLANG

Inventor(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Inventor(s): DENNIS LEBLANG

Agent(s): BAXTER IP; BAXTER PATENT ATTORNEYS PTY LTD; DENNIS LEBLANG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/16 E04B1/18 E04B1/38 E04B1/64 E04B2/00 E04B2/08 E04B2/30 E04B2/32 E04B2/76 E04B2/84 E04B2/86 E04C1/42 E04C2/10 E04C2/20 E04C2/52 E04C3/09 E04G11/06 E04G9/00 (Advanced/Invention); E04B2/86 E04C3/04 (Advanced/Non–invention); E04B1/18 E04B2/04 E04G11/00 E04G9/00 (Core/Invention)

CPC: E04B1/164 E04B2/7412 E04B1/80 E04B2/58 E04B1/14 E04B1/165 E04B2/763 E04B2/8617 E04B2/8635 E04B2/8641 E04B2/8647 E04C3/09 E04C2003/0473

European class: E04B1/14 E04B1/16C E04B1/16D E04B1/80 E04B2/58 E04B2/76C1 E04C3/09 P04B2/74C2P P04B2/86E1 P04B2/86G P04B2/86G1 P04B2/86H P04C3/04S3U

US class: 249/19 249/192 249/192S 249/19S 52/220.1 52/220.100P 52/220.2 52/220.200P 52/252 52/252P 52/302.1 52/302.100P 52/309.11 52/309.12 52/309.4 52/309.400S 52/426 52/426P 52/426S 52/439 52/439P 52/479 52/479S 52/506.05 52/506.050P 52/588.1 52/588.100S 52/698 52/698S 52/762 52/762S

Classification Explorer

Cited documents: US8161699 BB, US8109058 BB, US8037652 BB, US7908807 BB, US7790302 BB, US7681368 BA, US7666258 BB, US7415805 BB, US7409800 BB, US7395999 BB, US7308778 BB, US7278244 BA, US7254925 BB, US7232605 BB, US7231746 BB, US7185467 BB, US7162845 BB, US7077988 BB, US7028440 BB, US7028439 BB, US6988347 BB, US6978581 BA, US6952905 BB, US6935081 BB, US6880304 BA, US6869669 BB, US6851235 BB, US6837013 BB, US6817151 BB, US6754995 BA, US6729094 BA, US6708459 BB, US6701684 BB, US6698710 BA, US6681539 BB, US6662516 BB, US6647686 BB, US6609340 BB, US6588168 BB, US6584742 BA, US6568138 BA, US6564521 BA, US6541097 BB, US6523312 BB, US6519904 BA, US6481178 BB, US6438918 BB, US6430890 BA, US6408594 BA, US6401417 BA, US6378260 BA, US6355193 BA, US6308491 BA, US6293067 BA, US6269608 BA, US6263628 BA, US6256960 BA, US6250033 BA, US6247280 BA, US6240692 BA, US6167624 BA, US6167624 B1, US6164035 A, US6151858 A, US6134861 A, US6131365 A, US6125608 A, US6122888 A, US6119432 A, US6044603 A, US6041562 A, US6041561 A, US6026620 A, US5992114 A, US5950389 A, US5943775 A, US5864993 A, US5842314 A, US5842276 A, US5839249 A, US5819496 A, US5809726 A, US5809724 A, US5758463 A, US5722198 A, US5655350 A, US5638651 A, US5628158 A, US5596860 A, US5566518 A, US5526629 A, US5524400 A, US5505031 A, US5497589 A, US5381635 A, US5365716 A, US5353560 A, US5335472 A, US5279091 A, US5279088 A, US5207045 A, US5138813 A, US5062250 A, US4930278 A, US4909007 A, US4889310 A, US4813193 A, US4774794 A, US4744185 A, US4724794 A, US4703602 A, US4602467 A, US4357783 A, US4338759 A, US3678638 A, US2008127607 AA, US2008066408 AA, US2007278381 AA, US2007227086 AA, US2007199266 AA, US2007062134 AA, US2007044392 AA, US2006260267 AA, US2006251851 AA, US2004068948 AA, US2003106280 AA, US2001027630 AA, US1892605 A, US1850402 A,

Forward Citations: WO16032537, WO14128047, WO14059546, WO12092108, WO11127522, US9677285, US9617724, US9611656, US9598891, US9593491, US9574347, US9566742, US9534397, US9512621, US9493940, US9469984, US9464444, US9464443, US9422713, US9388566, US9382709, US9340966, US9328506, US9324730, US9322162, US9316006, US9267294, US9260869, US9255414, US9222261, US9157233, US9115503, US9115500, US9097016, US9091068, US9074369, US9068350, US9038343, US9032685, US9016027, US8997421, US8978334, US8978331, US8950130, US8875465, US8863463, US8839580, US8776468, US8769891, US8756890, US8661762, US8631623, US8621798, US8615952, US8607523, US8601761, US8578675, US8544233, US8375670, US8375669, US8359799, US8307598, US8276332, US2017121958, US2017067245, US2015354205, US2015300018, US2015267393, US2015218831, US2015001764, US2014332658, US2014250828, US2014165490, US2014150368, US2014116000, US2014115991, US2014115989, US2014115988, US2014109503, US2014069040, US2014059963, US2014059958, US2014000199, US2013326984, US2013295338, US2013273310, US2013192161, US2013180190, US2013118104, US2013074432, US2013036688, US2012285108, US2012231231, US2012227346, US2012225236, US2012144765, US2012124927, US2012096785, US2012040135, US2012036803, US2011302875, US2011220966, US2011113724, US2011091679, US2011036048, US2011036046, US2010176525, US2010058686, US2010005746, US2009282759, US2009277119, US2009064619, RU2610951, ITVI20100078, FR3002251, CN105569255, CN103758249, CN103031905, CN102587502,

Abstract:
Source: US2009107065A The present invention relates to an improved wall system where a wall form mold has a structural insulated core assembled to form a structural insulated panel (SIP) to form a concrete beam and concrete column to be poured anywhere within the wall as well as between building modules when placed together and erected vertically. The interlocking wall molds interlock within the wall as well as between panels and modules. The wall panels allow concrete columns and beams to be formed in any size and shape. The structural insulated core consists of interlocking foam spacers and support channels which can be glued or screwed together to form an independent wall or as part of a precast wall with columns and beams integrated within the wall panels. Insulated flanges within the wall forming mold separates the wall forming structure from the wall surfaces.

0) US2008072511A – PARTIALLY PREFABRICATED MODULAR FOUNDATION SYST...

2) Family number: 41630159 (US2008072511A) © PatBase

Title: PARTIALLY PREFABRICATED MODULAR FOUNDATION SYSTEM

Priority: EP20070853595 20070921 US20060826452P 20060921 US20070859588 20070921 US20070954502P 20070807 US20090269800P 20090629 US20090215430P 20090505 US20090284901P 20091228 US20100339550P 20100305 US20100774727 20100506 US20100319083 20100705 US20140176160 20140210 US20110319083 20111105 US20150748241 20150624 US20160137157 20160425 WO2007US79213 20070921 WO2010US41006 20100705

Family:

Publication number	Publication date	Application number	Application date
CA2663935 AA	20090319	CA20072663935	20070921
DE602007023843 D1	20120830	DE200760023843T	20070921
DK2064393 T3	20121015	DK20070853595T	20070921
DK2064393 T3	20121015	DK19070853595T	20070921
EP2064393 A2	20090603	EP20070853595	20070921
EP2064393 A4	20091230	EP20070853595	20070921
EP2064393 B1	20120704	EP20070853595	20070921
EP2427603 A2	20120314	EP20100781394	20100705
EP2427603 A4	20160907	EP20100781394	20100705
US2008072511 AA	20080327	US20070859588	20070921
US2011061321 AA	20110317	US20100774727	20100506
US2012047830 AA	20120301	US20100319083	20100705
US2015225918 AA	20150813	US20140176160	20140210
US2015376859 AA	20151231	US20150748241	20150624
US2016376763 AA	20161229	US20160137157	20160425
US8661752 BB	20140304	US20100319083	20100705
US9096985 BA	20150804	US20140176160	20140210
US9347197 BB	20160524	US20150748241	20150624
US9534405 BA	20170103	US20160137157	20160425
WO08036934 A2	20080327	WO2007US79213	20070921
WO08036934 A3	20080626	WO2007US79213	20070921
WO08036934 C2	20080828	WO2007US79213	20070921

Probable Assignee: PHULY AHMED M

Assignee(s):(std)**:** AHMED PHULY ENGINEERING AND CONS ; AHMED PHULY ENGINEERING AND CONSULTING INC ; PHULY AHMED ; PHULY AHMED M

Assignee(s): AHMED PHULY ENGINEERING AND CONSULTING INC ANDOVER

Inventor(s):(std)**:** PHULY AHMED

Inventor(s): PHULY AHMED ANDOVER

Agent(s): RIDOUT AND MAYBEE LLP; WAECHTERSHAEUSER AND HARTZ PATENTANWALTSPARTNERSCHAFT MBB; CHARIG RAYMOND JULIAN; HARTZ NIKOLAI; BLODIG WOLFGANG; NIKOLAI AND MERSEREAU PA; STEVEN E; KAHM STEVEN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B28B1/14 E02D17/04 E02D27/00 E02D27/02 E02D27/08 E02D27/26 E02D27/32 E02D27/42 E04C5/06 E04C5/08 E04G21/02 E04G21/12 E04H12/12 E04H12/16 E04H12/22 F03D13/20 (Advanced/Invention);

E04H12/34 (Advanced/Non–invention);
E02D27/00 E02D27/32 E04G21/02 E04H12/00 (Core/Invention)

CPC: E02D27/52 E02B17/025 E02B2017/006 E02B2017/0065 E02B2017/0073 E02B2017/0091 E02B2017/0039 E02D27/08 Y02P70/523 E04H12/08 F05B2230/50 F05B2240/912 E04H12/16 E02B17/027 E02B2017/0069 E04C5/08 E02D2300/00 E02D27/425 E04C5/0645 E04C5/10 Y02B10/30 E02D17/04 E02D27/02 E02D27/26 E04G21/02 E04C5/0636 B28B1/14 E04H12/341 F03D13/22 Y02E10/728 E04G21/12 E02D27/42

European class: E02D27/42 E02D27/52 F03D11/04B R05B230/50 R05B240/912 Y02B10/30 Y02E10/72 Y02E10/72N

US class: 1/1 52/223.1 52/294 52/294P 52/296 52/297 52/297P 52/650.2 52/650.200S 52/741.15 52/745.04 52/745.040S

Classification Explorer

Cited documents: WO9943956 A1, WO05012651 A1, WO04101898 A2, WO0140585 A1, WO0111150 A1, WO0046452 A1, US872726 A, US6702522 BB, US6672023 BB, US6594968 BB, US6351250 BA, US5878540 A, US5785459 A, US5536113 A, US5123773 A, US4911585 A, US4707964 A, US4681302 A, US3810337 A, US3501882 A, US3225548 A, US3094812 A, US268770 A, US2160773 A, US2007181767 AA, US2004093824 AA, US1589938 A, US1514714 A, JP2002129585 A2, JP2001020849 A2, FR1015719 A, EP1074663 A1, DKEP1074663, DK9943956, DK20000612, DK200000612 A5, DE7637601 U, DE7637601, DE4037438 A1, DE3336655 A1,

Forward Citations: WO16116645, WO15185770, WO15168245, WO15061862, WO14160951, WO14124737, WO14120327, WO13182728, WO13144558, WO13113873, WO11030199, WO11030199, WO10138978, WO10138978, WO10028763, WO10028763, US9670909, US9663916, US9617704, US9587365, US9587363, US9523211, US9499954, US9481973, US9428877, US9290903, US9290901, US9249784, US9238921, US9175493, US9015999, US9011047, US8974150, US8833004, US8745942, US8695297, US8631618, US8602123, US8511020, US8458963, US8381479, US8375678, US8359798, US8291646, US8261502, US8220214, US8196368, US8061964, US7786612, US7663263, US2017051470, US2017030045, US2016356288, US2016201653, US2016047106, US2016025074, US2015308067, US2015121784, US2015075099, US2015056020, US2014345218, US2014345209, US2014290161, US2014237908, US2014079490, US2013183102, US2013129525, US2013094953, US2012228442, US2012167499, US2012023860, US2012012727, US2011219713, US2011044768, US2011044767, US2011044766, US2011027100, US2010319271, US2010043318, US2010024311, US2010019503, US2010007153, US2008236075, US2008152496, US2008028715, NL2005351, KR101742890, JP2016528411, ITMI20091559, ITBO20100501, ES2524840, ES2427431, ES2388161, EP2650445, EP2471357, EP2431532, EP2431532, EP2256338, EP2182201, DE102013002472, CN105473792, CN105133677, CN105133677, CN104603367, CN104471149, CN104471149, CN104321488, CN103967046, CN103967046, CN103967045, CN103967045, CN103225312, CN103225312, CN103215967, CN103047183, CN103030071, CN103030071, CN102733641, CN102720162, CN102720162, CN101725483, AU2011205043,

Abstract:
Source: US2008072511A A wind turbine foundation having a central pedestal, a bottom support slab, and a plurality of prefabricated radial reinforcing ribs. The pedestal and support slab are poured in situ at the site. When the concrete cures the support slab is united to the prefabricated ribs and the ribs are also united to the pedestal. The result is a continuous monolithic foundation wherein loads are carried across the structure vertically and laterally through the continuous structure by doweled and spliced reinforcing steel bars which are integrally cast into the pedestal, ribs and support slab. The slab thus behaves structurally as a continuous slab reducing deflections, improving fatigue conditions and increasing the stiffness of the foundation as well as allowing for the benefits of an economical design.

0) US2015068138A – CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM...

3) Family number: 58688176 (US2015068138A) © PatBase

Title: CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM ASSEMBLY PLATFORM

Priority: US20130876475P 20130911 US20140061285P 20141008 US20140484051 20140911 US20150878420 20151008 US20160148546 20160506 WO2015US54685 20151008

Family:

Publication number	Publication date	Application number	Application date
IN201747010246 A	20170414	IN201747010246	20170323
US2015068138 AA	20150312	US20140484051	20140911
US2016076269 AA	20160317	US20150878420	20151008
US2016251853 AA	20160901	US20160148546	20160506
US9506266 BB	20161129	US20150878420	20151008
WO15038805 A1	20150319	WO2014US55236	20140911
WO16057790 A1	20160414	WO2015US54685	20151008

Probable Assignee: ADITAZZ INC

Assignee(s):(std)**:** ADITAZZ INC

Inventor(s):(std)**:** FOLDENAUER DONALD ; KIM SUNGMIN ; RUBEL ZIGMUND ; REID NICHOLAS ; MOORE MARK ; HAMOUDA EHAB ; FOLDENAUER DONALD J

Agent(s): WILSON MARK A ET AL; WILSON MARK A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/04 E04B1/06 E04B1/19 E04B1/348 E04B1/38 E04B1/41 E04B5/00 E04B5/02 E04B5/04 E04B5/10 E04B5/14 E04B5/17 E04B5/44 E04C2/06 E04C5/01 E04C5/04 E04C5/08 E04C5/16 E04F13/02 E04H1/00 E04H1/04 E04H12/14 E04H12/16 E04H12/34 (Advanced/Invention); E04B1/24 (Advanced/Non–invention)

CPC: E04H12/16 E04C5/08 E04H12/14 E04H12/34 E04H1/04 E04B1/3483 E04B5/10 E04B5/44 E04B5/17 E04B5/023 E04B2005/176 E04C2/044 E04B1/24 E04B5/04 E04B5/14 E04B2001/2424 E04B2001/2442 E04B2001/2454 E04B2001/2484 E04C2/06 E04C5/04 E04C5/16 E04C5/0645 E04B2005/173

US class: 52/223.6 52/414 52/649.1 52/653.1 52/741.3 52/745.13 52/98

Classification Explorer

Cited documents: WO9733788 A1, US938458 A, US8840341 BB, US8448280 BB, US8245469 BB, US7963073 BA, US7281356 BB, US6857241 BA, US6804923 BA, US6793436 BA, US6568139 BB, US6484471 BB, US6467223 BA, US6308478 BA, US6178710 BA, US6178710 B1, US5953864 A, US5950378 A, US5809712 A, US5806273 A, US5802652 A, US5758467 A, US5678372 A, US5671582 A, US5642968 A, US5425214 A, US5399050 A, US5396747 A, US5216860 A, US5113625 A, US4972537 A, US4800697 A, US4330970 A, US4300320 A, US4285173 A, US4144369 A, US4120131 A, US4080765 A, US4037375 A, US3842562 A, US3832817 A, US3429092 A, US3029561 A, US2780150 A, US2215975 A, US2137009 A, US2016251853 AA, US2016130798 AA, US2015068138 AA, US2015013255 AA, US2014202795 AA, US2014041328 AA, US2012233945 AA, US2011283643 AA, US2011131905 AA, US2010251656 AA, US2010101160 AA, US2009308005 AA, US2009272067 AA, US2009266010 AA, US2009188193 AA, US2009057486 AA, US2008295433 AA, US2008083181 AA, US2008010943 AA, US2007101675 AA, US2007000077 AA, US2006179750 AA, US2004060249 AA, US1912290 A, US1624802 A, US1523811 A, US1319731 A, US1061665 A,

Forward Citations: US9506266, US2016076269, US2014202795,

Abstract:
Source: US2015068138A Embodiments of a deck assembly module for a steel framed building include a modular concrete deck platform. The platform includes a concrete slab having a top major surface and a bottom major surface and a structural grid pattern of reinforcing bar within the concrete slab. The concrete slab further includes a shear connector opening on a side surface of a side of the concrete slab. The shear connector opening is a recess on the side surface of the concrete slab. The platform further includes an integrated attachment assembly within the shear connector opening on the side of the concrete slab. The integrated attachment assembly includes a shear connector rebar including an extension of continuous reinforcing bar extending out of the shear connector opening and back into the shear connector opening. The shear connector rebar and the shear connector opening form a closed loop.

0) US2002104469A – PRECAST MODULAR CONCRETE SHAPES AND METHODS OF ...

4) Family number: 28247308 (US2002104469A) © PatBase

Title: PRECAST MODULAR CONCRETE SHAPES AND METHODS OF INSTALLATION TO FORM SHORELINE STABILIZATION, MARINE AND TERRESTRIAL STRUCTURES

Priority: US20010776971 20010205 US20020314099 20021207 US20030731263 20031208 US20060370074 20060306 US20070906057 20070928 US20070906058 20070928 US20100804632 20100726

Family:

Publication number	Publication date	Application number	Application date
US2002104469 AA	20020808	US20010776971	20010205
US2003091391 AA	20030515	US20020314099	20021207
US2004244667 AA	20041209	US20030731263	20031208
US2007283866 AA	20071213	US20060370074	20060306
US6491473 BB	20021210	US20010776971	20010205
US6659686 BB	20031209	US20020314099	20021207
US7007620 BB	20060307	US20030731263	20031208
US7373892 BB	20080520	US20060370074	20060306
US7603959 BA	20091020	US20070906057	20070928
US7762205 BA	20100727	US20070906058	20070928
US7992509 BA	20110809	US20100804632	20100726

Probable Assignee: SE VENTURES INC

Assignee(s):(std)**:** SE VENTURES INC ; VEAZEY SIDNEY E ; VEAZEY SIDNEY EDWIN

Assignee(s): RESOLVE MARINE GROUP INC

Inventor(s):(std)**:** VEAZEY SIDNEY E ; VEAZEY SIDNEY EDWIN

Inventor(s): VEAZEY SIDNEY

Agent(s): JAMES K POOLE ESQ; JAMES K; POOLE ESQ JAMES K

International class (IPC 8–9): A01K61/00 B63B3/04 B63B3/08 B63B35/26 B63B35/44 B63B5/18 E02B3/06 E02D27/06 (Advanced/Invention); A01K61/00 B63B3/00 B63B35/14 B63B35/44 B63B5/00 E02B3/06 E02D27/04 (Core/Invention)

International class (IPC 1–7): B63B3/02 B63B35/44 E01D19/12 E01D21/00 E02B3/00 E02B3/04 E02B3/12 G02B3/14

CPC: E02B3/102 E02B3/108 B63B3/08 B63B2035/4466 B63C1/04 E02B3/062 A01K61/59 A01K61/54 A01K61/70 B63B35/44 B63B3/04 B63B5/18 B63B35/26 E02B3/06 E02D27/06

European class: A01K61/00B A01K61/00D A01K61/00E B63B3/04 B63B3/08 B63B35/26 B63B35/44 B63B5/18 B63C1/04 E02B3/06 E02B3/06B E02B3/10 E02D27/06 L63B35/44E9

US class: 114/258 114/263 114/264 114/267 114/65 114/65.00A 114/65A 114/77 114/77.00R 114/77.00RP 114/77R 119/238 14/23 14/28 14/73 405/15 405/16 405/17 405/23 405/284

Classification Explorer

Cited documents: WO9008059 A1, US984285 A, US6739797 BA, US6491473 BB, US6491473 BA, US6491473 B1, US6167827 BA, US6167827 B1, US5908265 A, US5697736 A, US5628280 A, US5524549 A, US5507988 A, US5429452 A, US5178493 A, US517652 A, US5158395 A, US5087150 A, US4964750 A, US4953280 A, US4940364 A, US4914876 A, US4911585 A, US4820079 A, US4801220 A, US4784520 A, US4712944 A, US4643618 A, US4607985 A, US4587684 A, US4440527 A, US4375928 A, US4266509 A, US4172680 A, US4165197 A, US4157695 A, US4152875 A, US4067285 A, US3974789 A, US3969900 A, US3957098 A, US3951085 A, US3906687 A, US3878806 A, US3832748 A, US3802205 A, US3722222 A, US3665882 A, US3640075 A, US3557742 A, US3516255 A, US3490407 A, US3344609 A, US2981219 A, US2390940 A, US2370940 A, US2369615 A, US2348508 A, US2159685 A, US2003035690 AA, US1885889 A, US1847043 A, US1778574 A, US1489428 A, US1247750 A, US1229152 A, US1177381 A, US1173879 A, JP9028232 A2, JP6287970 A2,

Forward Citations:

WO16183184, WO13029007, WO08094772, WO08094772, WO07053377, US9624899, US9617970, US9556574, US9546044, US9517820, US9469963, US9464413, US9387913, US9382681, US9334616, US9267283, US9266590, US9260343, US9181668, US9157211, US9157203, US9057188, US9051168, US8985897, US8979427, US8869746, US8867691, US8807869, US8790109, US8740500, US8621740, US8590564, US8544227, US8540459, US8496406, US8360100, US8231445, US8177457, US8113740, US8052348, US7992509, US7762205, US7632437, US7603959, US7588390, US7422392, US7401999, US7373892, US7090440, US7052205, US7021229, US7007620, US6880474, US6659686, US2016153160, US2016083052, US2016023718, US2015353172, US2014193199, US2014060028, US2013319533, US2013160444, US2013149036, US2013061796, US2013055946, US2012315090, US2012138700, US2012051845, US2011305511, US2011283929, US2011132250, US2011123275, US2011094623, US2011017144, US2010310318, US2010186216, US2010158617, US2010132292, US2010074687, US2010051714, US2009304448, US2009226260, US2009023375, US2008202442, US2008138155, US2008086066, US2008056823, US2007283866, US2007101673, US2007095266, US2007017427, US2006127181, US2006078388, US2005100408, US2005000398, US2004244667, US2004099192, US2003091391, KR100921188, ITMC20090145, CN105421290, AU2002226206, AT13164,

Abstract:
Source: US2002104469A Novel precast concrete boxes which can be assembled together and/or with structural shapes disclosed in U.S. Pat. No. 5,697,736 to form waterfront structures such as seawalls, boathouses and the like. The boxes can be sized and proportioned so as to be conveniently assembled in such structures and to be easily transported via intermodal transportation media. Novel methods of waterborne transport and installation of the boxes are disclosed. Shellfish habitats based upon the boxes are also disclosed.

0) US2014298745A – APPARATUS, SYSTEMS AND METHODS FOR MODULAR CONS...

5) Family number: 54120195 (US2014298745A) © PatBase

Title: APPARATUS, SYSTEMS AND METHODS FOR MODULAR CONSTRUCTION

Priority: CA20122853511 20121214 CA20152853511 20151127 US20110570656P 20111214 WO2012CA50901 20121214 US20120356574 20121214

Family:

Publication number	Publication date	Application number	Application date
CA2853511 AA	20140425	CA20122853511	20121214
CA2853511 C	20160202	CA20122853511	20121214
CA2912994 AA	20130620	CA20122912994	20121214
EP2790883 A1	20141022	EP20120856691	20121214
EP2790883 A4	20150722	EP20120856691	20121214
NZ625382 A	20160129	NZ20120625382	20121214
SG11201402089U A1	20140627	SG20141102089	20121214
US2014298745 AA	20141009	US20120356574	20121214
WO13086638 A1	20130620	WO2012CA50901	20121214

Probable Assignee: MARION INVESTMENTS LTD

Assignee(s):(std)**:** MARION INVEST LTD

Assignee(s): MARION INVESTMENTS LTD ; RECHENMACHER WILLIAM JOHN ; YANG TSUNG YUAN

Inventor(s):(std)**:** RECHENMACHER WILLIAM JOHN ; YANG TSUNG YUAN

Agent(s): OYEN WIGGS GREEN AND MUTALA LLP; EISENFUEHR SPEISER; TAKAGAWA DAVID H ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B28B23/02 B28B23/18 B28B23/22 B28B7/22 E04B1/16 E04B1/343 E04B1/348 E04B2/86 E04C3/02 E04C3/30 E04G21/02 E04H1/00 (Advanced/Invention)

CPC: E04B1/165 E04G21/02 E04H1/005 E04B1/161 E04B2/86 E04B1/3483

US class: 52/425 52/742.14

Classification Explorer

Cited documents: WO09112037 A1, USRE28367 E, US7827738 BB, US5678372 A, US5584151 A, US4833841 A, US4646495 A, US4525975 A, US4413454 A, US3990193 A, US3818660 A, US3678638 A, US3514910 A, US3512315 A, US3510997 A, US3331170 A, US3127702 A, US2013047539 AA, US2011023383 AA, US2008134589 AA, US2005204687 AA, GB2252986 A1, GB2015615 A1,

Forward Citations: US9631365, US9617750, US9593478, US9556612, US9518401, US9347222, US2015167289, US2015152634, CN103882945, CN103882945,

Abstract:
Source: US2014298745A Methods of modular building construction are provided. One method includes (a) providing a first volumetric construction module comprising a frame, the frame including a first segment; (b) defining a volume of a composite segment and integrating the first segment with the volume; and (c) filling the volume with a curable material to cast the composite segment. Related methods, components, buildings incorporating such components, and methods of manufacture of components are also provided.

0) US2011283643A – DECK ASSEMBLY MODULE FOR A STEEL FRAMED BUILDIN...

6) Family number: 49957716 (US2011283643A) © PatBase

Title: DECK ASSEMBLY MODULE FOR A STEEL FRAMED BUILDING

Priority: US20100346812P 20100520 US20110112980 20110520 US20110452605P 20110314 US20120420470 20120314 US20120589554 20120820 WO2012US29119 20120314

Family:

Publication number	Publication date	Application number	Application date
BR112013023455 A2	20161213	BR20131123455	20120314
CN103890291 A	20140625	CN201280021366	20120314
CN103890291 B	20170531	CN201280021366	20120314
EP2686498 A2	20140122	EP20120757644	20120314
EP2686498 A4	20150429	EP20120757644	20120314
EP2686498 B1	20170301	EP20120757644	20120314
IN07500CN2013 A	20141010	IN2013CN07500	20130917
JP2014518963 T2	20140807	JP20130558148T	20120314
JP5972294 B2	20160817	JP20130558148T	20120314
KR101733262 B1	20170508	KR20137027075	20120314
KR20140016940 A	20140210	KR20137027075	20120314
US2011283643 AA	20111124	US20110112980	20110520
US2012233945 AA	20120920	US20120420470	20120314
US2012311950 AA	20121213	US20120589554	20120820
US8245469 BB	20120821	US20110112980	20110520
US8544226 BB	20131001	US20120420470	20120314
WO11146897 A1	20111124	WO2011US37452	20110520
WO12125760 A2	20120920	WO2012US29119	20120314
WO12125760 A3	20140501	WO2012US29119	20120314

Probable Assignee: ADITAZZ INC

Assignee(s):(std)**:** ADITAZZ INC ; NG MABE ; RUBEL ZIGMUND

Inventor(s):(std)**:** NG MABE ; RUBEL ZIGMUND

Inventor(s): ZIGMUND RUBEL

Agent(s): EIP; WILSON MARK A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** E04B1/00 E04B1/16 E04B1/18 E04B1/19 E04B1/20 E04B1/24 E04B1/38 E04B2/74 E04B2/76 E04C1/00 E04H1/00 E04H12/00 E04H14/00 E04H3/00 E04H5/00 E04H6/00 (Advanced/Invention)

CPC: E04B1/24 E04B5/40 E04B5/48 E04B2001/2484 E04B2/7411 E04B2/7457 E04B2/768 E04B2001/2454 E04B2001/2457

European class: E04B1/24 E04B2/74C2F E04B2/74C5C E04B2/76D2A E04B5/40 E04B5/48 P04B1/24B42 P04B1/24B50 P04B1/24E

US class: 52/223.6 52/236.3 52/236.6 52/266 52/270 52/309.12 52/309.16 52/309.17 52/317 52/327 52/327P 52/404.1 52/414 52/481.1 52/650.3 52/650.300S 52/653.1 52/653.100S 52/655.1 52/707 52/745.05

Classification Explorer

Cited documents: WO9733788 A1, WO9201848 A1, USRE39462 E, US6804923 BA, US6568139 BB, US6484471 BB, US6467223 BA, US6412233 BA, US6295781 BA, US6122871 A,

US5953864 A, US5758467 A, US5755066 A, US5685124 A, US5425214 A, US5399050 A, US5396747 A, US5127760 A, US5127760, US5113625 A, US4800697 A, US4300320 A, US4285173 A, US4144369 A, US4120131 A, US4037375 A, US3029561 A, US2766855 A, US2012000149 AA, US2011296789 AA, US2011296778 AA, US2011296769 AA, US2011252719 AA, US2011094759 AA, US2010146874 AA, US2010088970 AA, US2009272067 AA, US2009266010 AA, US2009188193 AA, US2009057486 AA, US2008295433 AA, US2008196337 AA, US2008010943 AA, US2007101675 AA, US2007000077 AA, US2006179750 AA, US2005210798 AA, US2004003564 AA, US05755066, US05127760, JP7034572, JP4028066 B2, JP201070907, JP2010261234 A2, JP2010261234, JP2010070907 A2, JP2004124480 A2, JP2004124480, JP2000501800 T2, JP2000501800, JP2000355999, JP0428066 B2, FR77413 E, EP1538272 A1, CN86105917 A, CN2344463 Y, CN1213030 A, CN1086766 C, CA2308254 AA,

Forward Citations: WO16118653, WO16057790, WO15038805, US9637910, US9512619, US9506266, US9371648, US9057190, US9045894, US8997431, US8863466, US8584404, US2016251853, US2016076269, US2015152630, US2014311077, US2013298492, US2011000147,

Abstract:
Source: US2011283643A A deck assembly module is disclosed. The deck assembly module can be installed into the steel frame of a steel framed building. The deck assembly module includes a cellular metal deck. In an embodiment, the cellular metal deck includes a bottom plate having a top major surface and a bottom major surface, an angled decking sheet, and fireproof insulation. The angled decking sheet is angled to form a repeating pattern of troughs and peaks, the angled decking is adjacent to the top major surface of the bottom plate, and the fireproof insulation is located in channels formed by the peaks of the angled decking sheet and the top surface of the bottom plate and the angled decking sheet. The deck assembly module may also include a concrete portion that includes a top major surface, referred to as a concrete deck.

0) US4776145A – MULTI PURPOSE DOME STRUCTURE AND THE CONSTRUCTI...

7) Family number: 29371029 (US4776145A) © PatBase

Title: MULTI PURPOSE DOME STRUCTURE AND THE CONSTRUCTION THEREOF

Priority:

CA19870547969 19870928	CA19870616173 19870928	CA19875479690 19870928
CA19952153631 19950711	US19890436479 19891114	US19910753652 19910930
EP19870307967 19870909	US19900477715 19900209	US19880206849 19880615
US19830559911 19831209	US19890396377 19890821	US19860915269 19861003
US19970874494 19970613	US19940279635 19940722	US19930076261 19930611
US19930012986 19930129	US19910782436 19911025	US19910797904 19911126

Family:

Publication number	Publication date	Application number	Application date
AT76671 E	19920615	AT19870307967T	19870909
CA1300840 A1	19920519	CA19870547969	19870928
CA1315944 A1	19930413	CA19870616173	19870928
CA1315944 A2	19930413	CA19910616173	19910923
CA2153631 AA	19960123	CA19952153631	19950711
DE3779388 D1	19920702	DE19873779388	19870909
EP0262818 A2	19880406	EP19870307967	19870909
EP0262818 A3	19881026	EP19870307967	19870909
EP0262818 B1	19920527	EP19870307967	19870909
US4776145 A	19881011	US19830559911	19831209
US4879859 A	19891114	US19860915269	19861003
US5094044 A	19920310	US19900477715	19900209
US5105590 A	19920421	US19890436479	19891114
US5134830 A	19920804	US19890396377	19890821
US5177919 A	19930112	US19910753652	19910930
US5408793 A	19950425	US19930012986	19930129
US5675941 A	19971014	US19940279635	19940722
US5881530 A	19990316	US19970874494	19970613

Probable Assignee: DYKMANS MAXIMILIAAN JACOBUS

Assignee(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAN J ; DYKMANS MAXIMILLIAAN J

Assignee(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF ; DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF US

Inventor(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAAN J ; DYKMANS MAXIMILLIAN J

Inventor(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF

Agent(s): SMART AND BIGGAR

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

International class (IPC 8–9): B65D88/00 B65D88/34 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04B7/10 E04C5/08 E04C5/18 E04G11/04 E04G11/06 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 (Advanced/Invention);
E04B1/32 (Advanced/Non–invention);
B65D88/00 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04C5/00 E04C5/18 E04G11/00 E04G21/12 E04H7/00 (Core/Invention)

International class (IPC 1–7): B65D88/00 B65D90/00 E02D5/74 E04B1/16 E04B1/32 E04G11/04 E04H7/00

CPC: B65D88/34 E04B1/168 E04B1/3211 E04B7/08 E04B2001/3217 E04B2001/3264 E04C5/08 E04C5/18 E04G11/04 E04G11/065 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 E04B7/102 E04G11/045 E04G2021/127

European class: B65D88/34 E04B1/16F1 E04B1/32C E04B7/08 E04B7/10B E04C5/08 E04C5/18 E04G11/04 E04G11/06B2 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 P04B1/32H P04B1/32N1

US class: 156/143 220/319 264/32 264/34 405/229 405/244 417/38 427/496 427/501 427/508 427/513 52/169.7 52/2 52/2.15 52/215 52/223.14 52/223.2 52/223.3 52/223.4 52/223.6 52/223L 52/223R 52/224 52/235 52/245 52/247 52/249 52/297 52/298 52/309.16 52/309.17 52/573 52/573.1 52/741 52/741.1 52/741.4 52/745.01 52/745.06 52/745.07 52/745.2 52/80 52/80.1 52/800 52/801 52/81.1 52/81.6 522/980

Classification Explorer

Cited documents: USRE28689 E, US5675941 A, US5408793 A, US5134830 A, US5094044 A, US4884747 A, US4879859 A, US4875808 A, US4869467 A, US4776145 A, US4723751 A, US4696133 A, US4642856 A, US4629592 A, US4628861 A, US4593360 A, US4588541 A, US4578302 A, US4550544 A, US4514471 A, US4493286 A, US4468412 A, US4446083 A, US4442059 A, US4372733 A, US4365455 A, US4324074 A, US4321776 A, US4320075 A, US4317317 A, US4307554 A, US4302979 A, US4302978 A, US4289564 A, US4271647 A, US4269011 A, US4226677 A, US4170093 A, US4155967 A, US4148332 A, US4144680 A, US4126976 A, US4104097 A, US4102956 A, US4094110 A, US4077177 A, US4069642 A, US4068777 A, US4021972 A, US3984266 A, US3956816 A, US3927497 A, US3922426 A, US3914077 A, US3906700 A, US3892367 A, US3886961 A, US3872634 A, US3824751 A, US3801009 A, US3769763 A, US3765605 A, US3719341 A, US3676976 A, US3666190 A, US3666189 A, US3643910 A, US3619432 A, US3619431 A, US3616070 A, US3572596 A, US3557515 A, US3518748 A, US3510041 A, US3504474 A, US3462521 A, US3410039 A, US3409222 A, US3397503 A, US3338010 A, US3315343 A, US3280525 A, US3278128 A, US3277219 A, US3233376 A, US3153302 A, US3139464 A, US3118010 A, US2952947 A, US2892239 A, US2836529 A, US2833593 A, US2579183 A, US2544828 A, US2414310 A, US2413243 A, US2388701 A, US2335300 A, US2270229 A, US2250175 A, US2223418 A, US2185749 A, US1870487 A, US1668486 A, US1492327 A, SU7616799, SU761679 T, SU715757 T, SU596291 T, SU559009 T, SU236743 T, JP54022470 A2, GB938939 A, GB815942 A, GB776077 A, GB2092215 A1, FR94811 E, FR935724 A, FR549619 A, FR2490745 A1, FR1489329 A, FR1383795 A, DE3329296 A1, DE2722984 A1, DE2716325 A1, DE2013337 A1, DE1052103 B, DE1052103 A, DE1052103 A, CA707523 A, BE549619 A, AU788927 A1,

Forward Citations: WO9528538, WO16055840, WO15118258, WO14085629, WO14085629, WO05082747, WO0063503, USRE39554, USD746670, USD711214, USD608440, US9650800, US9611662, US9605423, US9556626, US9546495, US9453606, US9441389, US9284114, US9217255, US9181690, US8991137, US8973336, US8684220, US8650830, US8627612, US8621790, US8191318, US8167676, US7971602, US7913462, US7765746, US7682993, US7506483, US7260998, US6892505, US6843443, US6840013, US6771731, US6739103, US6675548, US6616381, US6421963, US6276095, US6240686, US6090465, US5918438, US5881530, US5759849, US5680739, US5675941, US5673528, US5672506, US5647503, US5542229, US5436385, US5408793, US5361550, US5313763, US5168676, US5094044, US5025605, US2015267434, US2015197953, US2015075099, US2014250803, US2014245691, US2014231617, US2014144916, US2012311941, US2012297698, US2012285575, US2012211391, US2012102875, US2012000546, US2011219707, US2010320915, US2010294778, US2010154320, US2010154319, US2010154318, US2010101163, US2009212168, US2009025306, US2008196348, US2008128030, US2007102063, US2007094938, US2006230985, US2006207337, US2006037278, US2005210767, US2005166475, US2005097830, US2005077293, US2004045227, US2004006926, US2003233798, US2003150188, US2003054542, US2002187730, US2002074444, RU2582682, GB2473017, GB2473017, GB2218453, FR3017123, ES2136521, EP2578235, EP1690585, EP1087069, EP0829586, EP0572243, EP0357151, EP0357151, DE202008017456, AU2007100985,

Abstract:
Source: US4776145A An improved dome structure on a base is disclosed comprising of a membrane sandwiched between layers of rigidifying material such as shotcrete which also serve to embed the circumferential and radial prestressing members. Circumferential prestressing can be applied to minimize bursting stresses. Further layers of rigidifying material can then be applied over the circumferential prestressing as a final protection and cover. The radial prestressing materials can contain spacers or hooks to preclude the circumferential prestressing material from riding up on the structure. The lower portion of the dome can include a reverse curvature to minimize stresses and stabilize the structure.

0) US5564235A – FOUNDATION AND FLOOR CONSTRUCTION MEANS

8) Family number: 30220580 (US5564235A) © PatBase

Title: FOUNDATION AND FLOOR CONSTRUCTION MEANS

Priority: US19940299474 19940829 US19950398356 19950303 US19960013589P 19960315 US19970818497 19970314 US19970067741P 19971202 US19960600408 19960212 US19960022443P 19960805 US19960019551P 19960610 US19960015159P 19960410 WO1995US10951 19950828 WO1997US02599 19970211 US19980185336 19981103 US19970831592 19970409 US19980201741 19981201 US19970871395 19970609 US19970831591 19970409

Family:

Publication number	Publication date	Application number	Application date
AU199534189 A1	19960322	AU19950034189	19950828
AU199721311 A1	19970828	AU19970021311	19970211
US5564235 A	19961015	US19940299474	19940829
US5830378 A	19981103	US19960600408	19960212
US6076320 A	20000620	US19970871395	19970609
US6120723 A	20000919	US19970831592	19970409
US6205725 BA	20010327	US19980201741	19981201
US6367764 BA	20020409	US19980185336	19981103
US6550213 BA	20030422	US19970831591	19970409
WO9606985 A1	19960307	WO1995US10951	19950828
WO9728939 A1	19970814	WO1997US02599	19970211

Probable Assignee: BUTLER MICHAEL G

Assignee(s):(std)**:** BUTLER MICHAEL ; BUTLER MICHAEL G ; MICHAEL BUTLER ; MICHAEL G BUTLER

Inventor(s):(std)**:** BUTLER MICHAEL ; BUTLER MICHAEL G

Inventor(s): MICHAEL G BUTLER ; MICHAEL BUTLER

Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LK LR LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TT UA UG US UZ VN

International class (IPC 8–9)**:** B28B7/22 E02D27/00 E02D27/02 E04B5/10 E04B5/14 E04G13/00 (Advanced/Invention); E02D27/00 E04B5/10 E04B5/14 E04G13/00 (Core/Invention)

International class (IPC 1–7)**:** B28B7/22 E01C7/00 E01C7/14 E02D20/00 E02D27/00 E02D27/32 E04B5/10 E04B5/17 E04G11/00

CPC: E02D27/02 Y10T16/536 E04B5/14 E02D27/00 E02D2220/00 E04B5/10 E04G13/00

European class: E02D27/00 E02D27/02 E04B5/10 E04B5/14 E04G13/00 P02D220/00

US class: 16/260 249/13 249/18 249/210 249/3 249/34 249/4 249/47 249/6 249/7 249/93 249/97 264/333 405/229 405/259.1 411/397 52/126.6 52/169.12 52/263 52/274 52/292 52/293.1 52/293.3 52/294 52/295 52/299 52/528 52/537 52/588.1 52/630 52/650.3 52/741.15 52/742.14 52/783.11 522/920 522/940

Classification Explorer

Cited documents: US5873689 A, US5830378 A, US5817247 A, US5664377 A, US5564235 A, US5402614 A, US5399050 A, US5366328 A, US5343667 A, US5240224 A, US5224321 A, US5205942 A, US5165213 A, US5154560 A, US4930278 A, US4843793 A, US4738061 A, US4699547 A, US4656797 A, US4630971 A, US4618291 A, US4573302 A, US4536115 A, US4533112 A, US4490958 A, US4464873 A, US4451022 A, US4340200 A, US4263762 A, US4258514 A, US4202145 A, US4142705 A, US4066237 A, US3977536 A, US3903626 A, US3826460 A, US3820295 A, US3810364 A, US3797800 A, US3785606 A, US3753323 A, US3397494 A, US3378968 A, US3262236 A, US3207465 A, US3176432 A, US2846749 A, US2835017 A, US2743602 A, US2731700 A, US2611169 A, US2490228 A, US2200636 A, US2144700 A, US1975815 A, US1897530 A, US1576846 A, US1512165 A, US1484398 A, SU1035172 T, JP6180063 A2, JP6116966 A2, JP6057761 A2, JP4228724 A2, JP4092021 A2, JP3199528 A2, GB2147635 A1, DE2829249 A1, CH293955 A, CA743322 A, CA1145179 A1, BE688535

A,

Forward Citations: WO9830865, WO15070175, WO13106604, WO10144109, WO09082087, WO08057572, WO07084833, WO05075750, WO05075750, WO0163056, WO0163056, USD736953, USD733329, USD733328, USD732701, USD700366, USD700365, USD700364, USD698947, USD698946, USD698944, USD698046, USD690838, USD690442, USD687977, USD687976, USD679834, USD679421, USD679420, USD677404, USD677403, USD677402, USD668357, USD668356, USD668354, USD668353, USD667963, US9677268, US9637874, US9624640, US9476178, US9447557, US9441366, US9394706, US9340977, US9249572, US9228365, US9222249, US9121390, US9109355, US9103090, US9085901, US9068319, US9015954, US8991122, US8973334, US8973324, US8904734, US8881478, US8875461, US8834072, US8827235, US8763982, US8763329, US8763328, US8760851, US8713888, US8627615, US8596002, US8555567, US8511010, US8479470, US8468774, US8429866, US8397454, US8364620, US8343343, US8327592, US8307608, US8297006, US8286398, US8286394, US8281551, US8186115, US8132774, US8112968, US8082703, US8073566, US8068962, US8061680, US8024905, US7997042, US7966780, US7905066, US7894920, US7849647, US7841576, US7835810, US7823357, US7814726, US7757446, US7596923, US7568860, US7559178, US7549617, US7517170, US7516582, US7509778, US7478510, US7331560, US7325363, US7296501, US7290749, US7194845, US7174681, US7171789, US7168343, US7131239, US7124550, US7076925, US7003918, US6883289, US6874288, US6866239, US6826882, US6702522, US6629681, US6612084, US6578333, US6578332, US6574937, US6564519, US6550213, US6519906, US6494006, US6443418, US6435765, US6367764, US6354050, US6314695, US6256958, US6076320, US6038823, US5906076, US2016201276, US2015176268, US2014202103, US2014190093, US2014069045, US2013108465, US2013074431, US2012192422, US2012155960, US2012137610, US2012085062, US2012085049, US2012021242, US2012011800, US2011197544, US2011113725, US2011107724, US2011078967, US2011023411, US2011000165, US2010314305, US2010300018, US2010275540, US2010223867, US2010199576, US2010146893, US2010101179, US2010077678, US2010024311, US2010011698, US2010011692, US2009282754, US2009272873, US2009241448, US2009241447, US2009193734, US2009129116, US2009084068, US2009044461, US2008276555, US2008142678, US2008120937, US2008104910, US2008036106, US2008022618, US2007294965, US2007271870, US2007271073, US2007266659, US2007266651, US2007265724, US2007264108, US2007264107, US2007262040, US2007261318, US2007260345, US2007256392, US2007204540, US2007147962, US2007056227, US2007028542, US2007000197, US2006267532, US2006257210, US2006248838, US2006242922, US2006156646, US2006144007, US2006101776, US2006080907, US2006059787, US2005246975, US2005126111, US2005126108, US2005086905, US2005072117, US2005034394, US2005034391, US2005028457, US2004187414, US2004182028, US2004144053, US2004099785, US2004050001, US2004040239, US2004025450, US2003146365, US2002002806, US2001002529, JP4213753, JP2007519844, GB2531356, GB2465822, GB2436339, GB2408287, FR2998594, EP1840275, EP0982450, EA017909, DE10353277, CN104204375, CN104204375, CN102926545, AU2010257353,

Abstract:
Source: US5564235A A foundation structure comprises a plurality of light metal parts which assemble and secure in place prior to placement of foundation in situ concrete. Assemblage is supported by coarsely threaded rods which screw directly into earth and attach to parts by various methods. Some parts remain in place as permanent supporting members for superimposed structure. Others, which generally form surfaces of foundation concrete, subsequently relocate to become either similar permanent structural members, or inventory for subsequent projects. Use of a computer aided design program assists in optimal configuration of parts, and creates a list of parts with necessary cut and piecemark information for automated fabrication of any particular length parts. This information, along with a computer produced schematic plan, allows use of parts as collocation elements which define a distinct foundation design by simple field assembly. Variations in assemblage of parts accommodate requirements of site, user needs, and materials of subsequent structure. Specific versions offer an integral joist floor structure, a free standing wall, or a concrete slab on grade. Interface with subsequently superimposed walls is specific to those of either framed members, or concrete type materials.

0) US2004093817A – REFINEMENTS TO THE CONSTRUCTION SYSTEMS FOR STR...

9) Family number: 28838032 (US2004093817A) © PatBase

Title: REFINEMENTS TO THE CONSTRUCTION SYSTEMS FOR STRUCTURES IN REINFORCED CONCRETE OR SOME OTHER MATERIAL BY MEANS OF HIGH–PRECISION INTEGRAL MODULAR FORMS

Priority: ES20020000264 20021118 ES20020002648 20021118 US20030697203 20031030 US20060495544 20060731

Family:

Publication number	Publication date	Application number	Application date
DE10353277 A1	20090507	DE20031053277	20031114
ES2281212 AA	20070916	ES20020002648	20021118
ES2281212 BA	20080816	ES20020002648	20021118
FR2850415 A1	20040730	FR20030005952	20030519
FR2850415 B1	20070406	FR20030005952	20030519
GB200310568 A0	20030611	GB20030010568	20030508
GB2395221 A1	20040519	GB20030010568	20030508
GB2395221 B2	20060104	GB20030010568	20030508
US2004093817 AA	20040520	US20030697203	20031030
US2006260238 AA	20061123	US20060495544	20060731

Probable Assignee: SIST S INDUSTRIALIZADOS BARCON

Assignee(s):(std): BARCONS SALVADOR P ; BARCONS SALVADOR PUJOL ; PUJOL BARCONS SALVADOR ; SIST S INDUSTRIALIZADOS BARCON

Assignee(s): SISTEMAS INDUSTRIALIZADOS BARCONS S L ; SISTEMAS INDUSTRIALIZADOS BARCONS S L PUERTO DESANTA MARIA ; SISTEMAS INDUSTRIALIZADOS BARCONS S L POLIGONOINDUSTRIAL LAS SALINAS DE LEVANTE ; SALVADOR PUJOL BARCONS ; SISTEMAS INDUSTRIALIZADOS BARCONS SL ; SISTEMAS INDUSTRIALIZADOS BARCONS S L POLIGONOINDU

Inventor(s):(std): PUJOL BARCONS SALVADOR ; BARCONS SALVADOR PUJOL ; BARCONS SALVADOR P

Inventor(s): SALVADOR PUJOL BARCONS

Agent(s): CABINET NETTER; CROWELL AND MORING LLP, INTELLECTUAL PROPERTY GROUP

International class (IPC 8–9): E02D27/01 E04B1/16 E04B1/18 E04G1/36 E04G11/02 E04G11/06 E04G11/08 E04G11/10 E04G11/20 E04G11/28 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/00 E04G15/02 E04G15/06 E04G17/00 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00 E04G21/00 E04G21/02 E04G21/12 E04G25/00 E04G27/00 E04G9/02 E04G9/08 (Advanced/Invention); E02D27/01 E04B1/16 E04B1/18 E04G1/36 E04G11/00 E04G13/00 E04G15/00 E04G17/00 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00 E04G21/00 E04G21/02 E04G21/12 E04G25/00 E04G27/00 E04G9/02 E04G9/08 (Core/Invention)

International class (IPC 1–7): B28B7/22 E02D1/00 E04B1/00 E04F10/00 E04G1/00 E04G11/02 E04G21/00

CPC: E04G19/00 E02D27/01 E04B1/161 E04G1/36 E04G11/02 E04G11/087 E04G11/10 E04G11/20 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/02 E04G15/06 E04G17/001 E04G17/002 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/003 E04G19/006 E04G21/025 E04G21/122 E04G27/00 E04G15/00 E04G17/00 E04G25/00 E02D27/013 E02D27/016 E04G13/062 E04G13/066

European class: E02D27/01 E04B1/16A E04G1/36 E04G11/02 E04G11/08D E04G11/10 E04G11/20 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/00 E04G15/02 E04G15/06 E04G17/00 E04G17/00B E04G17/00D E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00A E04G19/00B E04G21/02B E04G21/12C E04G25/00 E04G27/00

US class: 249/13 52/294 52/414

Classification Explorer

Cited documents: WO9841714 A1, WO9728939 A1, WO0248479 A2, US6158710 A, US3357673 A, US2846749 A, US2526529 A, US2004079859 AA, US2003209648 AA, US1747036 A, FR622331 A, FR2384919 A1, FR1352779 A, ES2142222 AA, ES2120298 AA, EP0436392 A1, EP0123264 A2, DE3536523 C2, DE3536523 A1, DE3129838 A1,

Forward Citations: WO13023330, WO10112633, WO08145790, US9453345, US9441365, US9359780, US9315987, US9273479, US9273477, US9206614, US9080337, US8943774, US8844241, US8793953, US8763328, US8555590, US8458985, US8458969, US8326664, US7698866, US7658051, US7191528, US7055251, US2015191924, US2011301995, US2011131914, US2010223867, US2010119336, US2006207113, US2006107543, US2006042183, ES2308934, EP2461118, EP2461118, CN105019651, CN105019651, CN103470031, CN103276895, CN103276895, CN103195079, CN103104094, CN103104094, CN102720361, CN102425303, CN101942841,

Abstract:
Source: US2004093817A A foundation framework for structures in a reinforced setting material includes a foundation raft with a form having a plurality of modular panels and angular reinforcements for joining at least two faces of at least one right−angle dihedral formed by faces of the modular panels. A layout and positioning template is disposed on top of the form of the foundation raft for correctly dimensioning, positioning, and fitting walls, installations and reinforcements in the foundation raft. Adjustment legs for centering the layout and positioning template are provided, as well as self−centering clamps and a stabilizer having security pins and an anchorage mechanism for securing the form to a support surface.

10) Family number: 30433309 (US5894003A) © PatBase

Title: METHOD OF STRENGTHENING AN EXISTING REINFORCED CONCRETE MEMBER

Priority: CA19992257739 19990106 US19960020921P 19960701 US20000536704 20000328 US19990290654 19990412 US19970886481 19970701

Family:

Publication number	Publication date	Application number	Application date
CA2257739 AA	20000706	CA19992257739	19990106
CA2257739 C	20061010	CA19992257739	19990106
US5894003 A	19990413	US19970886481	19970701
US6416693 BA	20020709	US20000536704	20000328

Probable Assignee: LOCKWOOD TECHNOLOGIES LTD

Assignee(s):(std)**:** LOCKWOOD WILLIAM D

Assignee(s): LOCKWOOD TECHNOLOGIES LTD

Inventor(s):(std)**:** LOCKWOOD WILLIAM D

Agent(s): GOWLING LAFLEUR HENDERSON LLP

International class (IPC 8–9)**:** E02D35/00 E04C5/00 E04G23/02 (Advanced/Invention); E02D35/00 E04C5/00 E04G23/02 (Core/Invention)

International class (IPC 1–7)**:** B32B35/00 E02D35/00 E04B1/16 E04C5/00 E04G23/02

CPC: E04G2023/0251 E04G23/0218

European class: E04G23/02C

US class: 156/94 156/98 264/138 264/228 264/229 264/35 264/36.19 264/36.2

Classification Explorer

Cited documents: US5565257 A, US5373675 A, US513794 A, US5115622 A, US5115611 A, US4700516 A, US4646493 A, US4615163 A, US4574545 A, US4147009 A, US1605197 A, FR2562927 A1, FR2070942 A5,

Forward Citations: WO16171555, WO12006851, USRE39839, US9551156, US9322508, US9322172, US9194140, US9085898, US9034775, US8567146, US8367569, US8142102, US8109691, US7823354, US7743585, US7627997, US7100336, US6898908, US6846537, US6811861, US6746741, US6745528, US6729090, US6706380, US6701683, US6692595, US6612085, US2014245695, US2014099456, US2012073231, US2011194897, US2009263572, US2009214293, US2009081913, US2009071085, US2008104913, US2007272353, US2007144093, US2007125017, US2006236627, US2006218870, US2006059827, US2006000171, US2005262786, US2005258572, US2005241260, US2004206032, US2004065034, US2003226333, NL2014680, ES2169696, CN104790681,

Abstract:
Source: US5894003A Parallel spaced grooves are cut within the surface of an existing reinforced concrete member in the direction of bending and at locations where existing tensile reinforcing is inadequate. Elongated reinforcing elements, such as composite rods with continuous carbon fibers, are positioned within the grooves, after a curable bonding material, such as an epoxy resin, is inserted into each groove so that the bonding material surrounds the reinforcing element. The material is formed flush with the surface and allowed to cure to bond each reinforcing element to the concrete defining the corresponding groove. The grooves and reinforcing elements extend within the top surface of a concrete slab across a beam or support for the slab, extend within the bottom surface of the slab at least fifty percent of the distance between adjacent supports for the slab, or within a vertical surface of a concrete or masonry wall or column.

0) US2009217856A – FIXED STRUCTURE PLATFORM ON WATER

11) Family number: 34606707 (US2009217856A) © PatBase

Title: FIXED STRUCTURE PLATFORM ON WATER

Priority: TR20050005181 20051223 WO2006TR00072 20061220

Family:

Publication number	Publication date	Application number	Application date
AT498543 E	20110315	AT20060836010T	20061220
AU2006327288 AA	20070628	AU20060327288	20061220
CA2634916 AA	20080623	CA20062634916	20061220
CN101389527 A	20090318	CN200680053355	20061220
DE602006020175 D1	20110331	DE200660020175T	20061220
EA014336 B1	20101029	EA20080001503	20061220
EA200801503 A1	20090428	EA20080001503	20061220
EP1966037 A2	20080910	EP20060836010	20061220
EP1966037 B1	20110216	EP20060836010	20061220
IL192396 A0	20090803	IL20060192396	20061220
IN02963KN2008 A	20090206	IN2008KN02963	20080721
KR20080090456 A	20081008	KR20087018179	20061220
MX2008008243 A1	20081114	MX20080008243	20061220
TR200505181 A2	20070723	TR20050005181	20051223
US2009217856 AA	20090903	US20060158981	20061220
WO07073359 A2	20070628	WO2006TR00072	20061220
WO07073359 A3	20080717	WO2006TR00072	20061220

Probable Assignee: ALPAY INCE

Assignee(s):(std)**:** ALPAY INCE ; INCE ALPAY

Inventor(s):(std)**:** INCE ALPAY ; ALPAY INCE

Agent(s): SPRUSON AND FERGUSON; ROBIC; DERICIOGLU EKIN; VENABLE CAMPILLO LOGAN AND MEANEY PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B17/00 B63B35/44 B63B35/50 B63B9/06 E02B17/06 (Advanced/Invention); B63B17/00 B63B35/00 B63B35/44 B63B9/00 E02B17/00 (Core/Invention)

International class (IPC 1–7): B63B35/44 B63B9/06

CPC: B63B1/107 B63B21/29 B63B21/50 B63B35/44 B63B35/53

European class: B63B1/10C B63B21/50 B63B35/44 L63B21/29 L63B35/53

US class: 114/265

Classification Explorer

Cited documents: US3702105 A, US2399611 A, US1847551 A, US1670524 A, US1511153 A, RU2174930 C2,

Forward Citations: WO16161928, WO15133661, US2011064520, JP5838439, JP2012201191, CN104843151, CN104802952, CN104802952, CN104802949, CN104743080, CN104260843, CN103129716, CN102943432, CN102862655, CN102862655,

Abstract:
Source: US2009217856A The invention relates to the fixed platform which enables to locate on the water any

fixed structure such as the house, garden, road, airport, car park, children's park and holiday village in the seas, lakes and rivers. Our invention comprises the platform (7) where the floats (22) thereof capable of floating are submerged up to a safe zone 3–5 m from the water (10) surface, the floats (22) spending energy to come out on the water surface (5) produce forces to try to maintain the platform (7) always at the same point owing to the tightness of the ropes (3) of the floats (22) and where said platform (7) is prevented from being drifted by the violent storms and huge waves and the currents in the sea, wherein the platform (7) which is manufactured in a manner suitable for its purpose comprises the weight (4) to the end of which the ropes (3) are connected, the connecting ropes (3) serving to maintain the floats (22) at a constant distance from the floor and in submerged state, the floats (22) producing the buoyancy carried over by the platform (7), the carrier columns (21) connecting the floats (22) with the platform (7) and the connecting pieces (20) that connect the columns (21) with the platform (7).

0) US2009173037A – PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY ...

12) Family number: 43489452 (US2009173037A) © PatBase

Title: PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY EQUIPMENTS

Priority: CA20082642047 20081020 CA20082765207 20081020 US20080148051 20080415 US20080971018 20080108 US20080248051 20081009 US20090248051 20091009 US20080811199 20081017 US20080971018 20080107 US20080148051 20081009 WO2008CA01809 20081017

Family:

Publication number	Publication date	Application number	Application date
AU2008346725 AA	20090716	AU20080346725	20081017
BRPI0819947 A2	20150616	BR2008PI19947	20081017
CA2642047 AA	20090707	CA20082642047	20081020
CA2642047 C	20120626	CA20082642047	20081020
CA2765207 AA	20090707	CA20082765207	20081020
CN101910530 A	20101208	CN200880124304	20081017
EP2240652 A1	20101020	EP20080870040	20081017
EP2240652 A4	20140611	EP20080870040	20081017
IL206699 A0	20101230	IL20080206699	20081017
IN01385MN2010 A	20101112	IN2010MN01385	20100629
JP2011508837 T2	20110317	JP20100540994T	20081017
JP5336514 B2	20131106	JP20100540994T	20081017
KR20110016853 A	20110218	KR20107013188	20081017
MX2010007574 A1	20101110	MX20100007574	20081017
NZ586584 A	20130531	NZ20080586584	20081017
US2009173037 AA	20090709	US20080248051	20081009
US2010281784 AA	20101111	US20080811199	20081017
US2011120049 AA	20110526	US20080971018	20080108
WO09086617 A1	20090716	WO2008CA01809	20081017

Probable Assignee: LEO ANO

Assignee(s):(std)**:** ANO LEO ; LEO ANO

Inventor(s):(std)**:** ANO LEO ; LEO ANO

Agent(s): SPRUSON AND FERGUSON; ADE AND CO INC; THOMSON NEIL DAVID; ANO LEO; JEROME D JACKSON JACKSON PATENT LAW OFFICE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** E04B1/00 E04B1/18 E04B1/343 E04B1/348 E04B1/61 E04B1/62 E04B1/66 E04B1/70 E04B1/74 E04B1/76 E04B1/80 E04C2/20 E04C2/24 E04C2/26 E04C2/30 E04C2/38 E04C2/52 E04C3/02 E04C3/29 E04D13/08 E04D13/18 E04G E04G21/00 E04H1/00 E06B3/66 F24F5/00 (Advanced/Invention);
E04B1/00 E04B1/18 E04B1/61 E04B1/62 E04B1/66 E04C2/10 E04C2/30 E04C2/38 E04C3/29 E04G21/00 (Core/Invention);
E04G (Subclass/Invention)

International class (IPC 1–7)**:** E04B1/18 E04B1/62 E04C2/30 E04G21/00

CPC: F24F2005/0078 E04B1/74 E04B1/80 E04B1/0023 E04B1/30 E04B1/803 E04B2/7412 E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/1625 E04D13/17 E04D2013/0893 E06B3/6612 E06B3/6722 F24F5/0075 F24F13/18 Y02B30/92 Y02B80/12 Y02B80/24

European class: E04B1/00C E04B1/30 E04B1/74 E04B1/80 E04B1/80B E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/16A1C E04D13/17 E06B3/66D F24F13/18 F24F5/00K P04B2/74C2P P04D13/08W P06B3/67F2 Y02B10/22 Y02B30/92 Y02B80/12 Y02B80/24

US class: 52/16 52/16P 52/173.1 52/173.100S 52/173.3 52/173.300S 52/220.1 52/220.100S 52/302.1 52/302.100S 52/309.4 52/309.400S 52/633 52/633S 52/64 52/64S 52/741.1 52/741.100S 52/741.4 52/741.400P 52/745.13 52/745.130S 52/782.1 52/782.100P 52/782.100S 52/786.1 52/786.100S 52/79.1 52/79.100S

Classification Explorer

Cited documents: WO06123005 A1, US7788868 BB, US6976337 BB, US6916392 BB, US6857237 BA, US6830791 BA, US6793971 BB, US6705939 BB, US6701681 BB, US6676506 BB, US6637644 BB, US6622456 BB, US6584735 BB, US6578331 BA, US6446402 BA, US6429961 BA, US6216688 BA, US6209269 BA, US6158190 A, US6105336 A, US6000192 A, US5953883 A, US5890341 A, US5873203 A, US5787652 A, US5765330 A, US5761864 A, US5753069 A, US5608995 A, US5573618 A, US5424111 A, US5347779 A, US5269109 A, US5265389 A, US5197242 A, US4981003 A, US4671032 A, US4642958 A, US4571909 A, US4465058 A, US4393861 A, US4380994 A, US4303058 A, US4295415 A, US4236360 A, US4062347 A, US3981294 A, US3736715 A, US3643394 A, US3641724 A, US3343474 A, US3258889 A, US3217455 A, US3161267 A, US2641449 A, US2011023759 AA, US2010287851 AA, US2007251164 AA, US2007094964 AA, US2006123723 AA, US2005252108 AA, US2004209567 AA, US2004172892 AA, US2003217522 AA, US2003167714 AA, US2003150174 AA, US2003101664 AA, US2003041557 AA, US06000192, US05890341, JP5024756 U1, JP2001065074 A2, JP05024756 U, EP0794294 A1, DE19804008 A1,

Forward Citations: WO17017608, US9617750, US9562351, US9435113, US9310132, US9297164, US9234355, US9109364, US8789328, US8677696, US8375670, US8272182, US8152608, US2016040424, US2015361654, US2015292204, US2014230354, US2014182224, US2014133092, US2014124053, US2012318475, US2012304562, US2012108158, US2011308184, US2011225916, US2011107693, US2011091679, RU2582241, JP2011052411, EP3133221, CN103958796, CN102561725, CN102561725, CN102561531, CN102535841,

Abstract:
Source: US2009173037A This continuing present patent offers the "repeat at will" built–in on/off vacuum effect after installed at site, coordinating with the forced fluid to create a window treatment effect, and as well as being able to provide the three stages insulation value at the same time. The other parts of this continued patent are supplementation of additional claims and to complete and improve the parent patent regarding energy conservation for buildings. It offers more efficient ways of constructing energy efficient buildings for residential, commercial and industrial use.

0) US2005072061A – MODULAR SYSTEM OF PERMANENT FORMS FOR CASTING R...

13) Family number: 31797343 (US2005072061A) © PatBase

Title: MODULAR SYSTEM OF PERMANENT FORMS FOR CASTING REINFORCED CONCRETE BUILDINGS ON SITE

Priority: US20030679849 20031006 US20070668895 20070130

Family:

Publication number	Publication date	Application number	Application date
US2005072061 AA	20050407	US20030679849	20031006
US2008005990 AA	20080110	US20070668895	20070130
US7185467 BB	20070306	US20030679849	20031006

Probable Assignee: MARTY OSCAR

Assignee(s):(std)**:** MARTY OSCAR

Inventor(s):(std)**:** MARTY OSCAR

Agent(s): MESMER AND DELEAULT PLLC; ROBERT R

International class (IPC 8–9)**:** E04B1/16 E04B2/00 E04B5/36 E04B5/38 E04B7/10 (Advanced/Invention); E04B1/16 E04B5/32 E04B7/10 (Core/Invention)

International class (IPC 1–7)**:** E04H1/00

CPC: E04B1/165 E04B5/36 E04B5/38 E04B7/102

European class: E04B1/16D E04B5/36 E04B5/38 E04B7/10B

US class: 52/259 52/270 52/293.1 52/294 52/425 52/426 52/426P 52/429 52/582.1 52/745.1 52/745.13 52/79.1 52/79.14 52/791 524/250

Classification Explorer

Cited documents: USRE29249 E, US6985832 BB, US6948289 BB, US6883281 BA, US6880304 BA, US6721684 BA, US6536168 BA, US6523312 BB, US6460301 BA, US6457281 BA, US6385933 BA, US6256960 BA, US6250038 BA, US6119432 A, US6101779 A, US5930958 A, US5924254 A, US5887405 A, US5887404 A, US5678373 A, US5588786 A, US5473849 A, US5471811 A, US5368416 A, US5158399 A, US5103604 A, US4987719 A, US4957395 A, US4731971 A, US4669240 A, US4646495 A, US4398378 A, US4343125 A, US4336975 A, US4336675 A, US4269006 A, US4178942 A, US4178343 A, US4174009 A, US4158942 A, US4147009 A, US4127971 A, US4098040 A, US4081935 A, US4050213 A, US3984957 A, US3959423 A, US3952471 A, US3846946 A, US3834095 A, US3818660 A, US3780480 A, US3772835 A, US3712008 A, US3662506 A, US3600862 A, US3300943 A, US2851873 A, US2741908 A, US2335948 A, US2043697 A, US2010018144 AA, US2008216445 AA, US2008110118 AA, US2007210237 AA, US2007094992 AA, US2006179787 AA, US2005284090 AA, US2005155306 AA, US2005053429 AA, US2004118069 AA, US2004055237 AA, US2004045237 AA, US2004035073 AA, US2004020147 AA, US2003041555 AA, US2003019175 AA, US2002059761 AA, US2002026760 AA, US2002023401 AA, US2002005021 AA, US2001032425 AA, US2001000088 AA, US1757077 A, US1469955 A, US1353702 A, US1254109 A, EP0515724 A1,

Forward Citations: WO14182539, WO14056024, WO13075023, WO13075023, WO13007862, WO13007862, WO06115789, US9593478, US9371648, US8827235, US8713876, US8621818, US8291675, US8291646, US8186109, US8176696, US8161699, US8151537, US8082710, US8082699, US8074414, US7805908, US7786612, US7663263, US7607274, US7596909, US7504742, US7482707, US7436084, US7421828, US7365446, US2017044754, US2016369492, US2012167501, US2011154766, US2011016800, US2010180519, US2010077675, US2010058700, US2010024352, US2010024319, US2009282749, US2009145052, US2009107065, US2009019635, US2008152496, US2007152449, US2007113487, US2006220386, US2005193678, US2005086900, US2004131467, TWI340781, EP2780516, EP2780516, CN104895190, CN103866889,

Abstract:
Source: US2005072061A A permanent form building assembly includes one or more GRC forms having a one or more open cavities and a reinforcement structure. The GRC forms are designed and configured for a predetermined application. The reinforcement structure is inserted within the open cavities of the GRC forms prior

to filling with concrete.

0) US2011061336A – BUILDING SYSTEM, CONCRETE OR OSB, POUR MOLDED O...

14) Family number: 48463899 (US2011061336A) © PatBase

Title: BUILDING SYSTEM, CONCRETE OR OSB, POUR MOLDED OR PRESSED MOLDED, COMPOSITE PANELS, TRUSSES, AND PRODUCTS, WITH ENGINEERING METHODS AND FASTENERS, AND RELATED TRANSPORTATION, ERECTION, AND MATERIALS PROCESSING EQUIPMENT

Priority: US20090157328P 20090304 US20100717492 20100304

Family:

Publication number	Publication date	Application number	Application date
US2011061336 AA	20110317	US20100717492	20100304

Probable Assignee: THOMAS MICHAEL ROBERT

Assignee(s):(std)**:** THOMAS MICHAEL ROBERT

Inventor(s):(std)**:** THOMAS MICHAEL ROBERT

International class(IPC 8–9)**:** E04B1/00 (Advanced/Invention)

CPC: B66C23/342 E04B1/04 E04B1/10 E04B1/14 E04B1/34336 E04B5/043 E04B7/026 E04B2001/34389 E04C3/205 E04G21/16

European class: B66C23/34B E04B1/04 E04B1/10 E04B1/14 E04B1/343D E04B5/04H E04B7/02C E04C3/20B E04G21/16 P04B1/343P

US class: 52/745.19 52/745.190P

Classification Explorer

Forward Citations: WO14099735, US9630816, US9382703, US8661757, US2017035200, US2012240504,

Abstract:
Source: US2011061336A Franchised Building Construction System including Factory Concrete Yard or Site Built Semi Trucked Poured or Pressed Gang Molded Components made of Insulated Pumice and/or Styrofoam and/or Fiberglass Concrete or OSB Compositions, Trusses, Floor, Ceiling, and Wall Panels, 4 to 10 ft. Wide by 2 to 80 ft. Long, also New Component Connecting Fasteners, also Concrete and Asphalt Roofing Materials, Rolls and Sections, Poured or Pressed Composite Mobile Homes, Single and Double Wide, also Dimensional Building Materials including Flooring, Siding, and Framing, also Poured or Pressed Sheds, Doors, Windows, Furniture and Cabinets, also related Equipment including a Wire Pulling Rack System, Gantry Crane Mounted on a Truck, Rail Car, or Semi Trailer, with Telescoping Mast and Boom, Elevating Boom, Hydraulic Stabilizers, Pumice Concrete Composite Mixtures and Usages, also a Crane for Rolled Roofing Material Delivery and one for Tree Service and Selective Cut Cellulosic Building Materials Harvesting.

15) Family number: 55003364 (US2012031344A) © PatBase

Title: METHOD OF PRODUCING SHIPPING CONTAINERS FOR TRANSPORTING LIVESTOCK

Priority:
AU20110285854 20110802 AU20110286413 20110211 AU20130201954 20130326
AU20130201952 20130326 AU20130201950 20130326 AU20130201956 20130326
US20100371123P 20100805 US20100378473P 20100831 US20100373123P 20100812
US20100373123P 20100805 US20110000087 20110415 US20110051745 20110318
EP20110814922 20110211 EP20110815174 20110802 US20120636397P 20120420
US20110434366P 20110119 US20110434366P 20110128 US20110087583 20110415
US20110052159 20110321 US20110051845 20110318 US20110051907 20110318
US20110051943 20110318 WO2011US46237 20110802 WO2011US24602 20110211
US20130866627 20130419 WO2013US37179 20130418 US20110051754 20110318
US20150734050 20150609

Family:

Publication number	Publication date	Application number	Application date
AR080381 AA	20120404	AR2011P100698	20110304
AR086164 AA	20131127	AR2011P102756	20110729
AR090771 AA	20141203	AR2013P101316	20130422
AU2011100193 AD	20110428	AU20110100193	20110215
AU2011100193 BD	20120112	AU20110100193	20110215
AU2011285854 AA	20120209	AU20110285854	20110802
AU2011285854 BB	20140227	AU20110285854	20110802
AU2011286413 AA	20120209	AU20110286413	20110211
AU2011286413 BB	20131219	AU20110286413	20110211
AU2013201950 AA	20130418	AU20130201950	20130326
AU2013201950 BB	20150716	AU20130201950	20130326
AU2013201950 BH	20150806	AU20130201950	20130326
AU2013201952 AA	20130418	AU20130201952	20130326
AU2013201952 BB	20150122	AU20130201952	20130326
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AU2013201954 BB	20151224	AU20130201954	20130326
AU2013201956 AA	20130418	AU20130201956	20130326
AU2013201956 BB	20150122	AU20130201956	20130326
AU2013249207 AA	20131024	AU20130249207	20130418
AU2013249207 BB	20161013	AU20130249207	20130418
BR112013002799 A2	20161025	BR20131102799	20110211
CA2807297 AA	20120209	CA20112807297	20110211
CA2807297 C	20151201	CA20112807297	20110211
CA2807313 AA	20120209	CA20112807313	20110802
CA2807313 C	20150602	CA20112807313	20110802
CA2870737 AA	20141016	CA20132870737	20130418
CO7111257 A2	20141110	CO20140234029	20141022
DE602011017107 D1	20150723	DE201160017107T	20110211
DE602011021262 D1	20151217	DE201160021262T	20110802
EP2601096 A1	20130612	EP20110814922	20110211
EP2601096 A4	20140305	EP20110814922	20110211
EP2601096 B1	20150610	EP20110814922	20110211
EP2601097 A2	20130612	EP20110815174	20110802
EP2601097 A4	20140305	EP20110815174	20110802
EP2601097 B1	20151104	EP20110815174	20110802

EP2838760 A1	20150225	EP20130778339	20130418
EP2838760 A4	20160302	EP20130778339	20130418
MX2013001435 A1	20130405	MX20130001435	20110211
MX2013001436 A1	20130405	MX20130001436	20110802
MX2014012553 A1	20150303	MX20140012553	20130418
NZ607068 A	20140926	NZ20110607068	20110802
US2012031344 AA	20120209	US20110051943	20110318
US2012031345 AA	20120209	US20110087583	20110415
US2012031346 AA	20120209	US20110051845	20110318
US2012037082 AA	20120216	US20110051754	20110318
US2012037237 AA	20120216	US20110052159	20110321
US2012041900 AA	20120216	US20110051907	20110318
US2013276716 AA	20131024	US20130866627	20130419
US2015274055 AA	20151001	US20150734050	20150609
US8505491 BB	20130813	US20110052159	20110321
US8550035 BB	20131008	US20110051845	20110318
US8720379 BB	20140513	US20110051754	20110318
US9102258 BB	20150811	US20130866627	20130419
UY33352 A1	20111230	UY20110033352	20110425
UY33544 A1	20110930	UY20110033544	20110802
UY34756 A1	20131231	UY20130034756	20130423
WO12018410 A1	20120209	WO2011US24602	20110211
WO12018793 A2	20120209	WO2011US46237	20110802
WO12018793 A3	20120712	WO2011US46237	20110802
WO13158884 A1	20131024	WO2013US37179	20130418

Probable Assignee: ST REPRODUCTIVE TECH LLC

Assignee(s):(std)**:** INGURAN LLC ; MORENO JUAN ; NISBET DALE ; ROSENSTEIN MAURICE ; ST REPRODUCTIVE TECHNOLOGIES LLC ; ST REPRODUCTIVE TECH LLC

Assignee(s): ST REPRODUCTIVE TECHNOLOGIES LLC22575 STATE HIGHWAY 6 SOUTHNAVASOTATX77868US ; ST REPRODUCTIVE TECHNOLOGIES LLC NAVASOTA ; COMPASS BANK ; COMPASS BANK ADMINISTRATIVE AGENT AS ; ST REPORDUCTIVE TECHNOLOGIES ; ST REPORDUCTIVE TECHNOLOGIES LLC

Inventor(s):(std)**:** DALE NISBET ; JUAN MORENO ; MAURICE ROSENSTEIN ; MORENO JUAN ; NISBET DALE ; ROSENSTEIN MAURICE

Inventor(s): ROSENSTEIN MAURICE NAVASOTA ; NISBET DALEUS ; MORENO JUAN NAVASOTA

Agent(s): MIDDLETONS; K AND L GATES; A J PARK; AJ PARK; SIM AND MCBURNEY; AIRD AND BERLIS IP PARTNERSHIP LTD; MARIA MERCEDES DIAZ SUAREZ; KILBURN AND STRODE LLP; KADOR AND PARTNER; JACOB REUBEN ELLIS; CINDEE R; RYAN; CHRISTENSEN RYAN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A01K1/00 A01K1/02 A01K1/10 A01K1/12 A01K5/00 A01K7/00 A01K9/00 B60P3/04 B61D3/02 B63B25/00 B63B35/44 B65D25/04 B65D6/00 B65D85/50 B65D88/10 B65D88/12 B65D90/00 B65G57/03 F15D1/00 G06Q90/00 (Advanced/Invention); B63B25/00 (Advanced/Non–invention)

International class (IPC 1–7): B60P3/03

CPC: B60P3/04 A01K1/0052 A01K1/0272 B63B25/004 A01K1/0058 A01K1/0236 A01K1/0245 G06Q99/00 Y10T137/0396 A01K1/0047 A01K1/0005 A01K1/10

European class: A01K1/00D1 A01K1/00D2 A01K1/02D A01K1/02D1 A01K1/02D4 B63B25/00B2 G06Q99/00

US class: 1/1 119/400 119/406 119/408 119/409 119/412 119/415 119/416 119/454 119/482 119/496 119/519 137/14 414/802 414/803 705/500

Classification Explorer

Cited documents: WO9009098 A1, WO12018410 A1, USD630803 S1, USD579609 S1, USD218174 S1, US8075033 BA, US795849 A, US7921609 BB, US7913651 BA, US7124711 BA, US7044081 BA, US6895897 BA, US6817316 BA, US6792892 BB, US6536832 BA, US6463419 BA, US6439825 BA, US6401983 BA, US6209490 BA, US6021739 A, US6016846 A, US5950565 A, US5651330 A, US5524781 A, US5205241 A, US5005521 A, US4819955 A, US4699088 A, US4604838 A, US4592175 A, US4498418 A, US4416493 A, US4339147 A, US4252906 A, US4168494 A, US4158416 A, US4123991 A, US3885524 A, US3824958 A, US3782566 A, US375989 A, US3755974 A, US371928 A, US3674303 A, US3602730 A, US3530830 A, US2898884 A, US272451 A, US2621070 A, US260009 A, US2595337 A, US2593161 A, US2498647 A, US236332 A, US233129 A, US230940 A, US215855 A, US2014026965 AA, US2012302150 AA, US2012037082 AA, US2011265396 AA, US2011120380 AA, US2010242853 AA, US2010012038 AA, US2009164234 AA, US2008213073 AA, US2008017591 AA, US2007079765 AA, US2007044724 AA, US2005241593 AA, US2005177883 AA, US2005112541 AA, US2003101106 AA, US2002197688 AA, US2001052327 AA, US1872703 A, US106888 A, JPS59216784, JPS58167286, JP59216784 A2, JP59216784, JP58167286 A2, JP58167286, GB461028 A, GB2393631 B2, GB2393631 A1, GB2053808 A1, GB1352991 A, AU646925 B2, AU646925,

Forward Citations: WO14018566, WO13158884, US9649970, US9646750, US9358179, US9102258, US9021626, US8596221, US2016007563, US2014289956, US2014283726, US2014265242, US2013298839, US2012042833, US2011239952, EP3075239, EP2959357, EP2838760, CN105145383, CN104904605, CN104782517, CN104285828, CN103625946, AU2013249207,

Abstract:
Source: US2012031344A A method of producing shipping containers for transporting livestock on shipping vessels over extended periods including methods of modifying shipping containers to include water distribution, feed distribution, temperature control, air movement, and waste management features.

0) US3750366A – BUILDING

16) Family number: 24052355 (US3750366A) © PatBase

Title: BUILDING

Priority: CA19710102911 19710118 US19700004156 19700119 US19730355064 19730427 US19740476948 19740606 US19710163274 19710716

Family:

Publication number	Publication date	Application number	Application date
BR7100223 A0	19730920	BR19710000223	19710113
CA1147523 A1	19830607	CA19710102911	19710118
CH535336 A	19730331	CH19710000747	19710119
DE2102380 A1	19710729	DE19712102380	19710119
DE2102380 B2	19730913	DE19712102380	19710119
DE2102380 C3	19740404	DE19712102380	19710119
DE2166304 A1	19730809	DE19712166304	19710119
DE2166304 B2	19760226	DE19712166304	19710119
DE2166304 C3	19761014	DE19712166304	19710119
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NO136108 B	19770412	NO19710000125	19710114
NO136108 C	19770720	NO19710000125	19710114
SE386221 B	19760802	SE19700016972	19701215
SE386221 C	19761111	SE19700016972	19701215
SU619114 D	19780805	SU19711612524	19710114
US3750366 A	19730807	US19710163274	19710716
US3866672 A	19750218	US19730355064	19730427
USRE28367 E	19750318	US19740476948	19740606
ZA7100283 A	19711027	ZA19710000283	19710118

Probable Assignee: F D RICH HOUSING CORP

Assignee(s):(std)**:** ALEKSANDR D MS DONALD ; DOMENICO F ; F D RICH HOUSING CORP ; FRENK D RICH ; RICH JR F D ; RICH FRANK D ; RICH FRANK DOMENICO JR ; RICH F HOUSING CORP ; RICH F ; RICH F D ; RICH JR FRANK DOMENICO ; RICH FRANK JR ; RICH JUN

Assignee(s): RICH JUN FRANK DOMENICO DARIEN CONN V ST A ; FRENK D RICH US ; RICH FRANK D JR ; MCDONALD ALEXANDER D ; RICH F HOUSING CORP US ; FRANK DOMENICO RICH JR ; ALEKSANDR D MS DONALD US

Inventor(s):(std)**:** ALEKSANDR DMSDONALD US ; ALEXANDER DONALD MCDONALD ; CONN ; FRANK DOMENICO JR RICH ; FRENK DRICH US ; MCDONALD A D ; MCDONALD ALEXANDER D ; MCDONALD ALEXANDER DONALD GLENBROOK ; RICH F D ; RICH JR F D ; RICH JR FRANK D ; RICH JUN ; RICH JUN FRANK DOMENICO ; RICH FRANK D JR ; MCDONALD ALEXANDER DONALD ; RICH FRENK D ; RICH F ; MCDONALD A ; DONALD ALEKSANDR D MS ; RICH FRANK DOMENICO JR ; MC DONALD A

Inventor(s): FRENK D RICH US ; ALEKSANDR D MS DONALD US ; FRANK DOMENICO RICH JR ; WIRD SPAETER GENANNT WERDEN ; RICH F US ; RICH FRANK D ; MCDONALD A US ; DOMENICO JR RICH FRANK ; DONALD MCDONALD ALEXANDER

Agent(s):	WESTELL AND HANLEY
International class (IPC 8–9):	E04B1/20 E04B1/348 E04H1/04 F24F3/044 (Advanced/Invention); E04B1/20 E04B1/348 E04H1/04 F24F3/044 (Core/Invention)
International class (IPC 1–7):	E04B1/04 E04B1/18 E04B1/20 E04B1/348 E04B1/35 E04C2/48 E04C2/52 E04F17/04 E04H1/00 E04H1/04 E04H1/12 E04H3/00 E04H9/06 F24F3/00
CPC:	E04B1/348 E04B1/34807 E04B2001/34892 F24F3/044
European class:	E04B1/348 E04B1/348B F24F3/044 P04B1/348S
US class:	165/50 52/7.9 52/79.11 52/79.8
Classification Explorer	
Cited documents:	US961210 A, US3613321 A, US3514910 A, US3507080 A, US3416273 A, US3331170 A, US2641449 A, US2184113 A, US1293377 A, US1086031 A, JP48001250 A2, GB1083552 A, FR55715 E, FR55175 E, FR1518637 A, FR1518367 A, FR1509042 A, FR1316985 A, DD48027 Z, BE641899 A,
Forward Citations:	WO9106720, WO17078539, WO15115990, WO08135832, WO07053540, USD765266, US9631359, US9617748, US9556632, US9464436, US9347675, US8983675, US8910439, US8800725, US8733029, US8499526, US8484929, US8474194, US8429871, US8353131, US7941975, US6976337, US6826879, US6698147, US6578330, US6530553, US5421400, US4447996, US4300746, US4185423, US4107886, US4010822, US3982366, US3897662, US2015034283, US2014352232, US2014298745, US2013048430, US2012168263, US2011214361, US2011083379, US2010088975, US2010082178, US2008276553, US2008012342, US2007213960, US2006059792, US2005262778, US2002088184, RU2616306, EP1613815, DE4028914, CN103221620, CN103221620,

Abstract:
Source: US3750366A A building employing prefabricated room−enclosing modules which function also as box−shaped horizontal beams and ties for connecting vertical weight−supporting columns into a rigid framework. The columns are preferably concrete members which are poured in place into spaces formed between the modules. The inter−module spaces include vertical chases and horizontal plenums which are in communication with each other and with a heating/cooling plant output, to form an air jacket which surrounds each module over a plurality of its exterior surfaces, and operates as an effective radiant heat exchanger therewith. The heated or cooled air is ultimately discharged into the interior occupancy space of the modules, so as to provide a combination radiant and convective heating/cooling system. The interior occupancy space of the modules is sealed during on−site construction, so that no workmen may enter. The interior of the modules is finished prior to shipment to the construction site, including the installation of all interior service facilities and connecting lines leading from such facilities to a special chamber which is accessible from the exterior of the module. At the construction site workmen can enter this chamber to connect the modules to service risers which extend vertically through a duct formed by vertical alignment of the module chambers, and upper and lower hatchways thereof.

0) US4715503A – INTERLOCKING JOINT WINE RACK

17) Family number: 29473000 (US4715503A) © PatBase

Title: INTERLOCKING JOINT WINE RACK

Priority:

US19860848573	19860407	US19870137100	19871223	US19910541547	19910621
US19900541547	19900621	US19870137101	19871223	US19880231379	19880812
US19910715910	19910614	US19910715908	19910614	US19910696922	19910508
US19930128800	19930928	US19930007079	19930121	US19920828499	19920131
US19910715912	19910614	US19940196650	19940214	WO1991US02434	19910411
WO1993US00888	19930201	US19990311338	19990513	US19970881974	19970625
US19970806031	19970126	US19950325981	19950126	US19940259431	19940614

Family:

Publication number	Publication date	Application number	Application date
AU199177976 A1	19920107	AU19910077976	19910411
AU199336039 A1	19930901	AU19930036039	19930201
CA2154341 AA	19950720	CA19932154341	19930201
CA2154341 C	20001226	CA19932154341	19930201
EP0742862 A1	19961120	EP19930904804	19930201
EP0742862 A4	19970226	EP19930904804	19930201
JP8509275 T2	19961001	JP19930513480T	19930201
US4715503 A	19871229	US19860848573	19860407
US4809146 A	19890228	US19870137101	19871223
US4825620 A	19890502	US19870137100	19871223
US4991726 A	19910212	US19880231379	19880812
US5024036 A	19910618	US19900541547	19900621
US5197818 A	19930330	US19910715910	19910614
US5222344 A	19930629	US19910715908	19910614
US5247774 A	19930928	US19910715912	19910614
US5285612 A	19940215	US19910696922	19910508
US5285613 A	19940215	US19920828499	19920131
US5319901 A	19940614	US19930007079	19930121
US5597629 A	19970128	US19950325981	19950126
US5617692 A	19970408	US19940196650	19940214
US5644888 A	19970708	US19940259431	19940614
US5749198 A	19980512	US19930128800	19930928
US5795424 A	19980818	US19970806031	19970126
US6286281 BA	20010911	US19990311338	19990513
WO9119871 A1	19911226	WO1991US02434	19910411
WO9315292 A1	19930805	WO1993US00888	19930201

Probable Assignee: EBERT COMPOSITES CORP

Assignee(s):(std)**:** EBERT COMPOSITES CORP ; GOLDSWORTHY W BRANDT ; KORZENIOWSKY GEORGE ; JOHNSON DAVID W ; KORZENIOWSKI GEORGE ; GEORGE KORZENIOWSKI ; BRANDT GOLDSWORTHY W

Assignee(s): DAVID W JOHNSON ; EBERT COMPOSITES A CORP OF CA CORP ; GOLDSWORTHY W

Inventor(s):(std)**:** GOLDSWORTHY W BRANDT ; JOHNSON DAVID W ; KORZENIOWSKI GEORGE ; KORZENIOWSKY GEORGE

Inventor(s): W BRANDT GOLDSWORTHY ; GEORGE KORZENIOWSKI ; DAVID W JOHNSON ; GOLDSWORTHY W

Agent(s): PATENT ATTORNEY SERVICES; BULL HOUSSER AND TUPPER LLP

Designated states:

AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR LK LU MC MG ML MN MR MW NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US

International class (IPC 8–9): A47B47/04 A47B73/00 B29C70/52 B65D6/08 E01D1/00 E04B1/19 E04B1/24 E04B1/58 E04C3/12 E04C3/28 E04C3/42 E04C3/46 E04G1/04 E04H12/02 E04H12/10 E04H12/24 E04H17/14 E06C7/08 F16B12/12 F16B7/04 (Advanced/Invention); E04B1/19 E04B1/24 E04B1/58 E04H12/24 (Advanced/Non–invention); A47B47/00 A47B73/00 B29C70/04 B65D6/00 E01D1/00 E04B1/19 E04B1/24 E04B1/58 E04C3/02 E04C3/12 E04C3/38 E04G1/00 E04H12/00 E04H17/14 E06C7/00 F16B7/04 (Core/Invention); E04B1/19 E04B1/58 (Core/Non–invention)

International class (IPC 1–7): A47B47/00 A47B73/00 B29D22/00 B31F1/00 E04B1/24 E04B1/58 E04C3/02 E04C3/30 E04H12/02 E04H12/04 E04H12/10 E04H12/18 F16D1/00 F21L7/00

CPC: Y10S52/10 Y10T403/34 Y10T403/342 Y10T403/347 Y10T403/44 Y10T403/46 Y10T403/4694 Y10T403/4602 Y10T403/4671 Y10T403/7001 Y10T403/7096 Y10T156/1008 Y10T156/101 Y10T156/1051 Y10T428/1362 Y10T428/24033 Y10T428/24446 Y10T428/24645 Y10T428/24686 Y10T428/24785 A47B73/00 F16B12/125 A47B73/006 A47B47/04 Y10T403/447 E01D1/00 E01D2101/10 E01D2101/26 E01D2101/30 E01D2101/40 E04B1/19 E04B2001/1927 E04B2001/1945 E04B2001/1948 E04B2001/1963 E04B2001/1975 E04B2001/5893 E04C3/12 E04C3/42 E04G1/04 E04H17/1439 Y10T403/343 B29C70/525 E04B2001/1924 E04B2001/1933 E04B2001/1984 E04B2001/199 E04B2001/1993 E04C3/28 E04H12/02 E04H12/24 E04B2001/1957 E04C3/46 E06C7/08 F16B7/0446

European class: A47B47/04 A47B73/00 A47B73/00E B29C70/52C E01D1/00 E04B1/19 E04C3/12 E04C3/28 E04C3/42 E04C3/46 E04G1/04 E04H12/02 E04H17/14E2 E06C7/08 F16B12/12M F16B7/04D2 P01D101/10 P01D101/26 P01D101/30 P01D101/40 P04B1/19C P04B1/19C1 P04B1/19C2 P04B1/19C6 P04B1/19C7 P04B1/19D P04B1/19D2 P04B1/19E P04B1/19G2 P04B1/19H P04B1/19K P04B1/58P P04H12/24

US class: 156/166 156/200 156/201 156/227 156/242 156/245 174/45R 211/189 211/205 211/74 256/22 256/65 256/65.04 264/137 273/160 312/263 362/367 403/169 403/171 403/172 403/176 403/217 403/219 403/230 403/231 403/255 403/263 403/346 403/382 405/262 405/272 428/102 428/152 428/176 428/181 428/193 428/36.1 428/361 446/106 52/282.1 52/309.14 52/309.9 52/592.1 52/600 52/646 52/648 52/648.1 52/650.1 52/651.01 52/651.02 52/651.03 52/651.04 52/651.09 52/655.1 52/697 52/720 52/724 52/728 52/731.3 52/736.2 52/736.3 52/736.4 52/835 52/844 52/849 52/DIG.1 52/DIG.10 526/970 527/280

Classification Explorer

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Forward Citations: WO9914451, WO9855771, WO9832591, WO9734053, WO9516838, WO9119871, WO15169414, WO14019959, WO11057377, WO10116012, WO10071466, WO10028376, WO10028376, WO10012120, WO07018962, WO06061617, WO06019478, WO05118985, WO05067544, WO05067544, WO04057120, WO04057120, WO04009912, USD760560, USD721189, USD720866, USD720865, USD625844, USD625843, USD624210, USD624209, USD624208, USD624206, USD623768, USD623767, USD588440, USD581253, USD574697, USD569993, USD564262, USD544784, USD540479, USD537537, USD523565, USD486146, USD446052, US9668573, US9611666,

US9593506, US9499983, US9453345, US9441365, US9416555, US9362021, US9340373, US9340171, US9328474, US9315987, US9290926, US9290901, US9273479, US9273477, US9249532, US9150072, US9149023, US9121194, US9062662, US9038834, US9038347, US9032694, US9022831, US9010069, US8974150, US8966856, US8959871, US8959867, US8927086, US8910447, US8905670, US8893662, US8782898, US8771538, US8756953, US8756895, US8742665, US8734705, US8671850, US8662326, US8646220, US8635830, US8631618, US8627966, US8607533, US8602123, US8597016, US8555603, US8550012, US8519050, US8516774, US8474221, US8458970, US8453386, US8429860, US8424269, US8376157, US8376156, US8371028, US8359814, US8353131, US8322268, US8322105, US8322093, US8307769, US8302363, US8293353, US8257119, US8245452, US8201698, US8186524, US8182643, US8161712, US8156712, US8105127, US8101107, US8065841, US8025754, US8024908, US7966786, US7901762, US7900411, US7875675, US7866249, US7856772, US7836661, US7827763, US7781039, US7752754, US7735290, US7707794, US7690167, US7665270, US7644896, US7608313, US7604438, US7461482, US7311470, US7276132, US7226245, US7216463, US7159370, US7140158, US7128094, US7116282, US7116282, US7114300, US7063219, US6999042, US6901715, US6893191, US6881288, US6872273, US6845871, US6834469, US6786233, US6779287, US6755212, US6722510, US6719009, US6698451, US6655102, US6615999, US6544624, US6520462, US6455131, US6453635, US6412250, US6412207, US6397545, US6361244, US6341922, US6309732, US6295783, US6286281, US6237299, US6226950, US6209276, US6205736, US6192651, US6182841, US6167673, US6155017, US6132129, US6059630, US6035597, US6032432, US6023902, US5964072, US5956920, US5950374, US5880404, US5873193, US5871307, US5870877, US5865007, US5832689, US5749198, US5743413, US5706597, US5704185, US5702090, US5661946, US5644888, US5605017, US5593047, US5560730, US5553433, US5529423, US5528870, US5513477, US5323583, US5285612, US5215490, US5207038, US5197253, US5185982, US5169009, US5058357, US5035098, US5024036, US4991726, US4903453, US4825620, US4809146, US2016144558, US2015225956, US2015157125, US2015096954, US2015089901, US2015021941, US2014360121, US2014174017, US2014161539, US2014130440, US2014113522, US2013341295, US2013312360, US2013295404, US2013288068, US2013263542, US2012324827, US2012233954, US2012199541, US2012187813, US2012180427, US2012102847, US2012048819, US2011293959, US2011239550, US2011220599, US2011152225, US2011135423, US2011134653, US2011126488, US2011115378, US2011114601, US2011081824, US2011044768, US2011044766, US2010319983, US2010319838, US2010307183, US2010293783, US2010242377, US2010236182, US2010223882, US2010157562, US2010064630, US2009308019, US2009308006, US2009307999, US2009307998, US2009223164, US2009188437, US2009084796, US2009019816, US2008302037, US2008274319, US2008223986, US2008202063, US2008199261, US2008172873, US2008053596, US2007213960, US2007193943, US2007193143, US2007175390, US2007151193, US2007144109, US2007125032, US2007117921, US2007116941, US2007095008, US2007094992, US2007044424, US2007000184, US2006257604, US2006254182, US2006254167, US2006239782, US2006185270, US2006150572, US2006113517, US2006005508, US2005271852, US2005170120, US2005167030, US2005160697, US2005078049, US2005011560, US2004211151, US2004182299, US2004174317, US2004149668, US2004134161, US2004134138, US2004060257, US2004013476, US2004013474, US2004000110, US2003159396, US2003127637, US2003074928, US2003067160, US2002123288, US2002121722, NL1017953, KR101206058, KR100913253, JP5146733, JP2013510965, JP2008522896, ITBZ20120033, ITBO20090051, GB2477735, GB2382021, GB2382021, FR2857385, ES2335559, EP2594121, EP1607541, EP1573141, EP1253252, EP1249551, EP0907807, EP0743999, EP0742862, DE19735496, DE19642242, DE19642242, DE102012223075, DE102012223075, DE102005010192, DE102005010192, CN105386631, CN105133908, CN104532961, CN104532961, CN104379854, CN104314352, CN103921457, CN102777068, CN102747856, CN101798882, BE1012983,

Abstract:
Source: US4715503A A wine rack has no fasteners or adhesives at the three−dimensional joints, but rather the joints are all formed so that the three intersecting cross pieces interlock in such a way that a tight joint construction occurs strictly by virtue of the way the members are cut in the joint region, and the way in which the members are interlocked. The interlocking and connecting of cubic cells provides a rigid structure capable of accepting loads in any direction and allowing the rack to be mounted in any orientation, with single point wall mounting possible wherein the rack can withstand full loading with no distortion. The modular cell configuration is adapted to the construction of lattice beams and other arrangements besides wine racks.

0) US4625484A – STRUCTURAL SYSTEMS AND COMPONENTS

18) Family number: 3721073 (US4625484A) © PatBase

Title: Structural systems and components

Priority: CA19860511809 19860618 EP19860305235 19860707 EP19860305235 19860707 US19850751808 19850705

Family:

Publication number	Publication date	Application number	Application date
AT62722 E	19910515	AT19860305235T	19860707
CA1276422 A1	19901120	CA19860511809	19860618
DE3678759 D1	19910523	DE19863678759	19860707
EP0208529 A1	19870114	EP19860305235	19860707
EP0208529 B1	19910417	EP19860305235	19860707
US4625484 A	19861202	US19850751808	19850705

Probable Assignee: HIGH TECH HOMES INC

Assignee(s):(std)**:** HIGH TECH HOMES INC

Assignee(s): HIGH TECH HOMES INC MIAMI FLA US ; OBOLER LEONARD

Inventor(s):(std)**:** OBOLER LEONARD

Inventor(s): OBOLER LEONARD KEY BISCAYNE FLORIDA 33149 US

Agent(s): MACRAE AND CO

Designated states: AT BE CH DE FR GB IT LI LU NL SE

International class (IPC 8–9)**:** E04B1/00 E04B1/16 E04B5/02 (Advanced/Invention); E04B1/16 E04B5/02 (Core/Invention)

International class (IPC 1–7)**:** E04B1/00 E04B1/16

CPC: E04B1/161 E04B5/04

European class: E04B1/16A E04B5/04

US class: 52/251 52/309.12 52/437 52/600 52/91 52/91.2

Classification Explorer

Cited documents: US4505019 A, US4489530 A, US4486996 A, US4486993 A, US4455793 A, US4454702 A, US4393636 A, US4342180 A, US4340802 A, US4336676 A, US4297820 A, US4288962 A, US4253288 A, US4250670 A, US4249354 A, US4236361 A, US4226067 A, US4187651 A, US4140824 A, US4090340 A, US4079560 A, US4071984 A, US4047357 A, US4038798 A, US4015387 A, US4006570 A, US3879908 A, US3874139 A, US3803788 A, US3677874 A, US3458609 A, US3446692 A, US3398491 A, US3315424 A, US3310917 A, US2851873 A, US2744042 A, GB2093882 A1, FR2349692 A1, FR2153288 A1, DE2914920 A1, CH625297,

Forward Citations: WO9722770, WO13158152, WO12009752, WO03008730, US8713865, US8590242, US8572900, US8316613, US8245619, US8151687, US8039102, US7988094, US7967296, US7909331, US7905062, US7886651, US7798048, US7681484, US7581483, US7357394, US7353642, US7254925, US7175795, US7083515, US6920729, US6735914, US6622452, US6305142, US5921046, US5867964, US5862639, US5785904, US5737895, US5697196, US5584151, US5404685, US5371990, US4942707, US4909001, US4841702, US4811770, US2015204067, US2010225024, US2010139177, US2009070131, US2008302026, US2008276568, US2008235565, US2008169381, US2008169380, US2008008538, US2007210522, US2007210237, US2005055918, US2004231264, US2004111989, US2004006516, US2003168775, US2002174608, EP1612344, EP0363544, EA200, EA000200, CN103821366, CN103821366, CN102505838, CN102505838,

Abstract:
Source: US4625484A A structural system and components for housing or other structures and their methods of production. Panel members serve as structural elements or as filler members or both, and in some applications can be removed. The panel members are provided with mesh on one or both sides of a heat insulation core member with the mesh being welded or otherwise affixed to I–beams or reinforced concrete reinforcing steel to

form a continuous structural solution. Roof panels are provided which are similar to that of the vertical walls, and the mesh on the upper surface is firmly affixed to both the columns and the reinforced concrete perimeter beam, affording a finished structure of great structural integrity. In all cases, the panels allow pouring of concrete around previously installed, reinforcing steel, allowing a final reinforced concrete structure similar to that constructed conventionally, but eliminating the extensive forming labor connected therewith.

0) US3562978A – BUILDING CONSTRUCTION

19) Family number: 943083 (US3562978A) © PatBase

Title: BUILDING CONSTRUCTION

Priority: GB19650006705 19650216 US19670677195 19671023 US19680808033 19681216

Family:

Publication number	Publication date	Application number	Application date
FR1587040 A	19700306		19681023
GB1150871 A	19690507	GB19650006705	19650216
GB1239800 A	19710721	GB19680042120	19680904
JP49028366 B4	19740725	JP19680076817	19681023
NL6815106 A	19690425	NL19680015106	19681023
US3562978 A	19710216		19681010
US3562979 A	19710216	US19680808033	19681216

Probable Assignee: COMPONOFORM INC

Assignee(s):(std)**:** COMPONOFORM INC

Inventor(s):(std)**:** ALI OGLU EWGENI

Inventor(s): EWGENI ALI OGLU

International class (IPC 8–9)**:** E04B1/20 E04B1/21 E04B1/34 E04C3/34 E04G15/06 (Advanced/Invention); E04B1/20 E04B1/34 E04C3/30 E04G15/00 (Core/Invention)

International class (IPC 1–7)**:** C09K11/08 C09K11/46 C09K11/465 C09K11/475 E04B1/04 E04B1/18 E04B1/20 E04B1/34 E04B1/56 E04B1/58 E04B1/60 E04B5/04 E04C1/10 E04C2/38 E04C2/50 E04C3/34 E04C3/44 E04G11/18 E04G15/06 H01J29/20

CPC: Y10S249/02 E04B1/34 E04B1/215 E04G15/06 E04G9/021 E04G9/083

European class: E04B1/21B E04B1/34 E04G15/06

US class: 249/DIG.2 52/125 52/125.4 52/125.5 52/126.3 52/236.8 52/236.9 52/242 52/252 52/253 52/259 52/263 52/281 52/577 52/583.1 52/723.1 52/724.5 52/726.1 52/779 52/834 52/848 521/220 521/250

Classification Explorer

Forward Citations: WO8808061, WO8804711, USRE33220, US9540775, US8572788, US8295035, US7874110, US7661231, US7243898, US7131239, US6192636, US5809712, US5657597, US5177924, US4685267, US4685264, US4646495, US4605336, US4422997, US4196557, US4104844, US4099360, US4073102, US4059931, US4050213, US4024688, US4024687, US3948008, US3927499, US3916590, US3867805, US3855744, US3846952, US3818660, US3783565, US3735544, US3722159, US3683578, US3659388, US2011271636, US2011102974, US2009301011, US2009151298, US2005173613, US2004068944, US2003188496, US2003154674, FR2446899, ES2148069, EP0014131, DE2636168, DE2348943, CN104057189, AU611383,

Abstract:
Source: US3562978A ABSTRACT OF THE DISCLOSURE A building construction comprising modular cross arm columns, floor slabs, building slabs and related structures is provided. The wall panels which may be used as interior wall panels have at least one side edge carrying an elongated fastening means for interlocking with an edge of an adjacent wall panel and for preventing movement of such interlocked panels directly away from each other while permitting sliding of said panels along a line fixed with respect to each other and substantially parallel to the one side edge. The fastening means comprises hook means for positively preventing movement of two interlocked panels directly away from each other without first destroying the hook means. This application is a continuation in part of U.S. patent application Ser. No. 527,450 filed Feb. 15, 1966 and now abandoned.

0) US2007266651A – MODULAR PANEL ASSEMBLIES FOR BUILDING FOUNDATIO...

20) Family number: 40838933 (US2007266651A) © PatBase

Title: MODULAR PANEL ASSEMBLIES FOR BUILDING FOUNDATIONS

Priority: US20060504621 20060816 US20060801568P 20060518 US20070804621 20070518 US20090422680 20090413 US20070904012P 20070228

Family:

Publication number	Publication date	Application number	Application date
CA2671646 AA	20101013	CA20092671646	20090710
US2007266651 AA	20071122	US20070804621	20070518
US2009193734 AA	20090806	US20090422680	20090413
US2012240499 A9	20120927	US20090422680	20090413
US8186115 BB	20120529	US20070804621	20070518
US8307608 BB	20121113	US20090422680	20090413

Probable Assignee: BRADLEY WALTER B

Assignee(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Inventor(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Agent(s): JOHN J MARSHALL C O PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; JOHN J MARSHALL PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; DRINKER BIDDLE AND REATH LLP

International class (IPC 8–9): E02D27/00 E04B1/00 E04B2/38 E04B2/56 E04C2/20 E04C2/34 E04C3/04 (Advanced/Invention); E02D27/00 E04B2/56 E04C2/10 E04C3/04 (Core/Invention)

CPC: E02D27/00 E04B1/0015 B67D7/0272 E04B1/08

European class: B67D7/02E6B E02D27/00 E04B1/00B1 E04B1/08

US class: 52/106 52/126.6 52/169.6 52/169.600P 52/270 52/270P 52/284 52/309.1 52/309.100S 52/481.1 52/690 52/690S 52/782.1 52/792.1

Classification Explorer

Cited documents: US7596923 BA, US7318300 BA, US7246779 BB, US6959521 BA, US6550213 BA, US6484460 BB, US6454050 BB, US6415558 BA, US6415557 BA, US6398778 BA, US6389778 BA, US6385937 BA, US6367764 BA, US6354050 BA, US6263636 BA, US6205725 BA, US6199336 BA, US6148583 A, US6125608 A, US6120723 A, US6076320 A, US5830378 A, US5787651 A, US5592796 A, US5588271 A, US5564235 A, US5555698 A, US5487241 A, US5479749 A, US5287675 A, US4876833 A, US4706422 A, US4599835 A, US4332116 A, US4274242 A, US4235054 A, US4100705 A, US4075810 A, US4041667 A, US3611653 A, US3596424 A, US3236012 A, US3208410 A, US2006179782 AA, US2004134162 AA, US2003066249 AA, US2001047637 AA,

Forward Citations: US9657490, US9618211, US9458618, US9394714, US9090497, US8769908, US8683759, US8327597, US8327592, US2015211745, US2015093535, US2013319937, US2012317902, US2011282633, US2011179731, US2011173899, US2011072734, US2007028542, AT517545,

Abstract:
Source: US2007266651A A perimeter foundation wall is constructed from a plurality of modular wall panels. The wall panels include a generally planar exterior wall surface, a side flange on both vertically extending sides of the panel, a top cap, and a base pan. The wall may also include vertical reinforcing studs and brackets on an inner surface of the wall panels. The wall may also have leveling assemblies including threaded rods passing through the base pan.

0) US2004182299A – MODULAR MARINE STRUCTURES

21) Family number: 27909483 (US2004182299A) © PatBase

Title: MODULAR MARINE STRUCTURES

Priority: IL20030159600 20031225 US20010301133P 20010628 WO2002IL00523 20020627 US20030482080 20031229

Family:

Publication number	Publication date	Application number	Application date
AT357564 E	20070415	AT20020743596T	20020627
AU2002345327 AA	20030303	AU20020345327	20020627
DE60219014 D1	20070503	DE20026019014	20020627
DE60219014 T2	20080103	DE20026019014T	20020627
DK1404927 T3	20070730	DK20020743596T	20020627
EP1404927 A1	20040407	EP20020743596	20020627
EP1404927 B1	20070321	EP20020743596	20020627
ES2286261 T3	20071201	ES20020743596T	20020627
IL159600 A0	20040601	IL20020159600	20020627
IL159600 A1	20081229	IL20020159600	20020627
JP2004530822 T2	20041007	JP20030508785T	20020627
JP4060790 B2	20080312	JP20030508785T	20020627
PT1404927 T	20070629	PT20020743596T	20020627
US2004182299 AA	20040923	US20030482080	20031229
US7226245 BB	20070605	US20020482080	20020627
WO03002827 A1	20030109	WO2002IL00523	20020627

Probable Assignee: OCEAN BRICK SYSTEM OBS LTD

Assignee(s):(std)**:** ALKON YORAM ; ELIYAHU KENT ; KENT ELIYAHU ; TAMNOR MAN AND CONSULTING LTD ; OCEAN BRICK SYSTEM OBS LTD ; YORAM ALKON

Assignee(s): TAMNOR MANAGEMENT AND CONSULTING LTD ; OCEAN BRICK SYSTEM (OBS) LTD ; OCEAN BRICK SYSTEM LTD ; OCEAN BRICK SYSTEM O B S LTD

Inventor(s):(std)**:** ALKON YORAM ; KENT ELIYAHU

Inventor(s): YORAM ALKON ; ELIYAHU KENT

Agent(s): REINHOLD COHN AND PARTNERS; DR EYAL BRESSLER; NATH LAW GROUP; STANLEY N; JERALD L

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

International class (IPC 8–9): B28B7/00 B63B35/44 E02B17/02 E02B3/04 E02B3/06 E02B3/12 E02D27/01 E04B1/19 E04B1/49 (Advanced/Invention); B63B5/18 (Advanced/Non–invention); B63B35/44 E04B1/48 (Core/Invention)

International class (IPC 1–7): B28B7/00 B63B35/44 E02B3/12 E02D27/01 E04B1/19

CPC: Y10S52/10 E02B3/129 B28B7/0029 B28B7/0044 B63B5/18 B63B2231/64 E02B3/04 E02B3/06 E02B17/025 E04B1/19 E04B2001/1927 E04B2001/1972 E04B2001/1978 E04B2001/1984

European class: B28B7/00B B28B7/00B3D E02B17/02C E02B3/04 E02B3/06 E02B3/12E E04B1/19 L63B231/64 L63B5/18 P04B1/19 P04B1/19C1 P04B1/19D4 P04B1/19F P04B1/19G2

US class: 114/266 405/195.1 405/21 405/26 405/35 52/648.1 52/DIG.1 52/DIG.10

Classification Explorer

Cited documents: US6205739 BA, US6199502 BA, US5505035 A, US5315806 A, US5107785 A, US5105589 A, US5097645 A, US5024036 A, US4745725 A, US4554883 A, US4074497 A, US3822499 A, US3799093 A, US3665882 A, US3663346 A, US2178667 A, US2028794 A, US1875668 A, JP2120418 A2, JP1127710 A2, GB1514602 A,

Forward Citations: WO14013484, WO12001193, WO10131246, WO10082198, WO10082198, WO07039692, US9032896, US8943771, US8132986, US7574830, US2015152614, US2014241811, US2013022405, US2012051845, US2011150573, US2010067987, US2008078138, JP2015524521, JP2012515280, ITRM20100332, FR2891556, FR2871484, ES2356546, EP2716830, CN104641043, CN102459765, CN102459765,

Abstract:
Source: US2004182299A A load−carrying modular structure assembled from 3−D structural modules constituting parallelepipeds with rectangular faces, the 3−D modules adjoining each other along said faces. The modules comprise reinforcing diagonal beams (RDBs) disposed along diagonals that connect vertices of the parallelepipeds. The RDBs form a 3−D multi−tetrahedron lattice whereby said modular structure behaves under load as a multi−tetrahedron structure. A basic 3−D module for assembling the modular structure has six RDBs along facial diagonals forming a tetrahedron. The 3−D module may have RDBs also along the other six diagonals and along diagonals connecting centers of the box's faces. The 3−D modules may have cut−outs and passages for water currents. They may have internal hollow volumes and controlled buoyancy, and may be assembled from shell elements.

0) ZA200301627A – CONSTRUCTION SYSTEM OF PREFABRICATED PANELS USI...

22) Family number: 28021627 (ZA200301627A) © PatBase

Title: CONSTRUCTION SYSTEM OF PREFABRICATED PANELS USING A SPATIAL METALLIC STRUCTURE.

Priority: EC20010004123 20010717 EC2001SP04123 20010717 WO2002EC00001 20020307

Family:

Publication number	Publication date	Application number	Application date
BRPI0205692 A	20030715	BR2002PI05692	20020307
CN1488023 A	20040407	CN20028002395	20020307
ECSP014123 A	20030310	EC2001SP04123	20010717
KR20030029831 A	20030416	KR20037002475	20030220
PA8550601 A1	20030214	PA20020085506	20020715
PE09912002 A1	20021204	PE20020000630	20020716
SV2003001178 A	20030710	SV20020001178	20020717
WO03008730 A1	20030130	WO2002EC00001	20020307
YU15803 A	20050610	YU20030000158	20020307
ZA200301627 A	20040420	ZA20030001627	20020307

Probable Assignee: BCG INTERNAT LTD

Assignee(s):(std)**:** BCG INT CO LTD ; BCG INT LTD ; BCG INTERNAT CO LTD ; BCG INTERNAT LTD ; MODUL HOGAR INMOBILIARIA S A ; CARVAJAL ROUSSEAU JORGE EDMUND

Assignee(s): CARVAJAL ROUSSEAU JORGE EDMUNDO ; BCG INTERNATIONAL LTD ; BCG INTERNATIONAL CO ; BCG INTERNATIONAL CO LTD ; BCG

Inventor(s):(std)**:** CARVAJAL ROUSSEAU ; CARVAJAL ROUSSEAU EDMUNDO ; CARVAJAL ROUSSEAU JORGE E ; CARVAJAL ROUSSEAU JORGE EDMUND ; CARVAJAL ROUSSEAU JORGE EDMUNDO ; EDMUNDO JORGE ; JORGE EDMUNDO ; ROUSSEAU CARVAJAL ; ROUSSEAU JORGE EDMUNDO CARVAJA

Inventor(s): JORGE EDMUNDO CARVAJAL ROUSSEAU

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/28 E04C2/38 E04C5/06 E04H6/00 (Advanced/Invention); E04B2/84 (Advanced/Non–invention); E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/38 E04H6/00 (Core/Invention); E04B2/84 (Core/Non–invention)

International class (IPC 1–7): E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/28 E04C2/38 E04H6/00

CPC: E04B1/161 E04B2/845 E04B2/847 E04B5/10 E04C2/384

European class: E04B1/16A E04B5/10 E04C2/38C P04B2/84P2 P04B2/84P3

Classification Explorer

Cited documents: US4741139 A, US4637187 A, US4625484 A, DE1940198 A1,

Forward Citations: ES2264596, CN103572866, CN102839770, CN102839770, CN102535680,

Abstract:
Source: YU15803A The invention relates to a system for constructing with pre–fabricated panels having a metallic spatial structure. The Invention also relates to the design thereof and a building construction system that makes use of pre–fabricated modular panels with structural metal tubes which are made from, in particular, expanded and ribbed perforated galvanised sheet steel and steel. Said panels, together with the connection and strengthening elements, are assembled on site and are filled or lined with concrete or cement mortar according to the use thereof. In this way, multi–purpose dwellings and buildings can be constructed precisely and quickly without the need for heavy or complicated tools. The end construction, which complies with international building

codes, is solid and resistant to seismic hazards, hurricanes, tornadoes and fire. Said novel design can be used to produce kits (sets of pieces to be mounted) for dwellings and buildings that are easy for end users to assemble.

0) US4014177A – MARINE PIER HAVING DEEPLY SUBMERGED STORAGE CON...

23) Family number: 3626842 (US4014177A) © PatBase

Title: Marine pier having deeply submerged storage container

Priority: GB19750000881 19750109 GB19760038979 19760921 US19740503079 19740906 US19750617091 19750926

Family:

Publication number	Publication date	Application number	Application date
FR2283995 A1	19760402	FR19750024355	19750805
FR2283995 B1	19800814	FR19750024355	19750805
FR2325771 A2	19770422	FR19760028828	19760924
FR2325771 B2	19821112	FR19760028828	19760924
GB1498047 A	19780118	GB19750000881	19750109
GB1538758 A	19790124	GB19760038979	19760921
GB1538759 A	19790124	GB19780025177	19760921
JP51038202 A2	19760330	JP19750001983	19741227
JP55029205 B4	19800801	JP19750001983	19741227
NO142535 B	19800527	NO19740004069	19741112
NO142535 C	19800903	NO19740004069	19741112
NO744069 A	19760309	NO19740004069	19741112
US4014177 A	19770329	US19750617091	19750926

Probable Assignee: CANADIAN PATENTS DEV

Assignee(s):(std)**:** CANADIAN PATENTS DEV ; CANADIAN PATENTS AND DEV

Assignee(s): CANADIAN PATENTS AND DEV LTD ; CANADIAN PATENTS AND DEVELOPMENT LIMITED ; CANADIAN PATENTS AND DEVELOPMENT LTD ; CANADIAN PATENTS AND DEVELOPMENT ; NATIONAL RESEARCH COUNCIL OF CANADA ; CANADIAN PATENTS DEVELOPMENT LTD ; KANADEIAN PATENTSU ANDO DEV LTD

Inventor(s):(std)**:** JARLAN G E ; JARLAN GERARD EUGENE ; JERARUDO II JIAARAN

International class (IPC 8–9)**:** B65D88/78 E02B17/00 E02B17/02 E04H7/00 E21B43/01 E21B43/017 (Advanced/Invention); B65D88/00 E02B17/00 E04H7/00 E21B43/00 (Core/Invention)

International class (IPC 1–7)**:** B63B35/00 B65D87/00 B65D87/08 B65D88/78 B65G5/00 E02B17/00 E02B17/02 E02B3/06 E02D17/00 E02D21/00 E04H1/00 E04H7/00 E04H7/04 E21B15/02 E21B43/01

CPC: E02B2017/0086 E02B2017/0039 E02B17/025 B65D88/78 E21B43/017

European class: B65D88/78 E02B17/02C E21B43/017 P02B17/00F

US class: 114/257 114/65A 405/205 405/210 61/87

Classification Explorer

Cited documents: US3921408 A, US3886753 A, US3858402 A, US3383869 A, FR2283995 A1, FR2251208 A5, FR2179433 A5,

Forward Citations: WO08054909, US5050290, US4836709, US4371292, US4302130, US4114392, US2015010364, US2010312722, US2010250352, US2010116216, US2009321663, US2009125316, US2009112777, US2009100772, US2008319766, US2008275308, US2008255868, US2008195426, US2007276681, US2007261899, US2007256564, US2007239480, US2007233506, US2007232220, US2007228090, US2007225995, US2007225994, US2007225993, US2007223658, US2007219914, US2007219814, US2007219813, US2007219812, US2007219810, US2007219431, US2007219430, US2007219429, US2007219428, US2007219427, US2007219426, US2007219425, US2007219424, US2007219423, US2007219422, US2007219421, US2007219420, US2007217577, US2007215434, US2007214729, US2007203727, JP6221029, JP57158413, GB2294490, GB2294490, FR2726302, FR2325771, FR2325771, CN103935716, CN103935716, AU689950,

Abstract:
Source: US4014177A A vertically−elongate monolithic pier body comprises:

0) US2004020933A – STORAGE TANK ASSEMBLY

24) Family number: 28675454 (US2004020933A) © PatBase

Title: STORAGE TANK ASSEMBLY

Priority: EP20010915470 20010316 GB20000006192 20000316 WO2001GB01159 20010316

Family:

Publication number	Publication date	Application number	Application date
AT513784 E	20110715	AT20010915470T	20010316
AU2001242562 AA	20010924	AU20010242562	20010316
AU2001242562 BB	20040610	AU20010242562	20010316
BRPI0109375 A	20030603	BR2001PI09375	20010316
BRPI0109375 B1	20101130	BR2001PI09375	20010316
CA2403351 AA	20020916	CA20012403351	20010316
CA2403351 C	20100504	CA20012403351	20010316
CN1223506 C	20051019	CN20018008475	20010316
CN1426374 A	20030625	CN20018008475	20010316
DE60144833 D1	20110804	DE20016044833	20010316
EP1263674 A1	20021211	EP20010915470	20010316
EP1263674 B1	20110622	EP20010915470	20010316
ES2365539 T3	20111006	ES20010915470T	20010316
GB200006192 A0	20000503	GB20000006192	20000316
GB200106550 A0	20010502	GB20010006550	20010316
GB2360321 A1	20010919	GB20010006550	20010316
GB2360321 B2	20020724	GB20010006550	20010316
MXPA02008981 A1	20041015	MX2002PA08981	20010316
NO20024384 A	20021113	NO20020004384	20020913
NO20024384 A0	20020913	NO20020004384	20020913
NO323968 B1	20070723	NO20020004384	20020913
NZ521443 A	20031128	NZ20010521443	20010316
PL193793 B1	20070330	PL20010357345	20010316
PL357345 A1	20040726	PL20010357345	20010316
PT1263674 T	20110720	PT20010915470T	20010316
RU2002127725 A	20040627	RU20020127725	20010316
RU2263066 C2	20051027	RU20020127725	20010316
US2004020933 AA	20040205	US20020221902	20021219
US7000800 BB	20060221	US20010221902	20010316
WO0168510 A1	20010920	WO2001GB01159	20010316
ZA200207356 A	20031003	ZA20020007356	20020913

Probable Assignee: COOKSON AND ZINN PTL LTD

Assignee(s):(std)**:** BOUDRY JOHN ALEXANDRE ; COOKSON AND ZINN ; COOKSON AND ZINN PTL LTD ; COOKSON AND ZINN PTY LTD ; COOKSON AND ZINN LTD

Assignee(s): COOKSON AND ZINN PTL LTD HADLEIGH ; BOUDRY JOHN A ; COOKSON AND ZINN PTL LIMITED ; COOKSON AND ZINN PTY LIMITED ; COOKSON AND ZINN (PTL) LTD ; COOKSON AND ZINN LIMITED

Inventor(s):(std)**:** BOUDRY JOHN ALEXANDRE ; JOHN ALEXANDRE BOUDRY ; BOUDRY JOHN A ; BAUDRI DZHON ALEKSANDR

Inventor(s): BOUDRY JOHN ALEXANDRE BRETTENHAM

Agent(s): WRAYS; MBM INTELLECTUAL PROPERTY LAW LLP; PATENTANWAELTE WALLACH KOCH DR HAIBACH FELDKAMP; MAUGHAN SOPHIE LOUISE; SHERIDAN ROSS PC

Designated states:	AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
International class (IPC 8–9):	B65D88/00 B65D88/76 B65D90/00 B65D90/12 B65D90/50 B67D5/60 B67D7/78 (Advanced/Invention); B65D88/00 B65D90/00 B65D90/12 B67D7/78 (Core/Invention)
International class (IPC 1–7):	B60S5/02 B65D088/76 B65D090/12 B65D88/00 B65D88/76 B65D90/00 B65D90/12 B67D5/60 E04H1/12
CPC:	B65D88/76 B65D90/501 B67D7/78
European class:	B65D88/76 B65D90/50B B67D7/78
US class:	220/567.1 220/567.2
Classification Explorer	
Cited documents:	US6161272 A, US6109290 A, US6105602 A, US6079580 A, US5921712 A, US5865346 A, US5526964 A, US5308423 A, US4911326 A, US4901748 A, SE383707 B, GB2325456 A1, EP0686105 B1,
Forward Citations:	US9061380, US8881925, US7946439, US2013270278, US2006118563, ES2447316, AU2013205100,

Abstract:
Source: US2004020933A According to the present invention there is provided a storage tank assembly comprising: (i) a storage tank; (ii) support means comprising at least one load bearing reinforcement means extending around and attached to at least a portion of the outer circumference of the storage tank, the support means further incorporating at least one mounting leg to enable the support means to be connected to a canopy.

0) WO9109513A2 – THE EFFICIENT STRUCTURE STRUCTURE EFFICACE

25) Family number: 3416741 (WO9109513A2) © PatBase

Title: THE EFFICIENT STRUCTURE

Priority: US19890451351 19891215 WO1990US07476 19901217

Family:

Publication number	Publication date	Application number	Application date
AU199171713 A1	19910724	AU19910071713	19901217
AU7171391 A1	19910724	AU19910071713D	19901217
CA2049335 AA	19910823	CA19902049335	19901217
WO9109513 A2	19910711	WO1990US07476	19901217

Probable Assignee: STEPHENS ANNA Q

Assignee(s):(std)**:** ANNA Q STEPHENS ; STEPHENS ANNA Q

Inventor(s):(std)**:** STEPHENS ANNA Q

Inventor(s): ANNA Q STEPHENS

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT AU BE BF BJ BR CA CF CG CH CM DE DK ES FR GA GB GR IT JP KP KR LU ML MR NL NO SE SN SU TD TG US

International class (IPC 8–9): E02D31/08 E04B2/00 E04B2/70 E04C3/00 E06B1/08 (Advanced/Invention); E02D31/00 E04B2/70 E06B1/04 (Core/Invention)

International class (IPC 1–7): E04B1/10 E04B1/26 E04B1/62 E04B1/74 E04B1/98 E04B2/00 E04C3/00 E04H9/02 E04H9/16

CPC: E02D31/08 E04B2/702 E06B1/08

European class: E02D31/08 E04B2/70B1 E06B1/08

Classification Explorer

Forward Citations: WO9627056, WO0171114, EP2287414,

Abstract:
Source: CA2049335A 2049335 9109513 PCTABS00005

0) US2017130898A – GROUND LIQUEFIED NATURAL GAS STORAGE TANK AND M...

26) Family number: 59897878 (US2017130898A) © PatBase

Title: GROUND LIQUEFIED NATURAL GAS STORAGE TANK AND METHOD FOR MANUFACTURING THE SAME

Priority: KR20140033606 20140321 WO2015KR02775 20150320

Family:

Publication number	Publication date	Application number	Application date
CA2943344 AA	20160920	CA20152943344	20150320
CN106233058 A	20161214	CN201580020691	20150320
EP3121506 A1	20170125	EP20150764915	20150320
KR101536864 B1	20150723	KR20140033606	20140321
US2017130898 AA	20170511	US20150127661	20150320
WO15142126 A1	20150924	WO2015KR02775	20150320

Probable Assignee: HYUNDAI HEAVY IND CO LTD

Assignee(s):(std)**:** HYUNDAI HEAVY IND CO LTD ; HYUN DAI HEAVY IND CO LTD

Assignee(s): HYUNDAI HEAVY IND CO ; CHUN IN SOO ; HYUNDAI HEAVY INDUSTRIES CO LTD ; JEONG SE HWAN ; KIM DAE SOON ; SHIN SANG BEOM ; LEE DONG JU ; SHIN DONG KYU

Inventor(s):(std)**:** CHUN IN SOO ; JEONG SE HWAN ; KIM DAE SOON ; LEE DONG JU ; SHIN DONG KYU ; SHIN SANG BEOM

Agent(s): SMART AND BIGGAR; BETTEN AND RESCH; KANG SIN SEOB ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04H7/02 E04H7/16 F17C1/02 F17C1/12 F17C13/00 F17C3/02 (Advanced/Invention)

CPC: F17C3/00 F17C2201/035 F17C2201/052 F17C2203/0333 F17C2205/0157 F17C2205/018 F17C2223/0161 F17C2260/012 F17C2270/0136 F17C1/02 F17C1/12 F17C3/02 F17C13/001 E04H7/16 F17C2203/0329 F17C2209/238 F17C2227/0135 E04H7/02 F17C2201/0157 F17C2203/012 F17C2203/0341 F17C2203/035 F17C2203/0629 F17C2203/0636 F17C2203/0678 F17C2209/232 F17C2221/033 F17C2223/033 F17C2260/042

Classification Explorer

Cited documents: KR20120013257 A, JPS6044694 A2, JPS55145899 A2, JP60044694 A2, JP60044694, JP55145899 A2, JP55145899, JP2001180793 A2, JP2001180793, JP2000159290 A2, JP2000159290,

Abstract:
Source: US2017130898A The present invention includes: an independent tank constituting an inner tank to store a storage material therein; at least one sandwich plate modularized and manufactured include a metal plate provided in a pair opposite to each other, the metal plates having a reinforcing material formed therebetween, and a filler filled between the metal plates, the at least one sandwich plate surrounding the outer surface of the independent tank to constitute an outer tank; and an external reinforcing member formed on the outer surface of the sandwich plate.

0) US2008196341A – MODULAR COLUMN SYSTEM USING INTERNALLY CONFINED...

27) Family number: 42111207 (US2008196341A) © PatBase

Title: MODULAR COLUMN SYSTEM USING INTERNALLY CONFINED HOLLOW COLUMN UNIT AND METHOD OF CONSTRUCTING THE SAME

Priority: US20070675583 20070215

Family:

Publication number	Publication date	Application number	Application date
US2008196341 AA	20080821	US20070675583	20070215

Probable Assignee: KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION

Assignee(s):(std)**:** UNIV KOREA IND AND ACAD COOP

Assignee(s): KOREA UNIV IND ; KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION ; KOREA UNIV IND AND ACADEMY COOPERATIONFOUNDATION ; KOREA UNIVERSITY INDUSTRY AND ACADEMY COOPERATIONFOUNDATION

Inventor(s):(std)**:** HAN SANG YUN ; HAN TAEK HEE ; KANG YOUNG JONG

Agent(s): INTELLECTUAL PROPERTY LAW GROUP LLP

International class (IPC 8–9)**:** E02D27/00 E04B1/00 (Advanced/Invention); E02D27/00 E04B1/00 (Core/Invention)

CPC: E01D19/02 E01D2101/24 E01D2101/268 E01D2101/40 E04C3/34

European class: E01D19/02 E04C3/34 P01D101/24 P01D101/26H P01D101/40

US class: 52/292 52/745.18

Classification Explorer

Cited documents: US7243409 BB, US6123485 A, US5870789 A, US4836717 A, US4497597 A, US419998 A, US2005229532 AA,

Forward Citations: US9677273, US8484915, CN103541547, CN103541547, CN103243640, CN103243640, CN102966185, CN102966185, CN102041778, CN101936852,

Abstract:
Source: US2008196341A A modular column system and a method of constructing the same are constructed by stacking at least one precast unit between a foundation section and a coping section. The precast unit makes use of an internally confined hollow column unit fabricated in advance, and joint sections between the precast units are firmly formed. Thereby, the modular column system can realize a short construction period and economy because reinforcement bars and forms are not used, as well as high resistance to bending moment and reduction in cross section and self–weight of the precast unit, and thus the modular column system can provide easier and more economical assembly, and prevent brittle fracture of the joint section between the precast units.

0) US3475873A – MODULAR,BONDED BUILDING WALL

28) Family number: 394532 (US3475873A) © PatBase

Title: MODULAR,BONDED BUILDING WALL

Priority: GB19660041093 19660914 GB19660041094 19660914

Family:

Publication number	Publication date	Application number	Application date
DE1658991 A1	19701210	DE19671658991	19670912
GB1202871 A	19700819	GB19660041094	19660914
US3475873 A	19691104	US19670667251	19670912

Probable Assignee: STEADMAN WILLIAM DAVID

Assignee(s):(std)**:** STEADMAN WILLIAM D ; STEADMAN WILLIAM DAVID

Assignee(s): WILLIAM D STEADMAN ; WILLIAM DAVID STEADMAN

Inventor(s):(std)**:** STEADMAN WILLIAM D ; STEADMAN WILLIAM DAVID

Inventor(s): WILLIAM D STEADMAN ; WILLIAM DAVID STEADMAN

International class (IPC 8–9): E04B1/20 E04B2/38 E04B2/42 E04B2/52 (Advanced/Invention); E04B2/02 (Advanced/Non–invention); E04B1/20 E04B2/28 E04B2/42 (Core/Invention); E04B2/02 (Core/Non–invention)

International class (IPC 1–7): E02D27/32 E04B1/00 E04B1/18 E04B1/56 E04B2/52 E04B5/19 E04C1/04 E04C2/46 E04C5/01

CPC: E04B1/20 E04B2/38 E04B2/42 E04B2/52 E04B2002/0245

European class: E04B1/20 E04B2/38 E04B2/42 E04B2/52 P04B2/02M3A

US class: 52/293.1 52/417 52/429 52/444 52/463 52/562 522/930

Classification Explorer

Cited documents: US508968 A, US3280525 A, US320698 A, US2940294 A, US2882712 A, US2700294 A, US2049907 A, US1999741 A, US1953287 A, US1377718 A, US1079152 A, IT567813 A, GB190918527 A, DK28772 A, DE402971 A, CH12285 A,

Forward Citations: WO13005183, WO13005183, US8484907, US7347029, US7032357, US6609340, US6526713, US6481178, US6438918, US6363683, US6336301, US6318040, US6314697, US6170220, US5485703, US5007218, US4967528, US4924641, US4860515, US4741140, US4696140, US4214408, US4133156, US3803788, US2017081847, US2010107514, US2005108963, EP2314779, BE1018783,

Abstract:
Source: US3475873A ABSTRACT OF THE DISCLOSURE A building structure comprises a multiplicity of modules made of insulating material, each module being shaped around terminal faces to provide, between ad–15 jacent modules, channels containing a mortar set to form a structural skelton such as one comprising a lattice of intersecting orthoganal reinforced concrete filled passages. The terminal faces of adjacent modules are located in predetermined relative positions by elongated frame 20 members which engage these adjacent faces. The frame members may be tied together by tie members, such as reinforcing rods or wires, and the elongated frame members may be provided in two orthoganal directions so that they cross at a multiplicity of intersections to form 23 a lattice engaging and locating the terminal faces. Each module can comprise two initially separable layers positioned and retained in back–to–back relationship. A pair of such lattices may be provided, one to each side of the building structure, tied together by the bolts passing 30 through the lattice members at the positions of intersection. A stronger concrete column is provided in an upright wall by omitting the modules and filling the space with a column of reinforced concrete monolithically cast with the skelton of the structure. The insulating material 35 may be shaped around the terminal faces to generally concave surfaces with terminal faces provided with elongated frame engaging formations, the module being adapted for combining in terminal face–to–face relationship with adjacent modules, with the elongated frame members engaging between the adjacent faces. B

0) US2008236083A – MODULAR CONCRETE WALL SYSTEM

29) Family number: 42226779 (US2008236083A) © PatBase

Title: MODULAR CONCRETE WALL SYSTEM

Priority: US20070695020 20070331

Family:

Publication number	Publication date	Application number	Application date
US2008236083 AA	20081002	US20070695020	20070331

Probable Assignee: BANOVA ALDO

Assignee(s):(std)**:** BANOVA ALDO

Inventor(s):(std)**:** BANOVA ALDO

Agent(s): TRAVIS CHANDLER PHD LLC

International class (IPC 8–9)**:** E04B2/40 (Advanced/Invention); E04B2/28 (Core/Invention)

CPC: E04B2/8635 E04B2002/867 E04C3/34 Y10T29/49629 Y10T29/49631

European class: E04B2/86G E04C3/34 P04B2/86P

US class: 249/34 249/48 29/897.32 29/897.33 52/426

Classification Explorer

Cited documents: US7415804 BB, US6962028 BB, US6935081 BB, US6880304 BA, US6609340 BB, US6474033 BA, US6321498 BA, US6176059 BA, US5570550 A, US4604843 A, US4433520 A, US4229920 A, US4037816 A, US3621625 A, US3562991 A, US3496694 A, US2942454 A, US2821850 A, US2122577 A, US2056289 A, US2005462 A, US1087011 A,

Forward Citations: WO16141418, US8443560, US2011203202, GB2522284,

Abstract:
Source: US2008236083A Disclosed is a modular poured concrete wall system that addresses the needs not optimally met by the prior art, where inexpensive small light interlocking forms are quickly and readily assembled, to produce the desired aesthetically pleasing appearance of a brick wall system. The forms remain in place as part of the final structure and finished surface of the walls. Thus, a footer track assembly is affixed to a standard concrete footer or foundation. Then the modular forms are assembled upon the footer track, stacked together to produce the appearance of a brick wall. As each row or two of forms are assembled, the forms are filled with concrete. Following the concrete pour, additional forms are assembled on the top of the prior forms, to produce additional rows. By repeating this process, the full height of the wall can be quickly reached. The method may include steel rebar, such as for horizontal bond beams and for vertical strength. In an alternative embodiment, curved modular forms may be assembled to produce a circular column, where the exterior surface is finished as a decorative brick appearance.

0) US2008098676A – CONNECTORS AND METHODS OF CONSTRUCTION FOR A PR...

30) Family number: 41770201 (US2008098676A) © PatBase

Title: CONNECTORS AND METHODS OF CONSTRUCTION FOR A PRECAST SPECIAL CONCRETE MOMENT RESISTING SHEAR WALL AND PRECAST SPECIAL CONCRETE MOMENT RESISTING FRAME BUILDING PANEL SYSTEM

Priority: US20060554611 20061031

Family:

Publication number	Publication date	Application number	Application date
US2008098676 AA	20080501	US20060554611	20061031

Probable Assignee: HUTCHENS JOHN FRANCIS

Assignee(s):(std)**:** HUTCHENS JOHN FRANCIS

Inventor(s):(std)**:** HUTCHENS JOHN FRANCIS

Agent(s): JOHN F HUTCHENS

International class (IPC 8–9)**:** E04B1/38 E04B7/00 (Advanced/Invention); E04B1/38 E04B7/00 (Core/Invention)

CPC: B28B7/0026 B28B7/0032 B28B19/003 B28B23/00 B28B23/0025 E04B1/043 E04B1/06 E04B2/86 E04B2002/8682

European class: B28B19/00E B28B23/00 B28B23/00D B28B7/00A7D B28B7/00B2 E04B1/04B E04B1/06 E04B2/86 P04B2/86R

US class: 52/281 52/281P 52/282.3 52/282.300S

Classification Explorer

Forward Citations: US9267283, US9090497, US8782993, US8640419, US2017044754, US2013319937, US2012247055, US2012210669, CN104074314, CN103530459, CN102127941, CN102002977,

Abstract:
Source: US2008098676A A precast concrete wall panel molding system for fabricating a wall shell and a plurality of ribs and beams. A precast concrete wall panel molding system with facilities for incorporating door and window frames. A ductile panel end connector for attaching panels one to another whether in parallel or angled as in inside or outside corners. A ductile panel end connector for attaching panels to columns. A wall anchor/shear plate with post–tensioning brace plate. A hybrid precast/cast–in–place special moment resisting shear wall/special moment resisting frame reinforced concrete building system for regions of potential seismic activity. A prescriptive method building system for composite structural building assemblies with conventional wood and light–gauge steel framing, structural steel, and other building code approved and tested building systems, building components, building panel systems, building roofing systems, modular and manufactured buildings, and building electrical, mechanical, and plumbing systems. A precast concrete wall panel system conforming to industry practices and standards as published by the Precast/Prestressed Concrete Institute, (PCI) in it's "PCI Design Handbook" (fifth edition, 1999), the American Concrete Institute "Building Code Requirements for Structural Concrete" (ACI 318–05), The "International Building Code 2006" and the "Uniform Building Code".

0) US3678638A – BUILDING CONSTRUCTION OF MODULAR UNITS WITH SET...

31) Family number: 1014689 (US3678638A) © PatBase

Title: BUILDING CONSTRUCTION OF MODULAR UNITS WITH SETTABLE MATERIAL THEREBETWEEN

Priority: US19700101341 19701224

Family:

Publication number	Publication date	Application number	Application date
US3678638 A	19720725	US19700101341	19701224

Probable Assignee: SODETEG INC

Assignee(s):(std)**:** SODETEG INC

Inventor(s):(std)**:** MOUGIN GEORGE

Inventor(s): GEORGE MOUGIN

International class (IPC 8–9)**:** E04B1/348 (Advanced/Invention); E04B1/348 (Core/Invention)

International class (IPC 1–7)**:** E04B1/348 E04H9/06

CPC: E04B1/34807

European class: E04B1/348B

US class: 52/208 52/301 52/309.9 52/745.03 52/79.11 52/790 522/360 522/80 523/10 523/90 527/470

Classification Explorer

Cited documents: US3514910 A, US3512315 A, US3495371 A, US3331170 A, US3300943 A, US1293377 A, NL6613900 A, FR1269080 A, AU138249 A1,

Forward Citations: WO9722770, WO14059546, WO13075023, WO13075023, US9617724, US9593478, US8353131, US8176696, US8161699, US6854223, US5887404, US5867964, US5737895, US4310992, US3969872, US3830025, US3751864, US2014298745, US2010058700, US2009107065, US2007213960, US2007044392, FR2218442, FR2218442, EP2780516, EP2780516, EA200, EA000200, AU713617,

Abstract:
Source: US3678638A Modular units, forming room units are built up of panel structures having an L or U–shaped channel extending around the panel structure and forming the frame, with at least one panel secured to the side legs of the channel. The channel reinforces the panels and forms a mold of sufficient strength to hold poured concrete therein. Such modular units are placed adjacent each other, preferably with a polystyrene separating sheet therebetween, and concrete is poured in the open faced channels to form vertical columns and horizontally extending beams. After hardening, additional units can be placed on top of the thus formed column and beam structure, the weight of the upper modular units, or of the top structure being carried by the columns and beams and not by the walls of the modular units. Preferably, reinforcing rods which may be welded to the channels are incorporated in the columns and beams.

0) US5177913A – PRE–FABRICATED MODULAR PARKING LOT

32) Family number: 11540586 (US5177913A) © PatBase

Title: PRE–FABRICATED MODULAR PARKING LOT

Priority: IL19890091978 19891012 US19900587933 19900925 US19920922427 19920731

Family:

Publication number	Publication date	Application number	Application date
EP0422915 A2	19910417	EP19900311099	19901010
EP0422915 A3	19920212	EP19900311099	19901010
IL91978 A0	19900712	IL19890091978	19891012
IL91978 A1	19911215	IL19890091978	19891012
JP3137362 A2	19910611	JP19900275145	19901011
US5177913 A	19930112	US19900587933	19900925
US5305563 A	19940426	US19920922427	19920731

Probable Assignee: IGAL EREL

Assignee(s):(std)**:** EREL YIGAL ; IGAARU ERERU ; IGAL EREL

Assignee(s): AMIR EREL ; IGAEL EREL

Inventor(s):(std)**:** EREL YIGAL ; IGAARU ERERU

Agent(s): EITAN PEARL LATZER AND COHEN ZEDEK

Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

International class (IPC 8–9)**:** E04B1/348 E04H6/08 E04H6/10 (Advanced/Invention); E04B1/348 (Core/Invention)

International class (IPC 1–7)**:** E04B1/348 E04H1/00 E04H3/00 E04H6/00 E04H6/08 E04H6/10

CPC: E04H6/10

European class: E04H6/10

US class: 52/175 52/236.7 52/79.1 52/79.13 52/79.2

Classification Explorer

Cited documents: US5182886 A, US4800694 A, US4694621 A, US4263757 A, US4211043 A, US4068425 A, US4060948 A, US3813835 A, US3805461 A, US3653146 A, US3566558 A, US3510997 A, US1886944 A, SU1507934 T, IT654479 A, EP0118723 A2, DE7331600 U, DE7331600, DE1759805 B1,

Forward Citations: WO9815702, WO9201133, WO11135546, USD673696, US9267306, US9243398, US8919058, US8910439, US8429871, US7941975, US7874115, US7107734, US6922947, US6729075, US6106186, US5848501, US5846020, US5826381, US5720135, US5634308, US5277573, US2015033647, US2012110928, US2011214361, US2010313500, US2009070131, US2009049776, US2008276553, US2007261335, US2006216111, US2006024149, US2006010621, US2005252095, US2005155298, US2005072115, US2004211137, US2004189065, RU2551597, FR2960865, EP2267247, EP2105553, EP2105552, EP1507053, EP0592917, AU679392,

Abstract:
Source: US5177913A A multi–level parking lot made from prefabricated reinforced concrete modular elements is disclosed. The modular elements include plural parking compartments with defined paths for passage between the compartments and approach routes for entering the parking lot. The parking compartments include connecting plates and integral units with four columns, each integral unit including a slab integral with and resting on the four columns. A steel pipe protrudes from an upper surface of the column for interfitting engagement with a corresponding hole in the connecting plate. The individual units bear against themselves in a stable manner by virtue of their weight without the need for any linking connections therebetween.

0) EP0947639A1 – METHOD FOR CONSTRUCTING A FLOOR AS WELL AS A MO...

33) Family number: 12928056 (EP0947639A1) © PatBase

Title: Method for constructing a floor as well as a modular vault system for implementing the method

Priority: DE19981015100 19980403 DE19995010790 19990218

Family:

Publication number	Publication date	Application number	Application date
AT279604 E	20041015	AT19990103197T	19990218
DE19815100 A1	19991007	DE19981015100	19980403
DE59910790 D1	20041118	DE19995010790	19990218
EP0947639 A1	19991006	EP19990103197	19990218
EP0947639 B1	20041013	EP19990103197	19990218
ES2227916 T3	20050401	ES19990103197T	19990218

Probable Assignee: ADLER PETER

Assignee(s):(std)**:** ADLER PETER

Inventor(s):(std)**:** ADLER PETER

Designated states: AT CH DE ES FR IT LI NL

International class (IPC 1–7)**:** E04B1/16 E04B1/32 E04B5/36 E04B7/10

CPC: E04B5/36 E04B7/102

European class: E04B5/36 E04B7/10B

Classification Explorer

Cited documents: US4697954 A, FR742022 A, FR488430 A, FR2515233 A1, DE2658622 A1, DE2328893 A1, DE1008471 B, BE698444 A,

Forward Citations: EP2444560, DE102012016044, AT510664, AT510664,

Abstract:
On the upper side of the arch structure (12) troughs (22) are formed, which can be filled with a building material filling. The arch modules (14) are made of plastics, glass–and/or steel fiber concrete and are produced by an injection molding process. The arch structure (12) forms a curved shell (16), preferably with two or three axes.

0) US2006196132A – MODULAR BUILDING SYSTEM AND METHOD FOR LEVEL AS...

34) Family number: 33318848 (US2006196132A) © PatBase

Title: MODULAR BUILDING SYSTEM AND METHOD FOR LEVEL ASSEMBLING OF PREFABRICATED BUILDING MODULES

Priority: ES20050000490 20050303

Family:

Publication number	Publication date	Application number	Application date
EP1700964 A2	20060913	EP20060004289	20060302
EP1700964 A3	20061206	EP20060004289	20060302
ES2284306 AA	20071101	ES20050000490	20050303
ES2284306 BA	20080916	ES20050000490	20050303
US2006196132 AA	20060907	US20060366024	20060302
US7594361 BB	20090929	US20060366024	20060302

Probable Assignee: COMPACT HABIT SL

Assignee(s):(std)**:** COMPACT HABIT S L ; RUANO JOSE T

Assignee(s): COMPACT — HABIT SL ; COMPACT HABIT SL

Inventor(s):(std)**:** RUANO JOSE T ; TRAGANT RUANO JOSE

Inventor(s): JOSE TRAGANT RUANO ; RUANO JOSE TRAGANT ; RUANO JOSE

Agent(s): JAMES W PRAVEL PRAVEL INTELLECTUAL PROPERTY LAW PC; LOCKE LORD BISSELL AND LIDDELL LLP; BRANDON T

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8–9): E04B1/348 E04B2/00 E04H1/00 E04H14/00 (Advanced/Invention); E04B2/00 E04H1/00 E04H14/00 (Core/Invention)

CPC: E04G21/142 E04B1/34823 E04B2001/3583 E04G21/161

European class: E04B1/348C2 E04G21/14B E04G21/16B P04B1/35T

US class: 220/1.5 220/4.27 52/236.3 52/582.1 52/79.13 52/79.9

Classification Explorer

Cited documents: WO9840573 A1, WO9738179 A1, US6871453 BB, US6625940 BB, US6109469 A, US5755063 A, US5706614 A, US5678715 A, US5396742 A, US5031794 A, US4942975 A, US4813542 A, US4694621 A, US4599829 A, US4435927 A, US4186841 A, US3990193 A, US3921240 A, US3907147 A, US3871146 A, US3824750 A, US3749273 A, US3690077 A, US3564795 A, US3377755 A, US2007271857 AA, GB1476959 A, FR2430487 A1, FR2209025 A1, ES377340 A1, EP1184521 A1, EP0962603 A1, DE2326277 A1,

Forward Citations: WO13175027, WO13014305, WO09133526, WO08068366, WO08065216, US9663937, US9366020, US9243398, US8935890, US8919058, US8910439, US8429871, US8407964, US8402706, US8365473, US8297002, US8276327, US7963073, US7941975, US7921609, US2014305069, US2014251988, US2012110928, US2011214361, US2011011011, US2009019811, US2008276553, US2008163808, US2007138173, RU2487282, GB2451092, ES2393446, ES2369947, ES2328894, ES2303457, EP2246493, DE102014002497, DE102014002480, DE102012000361,

Abstract:
Source: US2006196132A The modular building system consists of building modules (1) in high resistance, reinforced concrete, to be stacked vertically and placed side–by–side in the construction of preferably residential buildings. Each module (1) forms a monolithic structure or consists of a steel frame (103) and panels (102), with walls, ceiling and floor. These modules (1) include positioning devices (2 and 3) for stacking purposes; side connection elements (5 and 6) between the modules (1); and/or horizontal and vertical tightening bands (104 and 105). These modules are levelled by using levelling sheets and/or non–retraction mortar and/or a method with jacks (108) and tubular sections (109) filled with non–retraction mortar (193) until it sets and the jacks (108) are removed. Each building module (1) includes all the accessories and finishing elements of a home, such as facades, windows, utilities, furniture and interior equipment considered useful.

0) US2003201644A – ALL–WEATHER ENERGY AND WATER PRODUCTION VIA STE...

35) Family number: 29418804 (US2003201644A) © PatBase

Title: ALL–WEATHER ENERGY AND WATER PRODUCTION VIA STEAM–ENHANCED VORTEX TOWER

Priority: US20020133488 20020429 US20020310888 20021206 WO2003IL00158 20030303

Family:

Publication number	Publication date	Application number	Application date
AU2003209639 AA	20031117	AU20030209639	20030303
AU2003209639 AH	20031117	AU20030209639	20030303
US2003201644 AA	20031030	US20020310888	20021206
US2003201646 AA	20031030	US20020133488	20020429
US6943461 BB	20050913	US20020133488	20020429
US7154190 BB	20061226	US20020310888	20021206
WO03093673 A2	20031113	WO2003IL00158	20030303
WO03093673 A3	20040108	WO2003IL00158	20030303

Probable Assignee: KAPLOUN SOLOMON

Assignee(s):(std)**:** KAPLOUN SOLOMON

Inventor(s):(std)**:** KAPLOUN SOLOMON ; SOLOMON KAPLOUN

Agent(s): LO TOMPAKOV; TOMPAKOV GALINA; GALINA

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): F03B13/00 F03B13/10 F03D9/00 H02P9/04 (Advanced/Invention); F03B13/00 F03D9/00 H02P9/04 (Core/Invention); F03H (Subclass/Invention)

International class (IPC 1–7): F03B13/00 F03B13/10 F03D9/00 F03H H02P9/04

CPC: Y02B10/70 Y02B10/30 Y02P80/22 Y02P80/24 F03D9/25 H02K7/183 F05B2240/132 F05B2260/24 Y02E10/465 Y02E10/725

European class: F03D9/00C H02K7/18A2W R05B240/132 R05B260/240 Y02B10/30 Y02E10/46U Y02E10/72H

US class: 290/43 290/43P 290/44 290/54 290/54P 290/55

Classification Explorer

Cited documents: US6729839 BA, US6595753 BA, US6590300 BA, US6532740 BA, US6518680 BB, US6518680 BA, US6510687 BA, US6215199 BA, US6160336 A, US6016015 A, US5483798 A, US5480594 A, US5478197 A, US5477684 A, US5395598 A, US5381048 A, US5300817 A, US5284628 A, US5227683 A, US5096467 A, US4935639 A, US4894993 A, US4878349 A, US4779006 A, US4755352 A, US4742682 A, US4691130 A, US4553037 A, US4507916 A, US4499034 A, US4481774 A, US4475342 A, US4452562 A, US4452046 A, US4438341 A, US4433544 A, US4433248 A, US4421452 A, US4410805 A, US4397793 A, US4339547 A, US4242591 A, US4213302 A, US4211084 A, US4157368 A, US4135493 A, US4120283 A, US4095118 A, US4080186 A, US4070131 A, US4064409 A, US4031173 A, US3936652 A, US3935897 A, US2004041400 AA, US2002162329 AA, US2001048877 AA, US1112203 A, DE3924968 A1,

Forward Citations: WO09061709, WO08014596, US9616763, US9597615, US9325218, US9322385, US9269483, US9190879, US9154024, US9154007, US9150429, US9103320, US9062470, US8823241, US8739540, US8736133, US8729724, US8723402, US8677752, US8552580, US8474264, US8461712, US8461706, US8376699, US8240998, US8026621, US7987677, US7984613, US7980078, US7777363, US7745962, US7743624, US7663261, US7621129, US7595487, US7511387, US2017149306, US2016257216, US2015047352, US2014373466, US2014238839,

US2013038067, US2012300525, US2012133141, US2011232875, US2011109096, US2010204839, US2010199668, US2010148515, US2010109337, US2010096857, US2010018205, US2009285667, US2009242174, US2009241545, US2009120091, US2009120090, US2009050801, US2008178607, US2007157615, US2007035138, US2006182630, US2005161951, US2005160759, TWI353412, EP2047100, EP2047100, CN102536693,

Abstract:
Source: US2003201644A Complex of additional or modified process steps and correspondent new or modified designs of units of steam−enhanced vortex electric station is described as continuation−in−part application out of parent application "All−Weather Energy and Water Production via Steam−Enhanced Vortex Tower", Kaploun S., Ser. No. 10/133,488, Filing Date Apr. 29, 2002, said complex makes said kind of station available for stable long operation in majority of the climatic zones and power loading regimes, including regions with winter negative temperatures during the calm or insufficient winds and/or low loads, said complex comprises: heat accumulation/release water−steam−air system using excessive solar, geothermal or/and waste low−temperature heat; large−rating three−phase vortex electric generator with hollow flow−through drum rotated by inside upward column vortex airflow; adjusted to said conditions modifications of voltage inducing magnetic concentrators used in described before [9] magneto−vortex electric generator

0) US2015125212A – FLOATING LAKE SYSTEM AND METHODS OF TREATING WA...

36) Family number: 58640880 (US2015125212A) © PatBase

Title: FLOATING LAKE SYSTEM AND METHODS OF TREATING WATER WITHIN A FLOATING LAKE

Priority: US20130531395 20131103 US20130900308P 20131105 US20140531395 20141103 WO2014IB02991 20141104

Family:

Publication number	Publication date	Application number	Application date
AP201609059 A0	20160229	AP20160009059	20141104
AR098320 AA	20160526	AR2014P104167	20141105
AU2014347797 AA	20150514	AU20140347797	20141104
CA2919950 AA	20160129	CA20142919950	20141104
CL2016000725 A1	20161007	CL20160000725	20160329
CN105705464 A	20160622	CN201480053380	20141104
CO16112017 A2	20160510	CO20160112017	20160502
CO7600658 A2	20160510	CO20160112017	20160502
CR20160071 A	20160712	CR20160000071	20160212
CU20160025 A7	20160930	CU20160000025	20160225
DOP2016000046 A	20160315	DO20160000046	20160209
EA201690417 A1	20160729	EA20160090417	20141104
EP3066056 A2	20160914	EP20140841384	20141104
IL243820 A0	20160421	IL20140243820	20141104
IN201637007714 A	20160701	IN201637007714	20160304
JP2017500203 T2	20170105	JP20160545069T	20141104
KR20160033759 A	20160328	KR20167004333	20141104
MA38906 A1	20160930	MA20160038906	20160311
MX2016002298 A1	20160615	MX20160002298	20141104
NZ716959 A	20170526	NZ20140716959	20141104
PE06262016 A1	20160625	PE20160000262	20141104
PH2016500297 A	20160516	PH20160500297	20160212
SG11201601064T A1	20160330	SG20161101064	20141104
US2015125212 AA	20150507	US20140531395	20141103
UY35822 A1	20141231	UY20140035822	20141105
WO15068042 A2	20150514	WO2014IB02991	20141104
WO15068042 A3	20150820	WO2014IB02991	20141104
ZA201601028 A	20170222	ZA20160001028	20160215

Probable Assignee: CRYSTAL LAGOONS CURACAO BV

Assignee(s):(std)**:** CRYSTAL LAGOONS CURACAO BV ; FISCHMANN FERNANADO BENJAMIN

Assignee(s): FISCHMANN FERNANDO BENJAMIN

Inventor(s):(std)**:** BENJAMIN FISCHMANN FERNANDO ; FISCHMANN TORRES FERNANDO BENJAMIN ; FISCHMANN FERNANDO BENJAMIN ; FERNANDO BENJAMIN FISCHMANN

Inventor(s): FISCHMANN FERNANADO BENJAMIN

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; ROBIC; ESTUDIO CLARKE MODET AND CO CHILE LIMITADA; CAROLINA MERCEDES DAZA MONTALVO; CARVAJAL Y URQUIJO ISABEL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ

NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B01D21/01 B63B35/00 C02F C02F1/00 C02F1/44 C02F1/52 C02F1/54 C02F1/56 C02F1/72 C02F1/76 C02F1/78 C02F103/00 C02F103/02 C02F103/42 C02F11/12 C02F9/00 C02F9/02 C02F9/04 E02B15/00 E02B15/04 E02B15/06 E02B15/08 E02B3/00 E04H E04H4/00 E04H4/04 E04H4/12 (Advanced/Invention); C02F1/00 C02F1/52 C02F1/72 C02F103/00 C02F103/02 C02F103/42 (Advanced/Non–invention); C02F (Subclass/Invention)

CPC: E02B15/04 E02B15/06 E02B15/0814 E02B15/0807 E02B15/045 E02B15/041 C02F9/00 C02F1/004 C02F1/008 C02F1/442 C02F1/444 C02F1/52 C02F1/72 C02F2103/007 C02F2103/023 C02F2103/42 C02F2201/006 C02F2209/001 C02F2209/005 C02F2209/03 C02F2209/04 C02F2209/06 C02F2209/07 C02F2209/11 C02F2209/36 C02F2209/44 C02F2303/10 E04H4/0012 C02F1/5245 C02F1/56 C02F1/722 C02F1/76 C02F1/78 C02F1/4672 E04H4/1209 Y02W10/30

US class: 210/712 405/63

Classification Explorer

Cited documents: US5080783 A, US4944872 A, US4231873 A, US4087870 A, US3616923 A, US3517513 A, US2013264261 AA, US2012103445 AA, US2012024796 AA, US2012024794 AA, US2011210076 AA, US2008190849 AA, US2005198730 AA, CN103435177 A, CN102730878 A, CN101186403 A,

Abstract:
Source: US2015125212A The present invention relates to floating lakes and to the treatment of the water in such lakes. The present invention further relates to large floating lakes that can be installed within a natural or artificial water body to improve water conditions that are unsuitable for recreational uses. The floating lake can be provided with a chemical application system; a filtration system including a mobile suctioning device and filters; a skimmer system, and optionally a coordination system.

0) AU199048539A – BUILDING CONSTRUCTION SYSTEM

37) Family number: 3257572 (AU199048539A) © PatBase

Title: BUILDING CONSTRUCTION SYSTEM

Priority: AU19890002312 19890118 AU1989PJ02312 19890118 AU19900048539D 19890118 AU19900048539 19890118

Family:

Publication number	Publication date	Application number	Application date
AU199048539 A1	19900726	AU19900048539	19900118

Probable Assignee: PAUL ANTHONY DOWDLE

Assignee(s):(std)**:** PAUL ANTHONY DOWDLE

Assignee(s): STONE RONALD ; DOWDLE PAUL ANTHONY

Inventor(s):(std)**:** DOWDLE PAUL ANTHONY ; STONE RONALD

Inventor(s): PAUL ANTHONY DOWDLE ; RONALD STONE

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD

International class (IPC 8–9)**:** E04B5/23 E04C3/02 E04C5/065 (Advanced/Invention); E04B5/17 E04C3/02 E04C5/01 (Core/Invention)

International class (IPC 1–7)**:** E04B5/23 E04C3/02 E04C5/065

Classification Explorer

Abstract:
Source: AU199048539A 1. A modular skeletal reinforcement element for a building comprising a plurality of substantially parallel elongate reinforcing members defining at least three planar faces, elongate corner members extending substantially parallel to said reinforcing members and disposed at each corner formed by the intersection of said planes and a plurality of diagonally extending bracing members extending between adjacent corner members to locate the reinforcing members defining the respective planar faces. 7. A modular floor forming element for a building comprising a generally planar bi'e to support concrete fill material, a plurality of elongate reinforcing trusses extending across said base, each said truss comprising a pluzality of spaced apart substantially parallel and coplanar elongate reinforcing members and a plurality of diagonally extending bracing members to locate said reinforcing members. 7 A

0) WO09087593A2 – A METHOD OF CONSTRUCTING A WALL ARRANGEMENT, A ...

38) Family number: 43509339 (WO09087593A2) © PatBase

Title: A METHOD OF CONSTRUCTING A WALL ARRANGEMENT, A WALL ARRANGEMENT, AND A MODULAR WALL SYSTEM

Priority: ZA20080000204 20080107

Family:

Publication number	Publication date	Application number	Application date
WO09087593 A2	20090716	WO2009IB50031	20090107
WO09087593 A3	20100318	WO2009IB50031	20090107

Probable Assignee: IMISON PROPRIETARY LTD

Assignee(s):(std)**:** HUMAN JOHAN LEONARD ; IMISON PROPRIETARY LTD

Assignee(s): IMISON PROPRIETARY LIMITED

Inventor(s):(std)**:** HUMAN JOHAN LEONARD

Agent(s): WELTHAGEN DIETER HEIN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B2/84 E04C2/288 (Advanced/Invention); E04B2/84 E04C2/26 (Core/Invention)

CPC: E04B1/14 E04B1/165 E04B2/847

European class: E04B1/14 E04B1/16D P04B2/84P3

Classification Explorer

Cited documents: ZA200305932 A, WO06095266 A1, US6519904 BA, US5231813 A, US2007245640 AA, US2005066587 AA, GB2062057 A1, DE10300024 A1,

Forward Citations: WO16025987, FR2950910,

Abstract:
The invention relates to a method of constructing a wall arrangement, the method including constructing, in situ, a core of a wall arrangement from a modular wall system comprising a plurality of prefabricated core elements and then spray–applying rendering to vertical faces defined by the core. The core elements include at least one wall panel, and, optionally, posts, etc. Each core element includes a body made of a lightweight material, e.g. expanded polystyrene. The wall panel includes a substantially rectangular body defining two operatively vertically disposed opposite side edges and at least one column member extending at least substantially between operative top and bottom edges of the body in a passage defined in the body. The invention also extends to a wall system including core elements, as referred to, for forming a core of a wall arrangement and to a wall arrangement constructed in accordance with the method.

0) US2009301003A – WALL STRUCTURE WITH HOLLOW PLASTIC MODULES

39) Family number: 40801127 (US2009301003A) © PatBase

Title: WALL STRUCTURE WITH HOLLOW PLASTIC MODULES

Priority: JP20090509454 20060502 JP20090509454T 20060502 WO2006MX00028 20060502 MX20080011304 20080904 JP20120235828 20121025

Family:

Publication number	Publication date	Application number	Application date
BRPI0621574 A2	20111213	BR2006PI21574	20060502
CA2650724 AA	20081028	CA20062650724	20060502
CN101449009 A	20090603	CN200680054736	20060502
CN101449009 B	20140806	CN200680054736	20060502
EP2017393 A1	20090121	EP20060747528	20060502
EP2017393 A4	20140611	EP20060747528	20060502
IN09101DN2008 A	20090320	IN2008DN09101	20081030
JP2009535545 T2	20091001	JP20090509454T	20060502
JP2013036330 A2	20130221	JP20120235828	20121025
JP5191481 B2	20130508	JP20090509454T	20060502
JP5438195 B2	20140312	JP20120235828	20121025
MX2008011304 A1	20080912	MX20080011304	20080904
US2009301003 AA	20091210	US20060299103	20060502
US8297012 BB	20121030	US20060299103	20060502
WO07126303 A1	20071108	WO2006MX00028	20060502

Probable Assignee: MARIANO NUNEZ VAGAS

Assignee(s):(std)**:** MARIANO NUNEZ VAGAS ; NU EZ VARGAS MARIANO ; NUNEZ VARGAS MARIANO ; VARGAS MARIANO NUNEZ

Assignee(s): MARIANO NUNEZ VARGAS

Inventor(s):(std)**:** MARIANO NUNEZ VARGAS ; NU EZ VARGAS MARIANO ; NUNEZ VARGAS MARIANO ; VARGAS MARIANO NUNEZ

Agent(s): CAMERON MACKENDRICK LLP; PROPI SL; ROBERTS MLOTKOWSKI SAFRAN AND COLE PC INTELLECTUAL PROPERTY DEPARTMENT; ROBERTS MLOTKOWSI SAFRAN AND COLE PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/02 E04B2/02 E04B2/18 E04B2/20 E04B2/74 E04C2/20 E04C2/40 E04C5/08 E04F13/08 E04F13/18 E04F19/00 E04H1/00 E04H9/02 (Advanced/Invention); E04B1/00 E04B1/02 E04B2/14 E04B2/74 E04C2/10 E04C2/40 E04F13/18 E04F19/00 E04H1/00 E04H9/02 (Core/Invention)

International class (IPC 1–7): E04B2/18

CPC: E04B1/165 E04B2/06 E04B2002/0213 E04B2002/0215 E04B2002/0254 E04C2/041

European class: E04B1/16D E04B2/06 E04C2/04B P04B2/02M1D P04B2/02M1E P04B2/02M3E

US class: 52/167.1 52/167.100P 52/223.7 52/236.3 52/236.300S 52/284 52/285.1 52/309.1 52/309.100S 52/311.1 52/311.100S 52/320 52/320S 52/474 52/474S 52/561 52/561S 52/580 52/580S 52/592.6 52/606

Classification Explorer

Cited documents: WO05085544 A1, WO02072403, US6931803 BA, US6588168 BB, US6571525 BB, US6389758 BA, US6295778 BA, US6282859 BA, US6253519 BA, US6161357 A,

US5987840 A, US5848927 A, US5678373 A, US5657594 A, US5471808 A, US5201786 A, US5007218 A, US3742665 A, US3618279 A, US3382632 A, US3343328 A, US3292331 A, US3209510 A, US2883852 A, US2861388 A, US2777172 A, US2684589 A, US2387659 A, US2291712 A, US2241169 A, US2009313923 AA, US2009113836 AA, US2006070334 AA, US2004134154 AA, US2004103601 AA, US2003029119 AA, US2003009963 AA, JPS6344906 B2, JP8193371 A2, JP8193371, JP63044906 B4, JP63044906 B2, JP11247333 A2, JP11247333, JP10252215 A2, JP10252215, JP08193371, GB1157682 A, FR1586268 A, CN2398357, CN1676788, CA1081911 A1,

Forward Citations: USD733993, US9089096, US8839593, US2016194864, US2011283657, EP3040497, CN103967201,

Abstract:
Source: US2009301003A The wall is formed by stacking hollow plastic modular elements (1), with dovetailing on their upper and lower faces, from a lower metal channel (2) up to another, upper metal channel (3), the structure being stiffened by means of vertical (1) via vertical conduits in the modules that extend from the lower channel (2) to the upper channel (3).

0) US4570409A – FOUNDATION SYSTEM FOR MODULAR AND MOBILE HOUSIN...

40) Family number: 4961188 (US4570409A) © PatBase

Title: Foundation system for modular and mobile housing

Priority: US19830558906 19831207

Family:

Publication number	Publication date	Application number	Application date
US4570409 A	19860218	US19830558906	19831207

Probable Assignee: PALM HARBOR HOMES INC

Assignee(s):(std)**:** PALM HARBOR HOMES INC

Inventor(s):(std)**:** WILKS DAVID R

International class (IPC 8–9)**:** E02D27/10 (Advanced/Invention); E02D27/10 (Core/Invention)

International class (IPC 1–7)**:** E04G21/00

CPC: E02D27/10

European class: E02D27/10

US class: 52/169.13 52/169.8 52/741.15 527/420

Classification Explorer

Cited documents: US4453862 A, US3820024 A, US3713259 A, US3608928 A, US2858694 A, US2027511 A, GB935797 A,

Forward Citations: US8904734, US8347584, US8347571, US8206064, US8161698, US7980034, US7735273, US7360315, US7343713, US6748717, US6568147, US2012192422, US2008190058, US2007175136, US2007092339, US2006236647, US2005016111, CN102720360, CN102720360,

Abstract:
Source: US4570409A A foundation system for housing modules comprises a plurality of pier columns (10) each comprising a bore hole (12) formed in the earth and having a concrete reinforcing structure (16) positioning therein. A body of concrete (24) is poured into the bore hole and an outer support member (30) is positioned in the body of concrete (24) prior to the setting thereof. A inner support member (32) is telescopingly receiving in the outer support member (30). A module (40) including a chassis (42) comprising a steel beam (44) is positioned above the pier column (10). The inner support member (32) is extended into engagement with the steel beam (44) and is welded, both to the steel beam and to the outer support member. In this manner the pier column (10) supports the housing module.

0) US6434900B – PREFABRICATED CONCRETE WALL SYSTEM

41) Family number: 23555001 (US6434900B) © PatBase

Title: Prefabricated concrete wall system

Priority: US20000212795P 20000614 US20010766421 20010122

Family:

Publication number	Publication date	Application number	Application date
US6434900 BA	20020820	US20010766421	20010122

Probable Assignee: MASTERS MICHAEL

Assignee(s):(std)**:** MASTERS MICHAEL

Inventor(s):(std)**:** MASTERS MICHAEL

International class (IPC 8–9)**:** E01F7/00 E01F8/00 E04G21/14 (Advanced/Invention); E01F7/00 E01F8/00 E04G21/14 (Core/Invention)

International class (IPC 1–7)**:** F04B1/00

CPC: E01F7/00 E01F8/0017 E01F8/0023 E04G21/142

European class: E01F7/00 E01F8/00A10 E01F8/00A15 E04G21/14B

US class: 256/73 52/125.4 52/125.6 52/274 52/283 52/295 52/309.12 52/309.17 52/589.1 522/830

Classification Explorer

Cited documents: US6282853 BA, US6131365 A, US6119422 A, US6112489 A, US5921046 A, US5588272 A, US5566521 A, US5488806 A, US5404685 A, US5335472 A, US5279089 A, US5022781 A, US4924641 A, US4616459 A, US4532745 A, US4249354 A, US4038798 A, US3755982 A,

Forward Citations: WO09031139, WO09031139, WO07089826, WO07061541, WO04090249, US9499994, US9243398, US9234349, US9200447, US9097016, US9062449, US9032679, US9027300, US8919058, US8793966, US8776476, US8695299, US8458983, US8341907, US8127509, US7757445, US7627997, US7571577, US7497945, US7237366, US7100336, US7007436, US6807782, US6729094, US2012110928, US2012085049, US2012031027, US2011214374, US2011197533, US2010088981, US2010018141, US2009293415, US2009064617, US2008307739, US2008295430, US2008104913, US2008083915, US2007277946, US2007235393, US2007193213, US2007144093, US2007062133, US2006260268, US2005284060, US2005279031, US2005258572, US2005252117, US2005229516, US2004261332, US2004255530, US2004206032, US2004206015, US2004040239, US2004016192, US2002189190, GB2443822, FR2894267, CN102002916,

Abstract:
Source: US6434900B A prefabricated wall system for free–standing subdivision partitions, highway sound and visual barriers, privacy walls, or walls of a building having a plurality of prefabricated modular panels that are removably interconnected and installed. Each panel is essentially a factory–built sandwich having an expanded plastic foam core between two composite reinforcing wafers. Each wafer is comprised of an inner layer of fiberglass coated with an exterior layer of concrete reinforced with a grid of steel bars. The foam core has a pair of vertical cylindrical voids sized and spaced to mate with foundation columns pre–poured on site. The ends of each panel are reinforced with a steel sling lifting assembly embedded in concrete that includes removable eyebolts at the top edge whereby the panels can be attached to cables at each end for hoisting above the foundation columns and then lowering into place. A vertical groove or trough at each end of the panels receives a connector, such an expansion joint filler. Alternatively the panels can be formed with male tongues at one end and female grooves at the other for tongue–and–groove connection with adjacent panels. The foundation columns can support the panels above ground so that storm runoff waters pass freely thereunder.

0) BRPI0904018A – PAINEIS PRE–FABRICADOS E PROCESSO PARA CONSTRUC...

42) Family number: 49090195 (BRPI0904018A) © PatBase

Title: paineis pre–fabricados e processo para construcao de moradias ou edificacoes modulares
Prefabricated panels and process for construction of houses or buildings modular (Machine translation)

Priority: BR2009PI04018 20091001

Family:

Publication number	Publication date	Application number	Application date
BRPI0904018 A2	20110607	BR2009PI04018	20091001

Probable Assignee: CORPUS CONSULTING AND SERVICES S L

Assignee(s):(std)**:** CORPUS CONSULTING AND SERVICES S L

Inventor(s):(std)**:** BONO JOSE FERNANDO TORTOLA

Inventor(s): JOSE FERNANDO TORTOLA BONO

International class (IPC 8–9): E04B2/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRPI0904018A PAINEIS PRE–FABRICADOS E PROCESSO PARA CONSTRUCAO DE MORADIAS OU EDIFICACOES MODULARES. Paineis pre–fabricados e processo para construcao de moradias ou edificacoes modulares com os referidos paineis, com canaletas verticais (2), dispostas em suas bordas laterais e pontos intermediarios de uniao com outros paineis, as quais percorrem verticalmente sua dimensao e, quando unidos determinam ocos (3) aptos para serem recheados com concreto, existindo, nas canaletas verticais (2) armacoes de aco em forma de U (4) que emergem parcialmente ficando embebidos no referido concreto. Para sua fixacao a concretagem (5) sao providos, em pontos coincidentes com os ocos (3), ferros (6) que emergem do concreto, preferencialmente, uma prolongacao da armacao dos pilotis (7). Alem disso, incorporam um sistema de grampos com angulos de amarracao (8), que surgem por sua borda superior, para fixar a cobertura (9) mediante suas dobras de seus segmentos (10).

Machine translation: PREFABRICATED PANELS AND PROCESS FOR CONSTRUCTION OF BUILDINGS OR MODULAR HOMES. Prefabricated panels and process for construction of houses or buildings with these modular panels with vertical channels (2), arranged on their side edges and intermediate points of union with other panels, which scroll vertically through their size and, when put together determine Hollow (3) fit to be filled with concrete, existing in the vertical channels (2) steel frames in the form of U (4) that emerge become partially embedded in that concrete. For their attachment to concrete (5) are provided at points coincident with the hollow (3), iron (6) emerging from the concrete, preferably an extension of the frame of the pilots (7). It also incorporates a system of clips with lashing angles (8), which arise from its upper edge, to secure the cover (9) through its folds of its segments (10).

0) EP0107749A1 – ASEISMATIC BUILDING STRUCTURE. ERDBEBENSICHERE...

43) Family number: 5352072 (EP0107749A1) © PatBase

Title: Aseismatic building structure.

Priority: EP19820830272 19821028

Family:

Publication number	Publication date	Application number	Application date
EP0107749 A1	19840509	EP19820830272	19821028

Probable Assignee: SCAPIGLIATI PAOLO

Assignee(s):(std)**:** SCAPIGLIATI PAOLO

Inventor(s):(std)**:** SCAPIGLIATI PAOLO

Designated states: AT BE CH DE FR GB LI LU NL SE

International class (IPC 8–9)**:** E04B1/98 E04H9/02 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/24 E04B1/98 E04H9/02

CPC: E04B1/98 E04H9/02

European class: E04B1/98 E04H9/02

Classification Explorer

Cited documents: FR2065639 A1, DE804134 A, DE2418824 B2, DE1831378 U,

Forward Citations: WO9726418, JP2013249618, FR2743588,

Abstract:
Source: EP0107749A1 A modular building structure is based on a foundation comprising a framework of reinforced concrete beams crossing at right angles, the beams having all the same inverted "T" cross section and extending under all the building walls either perimetrical or interior. Steel columns (6) are mounted at regular intervals along the foundation, which columns (6) are formed by segments of a structural shape or section iron preferably with double "T" section which have all the same length equal to the distance between two subsequent floors of the building. The building floors comprise a framework made of structural shapes connecting the columns (6) to one another and of reinforced concrete beams connected to said structural shapes. Filling blocks are inserted between the last named beams as insulating means and forms for concrete casting.

0) GB2085502A – BUILDING UNITS FOR FORMING PERMANENT FORMWORK

44) Family number: 1440519 (GB2085502A) © PatBase

Title: Building units for forming permanent formwork

Priority: AU19800006372 19801106 AU1980PE02084 19800122 AU19810066557 19810122 AU1980PE06372 19801106

Family:

Publication number	Publication date	Application number	Application date
AU198166557 A1	19820729	AU19810066557	19810122
GB2085502 A1	19820428	GB19810001903	19810122

Probable Assignee: TRANSFLOORS PTY LTD

Assignee(s):(std)**:** TRANSFLOORS PTY LTD

Assignee(s): TRANSFLOORS PTYLTD

Inventor(s):(std)**:** FERRO LUIGI ANGELO

Inventor(s): LUIGI ANGELO FERRO

International class(IPC 8–9)**:** E04B5/38 E04C5/065 (Advanced/Invention); E04B5/32 E04C5/01 (Core/Invention)

International class(IPC 1–7)**:** E04B1/16 E04C2/06 E04C2/26 E04C2/46 E04C2/50 E04C5/07 E04C5/12

CPC: E04B5/38 E04C5/065

European class: E04B5/38 E04C5/065

Classification Explorer

Forward Citations: WO9015905, WO9015905, WO03050363, US5235791, FR2631056, ES2270645, ES2073360, ES2063634, EP1411181, EP0384638, EP0343854, EP0342090,

Abstract:
Source: GB2085502A A building unit incorporating a thin wall concrete base 20 and one or more reinforcing members 22 each having a foot secured in the base and extending above the base. The unit is placed in position and concrete is poured onto it to form a structural member, the unit forming a base formwork. Filler blocks of cellular plastics 23, foamed polystyrene 24 or expanded clay 25 may be fixed to the unit to reduce the volume of concrete in the structural member, reducing the latter's weight. The units may be lifted by a spreader frame 27 using hooks 58 and cables 59. Additional temporary formwork may be used.

0) EP0310926A1 – METHOD OF ERECTING A MODULAR BUILDING. VERFAHR...

45) Family number: 2276747 (EP0310926A1) © PatBase

Title: Method of erecting a modular building.

Priority: GB19870023390 19871006

Family:

Publication number	Publication date	Application number	Application date
DE3889056 D1	19940519	DE19883889056	19880928
DE3889056 T2	19940728	DE19883889056T	19880928
EP0310926 A1	19890412	EP19880115975	19880928
EP0310926 B1	19940413	EP19880115975	19880928
GB2210647 A1	19890614	GB19880022327	19880922
GB2210647 B2	19920318	GB19880022327	19880922
GB8723390 A0	19871111	GB19870023390	19871006
GB8822327 A0	19881026	GB19880022327	19880922

Probable Assignee: PORTAKABIN LTD

Assignee(s):(std)**:** PORTAKABIN LTD

Assignee(s): PORTAKABIN LTD HUNTINGTON YORK ; PORTAKABIN LTD HUNTINGTON YORK GB ; PORTAKABIN LIMITED

Inventor(s):(std)**:** BODDY GLYN THOMAS ; BODDY GLYN THOMAS HOLLY TREE C ; TINKLER DAVID ; TINKLER DAVID DANESWELL COURT ; STERICKER STEPHEN WENTWORTH

Inventor(s): STERICKER STEPHEN WENTWORTH COPMANTHORPE YORK ; STERICKER STEPHEN WENTWORTH COPMANTHORPE YORK GB ; TINKLER DAVID DANESWELL COURT STAMFORD BRIDGE YORK ; TINKLER DAVID DANESWELL COURT STAMFORD BRIDGE... ; DAVID TINKLER ; GLYN THOMAS BODDY ; STEPHEN WENTWORTH STERICKER ; BODDY GLYN THOMAS 4 HOLLY TREE COTTAGE ; BODDY GLYN THOMAS 4 HOLLY TREE COTTAGE YORK Y06 2A ; BODDY GLYN THOMAS 4 HOLLY TREE COTTAGE YORK...

Designated states: BE CH DE FR GB LI NL

International class (IPC 8–9): E04B1/343 (Advanced/Invention); E04B1/61 (Advanced/Non–invention)

International class (IPC 1–7): E04B1/343

CPC: E04B1/34321 E04B2001/34389 E04B2001/6191

European class: E04B1/343C1 P04B1/343P P04B1/61D5

Classification Explorer

Cited documents: WO8704744 A1, US4637179 A, US4453356 A, US3755976 A, GB2196661 A1, GB2164678 A1, GB2092640 A1, GB2084213 A1, GB2062044 A1, FR2062048 A5, FR1523458 A, FR1158942 A, EP0237925 A2, EP0203043 A2,

Forward Citations: EP0500322, AT390,

Abstract:
Source: EP0310926A1 A method of erecting a tall modular building including the steps of transporting components from which the building is to be erected to an erection site in the form of at least one collapsed pack having a roof structure (20) comprising a pair of roof beams (21) by which a roof panel (22) is supported to extend therebetween and a plurality of wall structures (30a, 30b) each comprising a pair of columns (31) by which a wall panel (32) is supported to extend therebetween and, at the site, erecting the wall structures (30a, 30b) and connecting the columns (31) thereof to the roof beams (21) so that the roof structure is supported by the wall structures (30a, 30b).

0) US6151844A – RELATIVE GRAVITY OF STRUCTURES

46) Family number: 12693322 (US6151844A) © PatBase

Title:	Relative gravity of structures
Priority:	US19970815533 19970312

Family:

Publication number	Publication date	Application number	Application date
US6151844 A	20001128	US19970815533	19970312

Probable Assignee:	LAZAR S ENGINEERING
Assignee(s):(std):	LAZAR S ENGINEERING
Assignee(s):	LAZAR'S ENGINEERING ; LAZAR"S ENGINEERING
Inventor(s):(std):	KOVACHEVICH LAZAR S
International class (IPC 8–9):	E04B1/10 E04H9/14 (Advanced/Invention); E04B1/00 E04B1/35 (Advanced/Non–invention)
International class (IPC 1–7):	E04B1/92 E04H9/14
CPC:	E04B1/10 E04B2001/2684 E04B2001/3583 E04H9/14
European class:	E04B1/10 E04H9/14 P04B1/26B40A P04B1/35T
US class:	52/167.1 52/223.14 52/223.6 52/295 52/741.3 52/92.2 52/922 521/671
Classification Explorer	
Cited documents:	US5765333 A, US5570549 A, US5535561 A, US5491935 A, US5448861 A, US5384993 A,
Forward Citations:	US7784223, US6367205, US2010186316, US2007011965, US2006190182, GB2507587, FR2830270,

Abstract:
Source: US6151844A A construction modification and associated method used in pre–stressed building structures is designed to enhance resistance to extreme high wind environments, such as hurricanes and tornadoes, and in earthquake prone regions is most useful for structures built of lightweight materials such as wood or aluminum but is also applicable to structures built of heavy materials such as brick, stone, concrete, reinforced concrete and steel. Modifications include increased spacing of the wall frame elements, namely wall studs or columns, symmetrical sheeting at both sides of the frame when wood is used to build wall panels or symmetrical building of walls inside the frame when heavy material as brick, concrete block, stone, cast concrete etc. are used to build panels, a new incorporated into structures is complement system of strings and balance beams and modification of the effective weight or gravity of the structure. The strings of the complement system are placed in channels running through the wood studs of wood wall panels (or columns of the frame system or massive walls if other heavy materials herein mentioned are used) and a balance beam is placed at the top of the walls of each story. A pre–stressing forces are supplied to the strings at the top of each story by a hydraulic devices or other mechanical means in direction coinciding with the direction of the structure's natural gravity. The balance beam distributes applied forces uniformly on the walls. The additional energy in the wall structure, called relative gravity, eliminates problems associated and caused by wind loads and seismic loads including intense vibration of walls, tension and uplift forces in structure, structure's instability and the other modifications eliminates the presence of anemic connectors and fasteners as the means in prior art for load transfer throughout the structure.

0) WO0175241A1 – STRUCTURE STRUCTURE

47) Family number: 15895262 (WO0175241A1) © PatBase

Title: STRUCTURE

Priority: WO2000EP02852 20000331

Family:

Publication number	Publication date	Application number	Application date
AR032147 AA	20031029	AR2001P100593	20010209
AU200038164 A5	20011015	AU20000038164D	20000331
UY26345 A1	20010928	UY20000026345	20000919
WO0175241 A1	20011011	WO2000EP02852	20000331

Probable Assignee: LIKASTAR INT CORP S A

Assignee(s):(std)**:** BECQUART IGNACE ; FRIEDRICH ULF GERD ADOLF ; LIKASTAR INT CORP S A

Assignee(s): LIKASTAR INT CORP SA ; LIKASTAR INT S A CORP

Inventor(s):(std)**:** BECQUART IGNACE ; FRIEDRICH ULF GERD ADOLF

Inventor(s): IGNACE BECQUART ; ULF GERD ADOLF FRIEDRICH

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

International class (IPC 8–9): E04B1/348 (Advanced/Invention); E04B1/348 (Core/Invention)

International class (IPC 1–7): E04B1/348 E04H1/02 E04H9/02

CPC: E04B1/34823

European class: E04B1/348C2

Classification Explorer

Cited documents: US3976741 A, GB1485028 A, FR2464339 A1, FR2289686 A1, EP0826840 A1, EP0631022 A2, EP0000282, DE3526449 A1, DE2711198 A1,

Abstract:
A structure comprises a plurality of pre−cast modular components each of which comprises a floor slab with at least one substantially vertical column located at the periphery thereof, adajacent components abutting one another such that their respective columns are in mating relationship to comprise at least part of a substantially vertical conduit. The structure may be seismic resistant.

0) MX2015005131A – CONSTRUCTIVE SYSTEM BASED ON MODULAR PREFABRICA...

48) Family number: 65167181 (MX2015005131A) © PatBase

Title: CONSTRUCTIVE SYSTEM BASED ON MODULAR PREFABRICATED PANELS, ASSOCIATED WITH OTHER CONSTRUCTIVE ELEMENTS.

Priority: MX20150005131 20150422

Family:

Publication number	Publication date	Application number	Application date
MX2015005131 A1	20161021	MX20150005131	20150422

Probable Assignee: LOPEZ CASTELO JOSE FRANCISCO

Assignee(s):(std)**:** LOPEZ CASTELO JOSE FRANCISCO

Inventor(s):(std)**:** LOPEZ CASTELO JOSE FRANCISCO

International class (IPC 8–9)**:** E04B2/96 (Advanced/Invention)

Classification Explorer

Abstract:
The present disclosure is related to a constructive system based on modular prefabricated panels associated with other constructive elements such as PTR columns and IPR beams; wherein the panels comprise vertical and horizontal grooves on their front and back faces; where the upper and lower edges are flat and the side edges may be flat or comprising at least one lateral edge, a protruding brow for coupling with another adjoining panel. Metal bushings configured in the same way that of the shape of the corresponding upper, lower and lateral edges, fixed by embracing the corresponding edge and defining a peripheral frame and the grooved bushings are fixed in the vertical and horizontal grooves of both sides of the panel; where said vertical and horizontal grooves of both front and back faces, are adapted to receive reinforcing rods which are projected vertically and horizontally; said rods joining together at their ends and at their intersection points, to define together a crosslinked microstructure and wherein both the front and back faces of said panels are adapted to receive at least a first layer of a high plasticity paste, water repellent, with excellent adhesion and hardness; adapted to receive and hold adhered on said front and back sides at least one layer of fiberglass mesh and finally, at least a finishing layer of the same paste to refine both sides of the panel.

0) US2012102863A – SOLOARMAR CONSTRUCTION ENGINEERING SYSTEM

49) Family number: 33546234 (US2012102863A) © PatBase

Title: SOLOARMAR CONSTRUCTION ENGINEERING SYSTEM

Priority: PA20050086310 20050421 WO2006CR00004 20060421

Family:

Publication number	Publication date	Application number	Application date
BRPI0612360 A2	20101103	BR2006PI12360	20060421
BRPI0612360 B1	20160119	BR2006PI12360	20060421
CR8348 A	20080926	CR20060008348	20060420
ES1068509 UA	20081101	ES20080001102U	20080526
ES1068509 Y1	20090201	ES20080001102U	20080526
MX2007013094 A1	20100324	MX20070013094	20060421
PA8631001 A1	20051223	PA20050086310	20050421
US2012102863 AA	20120503	US20060912303	20060421
US8955282 BB	20150217	US20060912303	20060421
WO06111106 A2	20061026	WO2006CR00004	20060421
WO06111106 A3	20061221	WO2006CR00004	20060421
WO06111106 B1	20070301	WO2006CR00004	20060421

Probable Assignee: SOLOARMAR PANAMA S A

Assignee(s):(std)**:** BARQUERO YAP LUIS ANDRES ; CHING MIXZA YAP ; LUIS ANDRES BARQUERO YAP ; YAP CHING MIXZA ; SOLOARMAR PANAMA S A

Assignee(s): SOLOARMAR PANAMA SA ; MIXZA YAP CHING

Inventor(s):(std)**:** BARQUERO YAP LUIS ANDRES ; CHING MIXZA YAP ; YAP CHING MIXZA

Inventor(s): MIXZA YAP CHING

Agent(s): WESTERMAN HATTORI DANIELS AND ADRIAN LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E02D29/00 E04B1/02 E04B1/686 E04B2/00 E04B2/02 E04B2/16 E04B2/18 E04B2/24 E04B5/04 E04C1/00 E04C1/40 E04C2/52 (Advanced/Invention); E04B2/02 (Advanced/Non–invention); E02D29/00 E04B2/14 E04C1/00 (Core/Invention)

International class (IPC 1–7): E02D29/00

CPC: E04B2/16 E04B2/24 E04B2002/0245

European class: E04B2/16 E04B2/24 P04B2/02M3A

US class: 52/396.06 52/415 52/415P 52/562 52/585.1 52/606 52/745.09 52/745.090S

Classification Explorer

Cited documents: US919272 A, US7328535 BA, US6996945 BB, US6857240 BA, US6691485 BA, US6000186 A, US599864 A, US5921046 A, US5802792 A, US5771650 A, US5252017 A, US4454699 A, US4110949 A, US3966339 A, US3609926 A, US2243339 A, US2235646 A, JP8135044 A2, JP2000234405 A2, JP2000234404 A2, JP0135044, GB2320041 A1, EP0170840 A1, CA2158771 AA, CA1258592 A1,

Forward Citations: WO15132422, US9175469, US2016244368, US2016032586, US2013247497, ES2545162,

Abstract:
Source: US2012102863A The invention relates to the Soloarmar construction system comprising an original wall

construction method, in which the cavities in the blocks are precisely aligned in the vertical axis. According to the invention, the blocks are assembled using an inner engagement device such that resistant masonry can be produced quickly and specially adapted for clay or concrete blocks using specific industrial templates, machines, nozzles and dies designed by Soloarmar. The appearance and characteristics obtained are similar to those obtained with standard masonry techniques, but with the mixture only being used to lay the first course instead of between all of the blocks.

0) SK26694A – TUBULAR STEEL COLUMN FOR ELECTRIC AND SIMILAR L...

50) Family number: 29373566 (SK26694A) © PatBase

Title: TUBULAR STEEL COLUMN FOR ELECTRIC AND SIMILAR LINES

Priority: ES19930000440 19930304

Family:

Publication number	Publication date	Application number	Application date
ES2068747 AB	19950416	ES19930000440	19930304
ES2068747 AC	19971101	ES19930000440	19930304
ES2068747 BA	19980501	ES19930000440	19930304
SK26694 A3	19941005	SK19940000266	19940304

Probable Assignee: MARCELINO JIMENEZ BELINCHON CO

Assignee(s):(std)**:** MARCELINO JIMENEZ BELINCHON CO ; JIMENEZ BELINCHON MARCELINO CO

Assignee(s): JIMENEZ BELINCHON MARCELINO CONSTRUCCIONES METALIC ; JIMENEZ BELINCHON MARCELINO CONSTRUCCIONES METALICAS S A ; MARCELINO JIMENEZ BELINCHON CONSTRUCCIONES METALIC ; MARCELINO JIMENEZ BELINCHON CONSTRUCCIONES METALICAS S A ; MARCELINO JIMENEZ BELINCHON CONSTRUCCIONES METALICAS

Inventor(s):(std)**:** JIMENEZ SANCHEZ JUAN CARLOS ; JIMENEZ SANCHEZ JUAN FRANCISCO ; SANCHEZ JUAN F ; SANCHEZ JUAN C J

International class (IPC 8–9)**:** E02D27/42 E04H12/00 E04H12/08 E04H12/10 F16L9/00 (Advanced/Invention); E02D27/32 E04H12/00 F16L9/00 (Core/Invention)

International class (IPC 1–7)**:** E02D27/42 E04H12/00 E04H12/08 E04H12/10 F16L9/00

Classification Explorer

Cited documents: WO9220888 A1, US4934114 A, ES8703957 A2, ES2010730 AF, ES2010730 A2, DE3012238 A1,

Forward Citations: ES2302585,

Abstract:
Support consisting of a series of frustopyramidal modules constructed from two profiles adopting the shape of a U with unequal branches, joined together by weld seams, which are joined via the upper part to the module or section, located at the top via the actuation of nuts and bolts with the aid of profiles, while at the bottom they are joined to the ground, via traditional pad foundations, piling or the like, with anchor bolts or steel frames for structural concrete ("ferralla") housed in the support, via a frame or collar with its holes that allow levelling of the support.

0) DE2524515A1 – VERFAHREN, BAUWEISE UND BAUELEMENTENSATZ ZUR MO...

51) Family number: 2420474 (DE2524515A1) © PatBase

Title: VERFAHREN, BAUWEISE UND BAUELEMENTENSATZ ZUR MONTAGEMAESSIGEN HERSTELLUNG VON WEITGESPANNTEN HALLEN MODULAR INDUSTRIALISED COMPONENT ASSEMBLED HANGAR STRUCTURE – COMPRISING MULTI–CHAMBER SECTIONED BARS COUPLED AS ROOF OR WALL ELEMENTS

Priority: DE19752504898 19750206 DE19752524515 19750603

Family:

Publication number	Publication date	Application number	Application date
DE2524515 A1	19761216	DE19752524515	19750603

Probable Assignee: SCHLEICH JOSEF

Assignee(s):(std)**:** SCHLEICH JOSEF

Assignee(s): SCHLEICH JOSEF DIPL ING

Inventor(s):(std)**:** SCHLEICH JOSEF DIPL ING

International class (IPC 8–9): E04B1/342 E04B7/14 (Advanced/Invention); E04B1/342 E04B7/14 (Core/Invention)

International class (IPC 1–7): E04B1/342 E04B1/347 E04B7/14

CPC: E04B1/342 E04B7/14

European class: E04B1/342 E04B7/14

Classification Explorer

Abstract:
Source: DE2524515A1 PATENT AA ei S P R Ue C ti 1)Verfahren, bauweise und Bauelementensatz zur montage maessigen Herstellung von weitgespannten Hallen, dadurch gekennzeichnet, dass ein industriell herstellbarer Pro filstab aus Stoffen wie PVC, Polyaethylen oder Gleich– wertigem mit mehrkammerigen Querschnitt und @oppelungs– elementen (4,5,6,7,8,9) mit Lamellen und Stegen (?) als liniares Dachelement zu einer Flaeche untereinander gekoppelt wird, an Strebseitenwaenden abgespannt und ueber ein Mittelloch gefuehrt wird, als]iegend oder stehend ver laufendes an die Stuetzen der seitlichen Waende (41) und der Giebelwand (57) gepresstes oder geheftetes lineares Aussen wandelement (45) die Aussen–flaeche darstelLt und als selbst tragendes und nach Bedarf zu verstaerkendesv horizental verlaufendes, zu koppelndes lineares Innenwandelement (73) eine montierbare Innenwand, mit den Einrichtungs– en element auszustattend, bildet o.
The industrialised construction of a wide span roofed hanger type buildings involves prefabricated profiled bars made of polyvinylchloride, polyethylene or similar material with lamellae and crossarms and with coupling elements, which is multi–chambered in cross–section, joined to other similar bars as a linear roof element to make up a surface area. The bars are braced against strut sidewalls and led across a centre yoke, and can be pressed or clamped horizontally or vertically on the columns of the lateral walls, and gable end wall, to make up the external surface. This serves as a self–supporting vertically or horizontally aligned, linear inside wall element, reinforced where necessary. Hollow chambers formed by lamellae and crossarms may be filled with concrete, reinforced concrete, asphalt or metal members.

0) CN202359572U – MULTI–COLUMN CONNECTING COLUMN BASE ANCHORING S...

52) Family number: 51704844 (CN202359572U) © PatBase

Title: Multi–column connecting column base anchoring system of modular steel structure

Priority: CN201120456903U 20111117

Family:

Publication number	Publication date	Application number	Application date
CN202359572 U	20120801	CN201120456903U	20111117

Probable Assignee: MORIMATSU JIANGSU OFFSHORE OIL ENGINEERING AND EQUIPMENT CO LTD

Assignee(s):(std)**:** MORIMATSU JIANGSU OFFSHORE OIL ENGINEERING AND EQUIPMENT CO LTD

Inventor(s):(std)**:** DAN GUO ; HAIFENG AO ; XIAODONG YANG ; YUNLONG SHE

Inventor(s): AO HAIFENG ; YANG XIAODONG ; SHE YUNLONG ; GUO DAN

International class (IPC 8–9): E02D27/42 E04B1/41 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN202359572U The utility model relates to a multi–column connecting column base anchoring system of a modular steel structure. The system comprises a plurality of anchor bolts and the system is characterized in that a sleeve is arranged at the outside of each of the anchor bolts, the lower end faces of the sleeves are integrally welded and fixed through an anchor plate, anchor bolt through holes corresponding to the sleeves are processed on the anchor plate, the lower ends of the anchor bolts stretch out from the anchor bolt through holes in the anchor plate, and anti–pull plates are fixed on the lower ends of the anchor bolts. During a construction process, the whole column base anchoring system is pre–buried according to the actual control dimension, the anchor bolts can move under the protection of the sleeves to successfully locate and install the column base of the modular steel structure, and fine concrete is filled in the sleeves to be fixed. The anchoring system can reinforce the anchoring force between the anchor bolts and the concrete foundation, facilitate to locate the integral pre–buried column base anchor bolts and control the installation tolerance demand of components of the modular structure, and facilitate the installation and adjustment of the modules during integral installation process.

0) EP0485317A1 – PREFABRICATED MODULAR CONSTRUCTION. FERTIGTEIL–...

53) Family number: 18408568 (EP0485317A1) © PatBase

Title: Prefabricated modular construction.

Priority: ES19900002802 19901105 ES19910000735 19910322 ES19910002223 19911008

Family:

Publication number	Publication date	Application number	Application date
AT134241 E	19960215	AT19910500123T	19911104
DE69117139 D1	19960328	DE19916017139	19911104
DE69117139 T2	19961002	DE19916017139T	19911104
EP0485317 A1	19920513	EP19910500123	19911104
EP0485317 B1	19960214	EP19910500123	19911104
ES2026762 AF	19920501	ES19900002802	19901105
ES2031424 AF	19921201	ES19910000735	19910322
ES2038543 AA	19930716	ES19910002223	19911008
ES2038543 BA	19940216	ES19910002223	19911008
MX9202048 A1	19930401	MX19920002048	19920430

Probable Assignee: GOYENECHE FLOREZ JOSE CARLOS ALCOBENDAS MADRID ES

Assignee(s):(std)**:** GOYENECHE FLOREZ JOSE CARLOS ; JOSE CARLOS GOYENECHE FLOREZ

Assignee(s): GOYENECHE FLOREZ JOSE CARLOS ALCOBENDAS MADRID ES

Inventor(s):(std)**:** FLOREZ JOSE CARLOS GOYENECHE ; GOYENECHE FLOREZ JOSE CARLOS ; JOSE CARLOS GOYENECHE FLOREZ

Inventor(s): GOYENECHE FLOREZ JOSE CARLOS ALCOBENDAS MADRID ES

Designated states: AT BE CH DE DK FR GB GR IT LI LU NL SE

International class (IPC 8–9)**:** E04B1/343 E04B1/348 E04B1/35 E04B2/72 E04B5/08 (Advanced/Invention); E04B1/19 E04H1/12 (Advanced/Non–invention); E04B1/343 E04B1/348 E04B1/35 E04B2/72 E04B5/08 (Core/Invention); E04B1/19 E04H1/12 (Core/Non–invention)

International class (IPC 1–7)**:** E04B1/343 E04B1/348 E04B1/35 E04B2/72 E04B5/8 E04H1/12

CPC: E04B1/34315 E04B1/3483 E04B2001/193 E04B2001/1984 E04B2001/199

European class: E04B1/343C E04B1/348C3 P04B1/19C1F P04B1/19G2 P04B1/19H

Classification Explorer

Cited documents: WO8302971 A1, US4106243 A, US3474582 A, US3256652 A, FR2524918 A1, FR1356117 A,

Forward Citations: WO10020025, WO0218721, NL9301136, ITBO20090108, ES2284320, ES2277467, ES2264391, ES2076867, EP0866188, EP0693595, DE102004029262,

Abstract:
Source: EP0485317A1 Prefabricated modular construction (of one or two floors), consisting of an above–ground foundation (1), a floor (2) comprised of plates, a series of vertical columns (3) resting on the foundation, and a roof (4) consisting of an open latticework and roofing panels. The side walls (5) consist of panels (35) and window frames (36). The upper enclosure includes a dropped ceiling (6). The various components and parts are connected by nuts and bolts, so that the building can be easily disassembled and all of the components can be reused.

0) IN01400MU2010A – 5TH GENERATION TOWN PLANNING FOR MIDDLE AND HIG...

54) Family number: 46714625 (IN01400MU2010A) © PatBase

Title: 5TH GENERATION TOWN PLANNING FOR MIDDLE AND HIGH INCOME GROUP POPULATIONS OF ONE MILLION

Family:

Publication number	Publication date	Application number	Application date
IN01400MU2010 A	20100903	IN2010MU01400	20100503

Probable Assignee: MAHATMA BABULAL KANHAIYALAL

Assignee(s): MAHATMA BABULAL KANHAIYALAL

Inventor(s): MAHATMA BABULAL KANHAIYALAL

International class (IPC 8–9): E03F1/00 E03F5/00 E04D13/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: IN01400MU2010A The cities of 2050 shall be well planned, eco–friendly, save on energy, work on reducing daily travel distances of people, recycle waste water, bring green revolution through plantation to absorb carbon–di–oxide, carry out rain harvesting, decompose organic and human waste and produce much needed bio–gas and electricity and heat through solar energy. Its assumed that fossil fuels shall be exhausted by that time and transportable energy shall be produced from biomass which shall be too costly. By then world population would cross 9 billion and India 1600 million in population. Projections suggest worlds 2/3 rd population living in cities and 5th Generation Town Planning has to cater for their needs In the city planning proposed here all these considerations taken care of. The residential and utility facilities have been brought closer to save on fuel. Vast roofing areas have been provided for collection of pure rain water and solar rays. There is separate drainage system for roof water, waste water (to be treated and recycled), sewage water which carries human waste to septic tanks fitted with mini–treatment plants to produce bio–gas, fertilizer and electricity. The residential plans proposed bring down housing cost to just half and makes housing very cheap. Cost of housing 1 million is just Rs. 12500 crores only and very much affordable.

0) GB1424238A – MODULAR BUILDING SYSTEMS

55) Family number: 3984076 (GB1424238A) © PatBase

Title: MODULAR BUILDING SYSTEMS

Priority: GB19730008344 19730220

Family:

Publication number	Publication date	Application number	Application date
GB1424238 A	19760211	GB19730008344	19730220

Probable Assignee: KELBISH E D

Assignee(s):(std)**:** KELBISH E D

International class (IPC 8–9)**:** E04B1/348 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/348 E04H1/04

CPC: E04B1/34861 E04B2001/34892

European class: E04B1/348C7 P04B1/348S

Classification Explorer

Forward Citations: WO04067868, US7765745, FR2978175, ES2355471, EP1722046, EP1722046,

Abstract:
Source: GB1424238A 1424238 Multi–storey buildings; concrete joints E D KELBISH 20 Feb 1973 8344/73 Headings E1A and E1W In a multi–storey building, Fig. 1, erected from prefabricated room units A, contiguous room units of the same storey are laterally offset relative to one another and superimposed room units only partially overlap one another to which latter end they are each provided with a depressed roof portion 14, in the area of the partial overlap, in depth to the thickness of the floor slab. The building is completed by preformed slabs 11, 12, 13 and each room unit is provided with built in utilities such as lifts, stairs, cupboards, baths and c. The unit may be made of re–inforced concrete or consist of cladding panels fixed to a suitable framework, see Fig. 15, (not shown). Each unit incorporates columns which may be post–tensioned for details of which to–gether with details of room layouts, service facilities, and c the Specification and remaining drawings, (not shown), should be referred to. Four corner units may be interconnected with a steel bearing plate 39 Fig. 13, having aligned prongs 40 surrounded by preformed sleeves 41 arranged as shown, the plate 39 being disposed between neoprene pads 42 and a grout filler poured into the joint through grout holes (not shown).

0) US4557099A – METHOD OF CONSTRUCTING FOLDABLE CONCRETE SLAB B...

56) Family number: 4915320 (US4557099A) © PatBase

Title: Method of constructing foldable concrete slab buildings with access slots thru ceiling slabs for installing hingeable connectors

Priority: US19830519082 19830801

Family:

Publication number	Publication date	Application number	Application date
US4557099 A	19851210	US19830519082	19830801

Probable Assignee: JOHNSON DELP W

Assignee(s):(std)**:** JOHNSON DELP W

Assignee(s): JOHNSON TRUST U

Inventor(s):(std)**:** JOHNSON DELP W

International class (IPC 8–9)**:** E04B1/344 (Advanced/Invention); E04B1/344 (Core/Invention)

International class (IPC 1–7)**:** E04B1/344 E04G21/14

CPC: E04B1/3445

European class: E04B1/344D

US class: 52/125.1 52/745 52/745.14

Classification Explorer

Cited documents: US4437272 A, US3968618 A, US3855744 A, US3828512 A, US3744196 A, US3494092 A,

Forward Citations: US9243398, US8919058, US8522506, US8499527, US8181418, US6976344, US5088263, US2012110928, US2011252718, US2004226259, US2003226326, FR2793503,

Abstract:
Source: US4557099A Method is disclosed for construction of foldable constructed concrete slab buildings, in which method wall slabs for each floor level of the proposed building, are cast on site in horizontal layers, and groups of wall slabs are cast in stacks, with hinged edges of the wall slabs arranged according to the plan of the walls in the proposed building, and modular sections of ceiling slabs are cast near by in continuous array, and access slots are cast thru said ceiling slabs, and said access slots are arranged according to locations of the walls in the proposed building, and a lifting apparatus lifts a section of a ceiling slab and places it on top of a related group of wall slabs, and a connection device is inserted downward thru each of the access slots to engage the hinge edge of a wall, and said device being of the type that permits the hinge edge of the wall slab to rotate freely under the underside of the ceiling slab, and the ceiling slab is lifted, and the walls depend downward to a vertical position forming a module, and the module so formed is lifted into position in the proposed building, and the walls are lowered onto a supporting surface, and the ceiling slab is lowered down onto the hinge edge of the wall slabs, and the assembly is secured together, and the above sequence is repeated until all the layers of ceiling slabs and layers of wall slabs have been lifted to form a completed building.

0) SU912837T – PILE FOUNDATION

57) Family number: 6484870 (SU912837T) © PatBase

Title: PILE FOUNDATION

Priority: SU19802957619 19800714

Family:

Publication number	Publication date	Application number	Application date
SU912837 A1	19820315	SU19802957619	19800714
SU912837 T	19820315	SU19802957619	19800714

Probable Assignee: DN INZH STR INST

Assignee(s):(std)**:** DN INZH STR INST ; DNEPROPETROVSK CONSTRUCTION ENGINEERING INST ; ZAPOROZH IND INST ; ZAPOROZHYE INDUSTRIAL INST

Assignee(s): ZAPOROZHSKIJ INDUSTRIALNYJ I ; DN INZH STR INSTITUT

Inventor(s):(std)**:** FEKLIN VALENTIN I ; REDKIN VIKTOR I ; TETIOR ALEKSANDR N

Inventor(s): TETIOR ALEKSANDR N SU ; REDKIN VIKTOR I SU ; FEKLIN VALENTIN I SU

International class (IPC 8–9): E02D27/12 (Advanced/Invention); E02D27/12 (Core/Invention)

International class (IPC 1–7): E02D27/12

Classification Explorer

Abstract:
Source: SU912837T 1 Invention relates to construction and can be used as the foundation of civil and industrial frame buildings with large vertical and horizontal loads in difficult geological conditions, including uneven szhimae.myh and structurally unstable soils, loess pro.sadochnyh soils, undermined territories x, in areas prone to karst phenomena m Known pile foundation consisting of generators located at the surface curvature FEB Coy and inclined at the same angle with piles broadened the fifth, and piles of every even row in protivopolozhno.m inclined direction relative piles of odd rows and broadening of each of two adjacent piles of odd and even rows are combined together to form a single broadened n that for the two piles 1. disadvantages such pile foundation are the complexity of the design and the inability pri.meneni it under frame buildings. Furthermore, this is not reliable at the foundation nri.menenii it on unevenly compressible soils and other difficult soil conditions. closest technical reshenie.m to the invention of the technical essence and the achieved result is a pile foundation, including grillage and sloping bush, united in the lower part of the general broadening of the two piles. However, this foundation is not reliable when working in Sotozhnyh groundwater conditions, and it is insufficient ne10 suscha ability. Furthermore, due to a massive apparatus grillage active foundation i.meet povyschennuyu materialoeiM bone. object of the invention – an increase of bearing capacity due to load ele.mentami pererаspredele15 no foundation. Nostavlenna tsel.dostigaets that pile foundation including grillage and sloping bush, united at the bottom 20 of the general uschireniem piles equipped with additional and complementary grillages kusta.mi inclined united at the bottom of the general broadening piles priche.m grillage combines the tops facing each other piles adjacent bushes. Fig. 1 shows a pile foundation plan; Fig. 2 – section A–A in Fig. One; Fig. 3 – section B–B in Fig. 1. Structural includes bushes inclined piles 1 united within each bush general broadening of 2 and 3, 4 gratings, each of which combines the tops facing each other piles 1 and shrubs located adjacent grid columns 5 buildings, structures. Column 5 is rigidly embedded in gratings 4. Modular pile foundation carried out as follows. With the drilling unit performed drilling deviated wells and for uschireni interlocks grid of columns and diagonals m drilled wellbore adjusted reinforcement cages (not shown) and filled with concrete hole, thereby forming a pivotal structural design consisting of piles 1 at the ends of which are made general broadening of 2 and 3. upper ends of adjacent piles 1 bushes connected concrete grillage 4, in the central part of which is set column 5. The proposed pile foundation improved static work by forming piles of spatial structural design. Pile foundation has the following advantages: reliability of the core is provided by the structural system; reduction of the material is achieved in comparison with the known pile foundations: concrete up to 15 percent and steel up to 10 percent, povyschaets bearing capacity of the foundation on the vertical and horizontal loads due to load redistribution between the foundation elements. Pile foundation of the claims, including grillage and sloping bush, united in the lower part of the general broadening of the piles, characterized in that, in order to increase the carrying capacity due to redistribution "and the load between the foundation elements, it is equipped with additional and complementary grillages kusta.mi inclined, pooled at the bottom of the general uschireniem piles, each grillage combines the tops facing each other piles adjacent bushes. Sources of information received into account in the assessment. USSR Inventor's Certificate number 549548, cl. E 02 D, 1974. 2. USSR Author's Certificate on the application of L 2697370/29–33. cl. E 02 D 7/00, 1978.

0) DE102011108873A1 – SWIMMING POOL HAS INSERT ELEMENTS THAT ARE SECU...

58) Family number: 52885361 (DE102011108873A1) © PatBase

Title: SWIMMING POOL HAS INSERT ELEMENTS THAT ARE SECURED AND ARE PROJECTED INTO AUXILIARY PLATE AND ARE BROUGHT TOGETHER SUCH THAT PLUG PORTIONS ARE HELD TOGETHER FOR PREVENTING TWISTING OF MAIN AND AUXILIARY PLATES

Priority: DE201110108873 20110728

Family:

Publication number	Publication date	Application number	Application date
DE102011108873 A1	20130131	DE201110108873	20110728

Probable Assignee: METZGER KUNSTSTOFF TECHNIK GMBH

Assignee(s):(std)**:** METZGER KUNSTSTOFF TECHNIK GMBH

Inventor(s):(std)**:** KLIMACH HORST

International class (IPC 8–9): E04H4/04 (Advanced/Invention)

CPC: E04H4/0093

Classification Explorer

Abstract:
The swimming pool has circulating frames having a bottom column that is detached with concrete behind–fills or steel reinforcement. The wall elements include two thermoplastic resin plates and an expanded polystyrene inner layer. The insert elements (14,14') are arranged for interlinking a gear–like rack in the plugs of a main plate (10). The insert elements are secured and are projected into an auxiliary plate (10') and are brought together such that the plug portions (13,13') are held together for preventing twisting of the main and auxiliary plates.

- **search:** SS2 FT=(concrete filled or in–filled) and (column or steel tube) (Results 1280)
- **search:** SS3 FT=(concrete filled or in–filled) and (column or steel tube) and reinforc* (Results 517)
- **search:** SS4 FT=(concrete filled or in–filled) and (column or steel tube) and reinforc* and (flange or tab) (Results 68)
- List: SS4 1–50 (FT=(concrete filled or in–filled) and (column or steel tube) and reinforc* and (flange or tab)) (Results 68)

0) US4722156A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

1) Family number: 29121419 (US4722156A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority:

CA19860503158 19860303
JP19850045285 19850307
JP19850193388 19850902
JP19850210456 19850924
JP19850156365 19850716
US19870107680 19871009
US19860835954 19860304
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JP19850295377 19851225
CA19860505996 19860407
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US19860899549 19860822
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CA19880568735 19880606
JP19850210454 19850924
JP19850146386 19850703
JP19860001463 19850703
US19860847495 19860403
JP19880080444 19880401
JP19850241049 19851028

Family:

Publication number	Publication date	Application number	Application date
CA1259808 A1	19890926	CA19860503158	19860303
CA1273179 A1	19900828	CA19860505996	19860407
CA1300920 A1	19920519	CA19880568735	19880606
CN1008461 B	19900620	CN19861001986	19860303
CN1008643 B	19900704	CN19861006236	19860902
CN1009291 B	19900822	CN19861003232	19860506
CN1017364 B	19920708	CN19881004690	19880730
CN1032375 A	19890412	CN19881004690	19880730
CN86101986 A	19860903	CN19861001986	19860303
CN86103232 A	19870318	CN19861003232	19860506
CN86106236 A	19870805	CN19861006236	19860902
DE3676021 D1	19910117	DE19863676021	19860822
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DE3681944 D1	19911121	DE19863681944	19860305
DE3884117 D1	19931021	DE19883884117	19880610
DE3884117 T2	19940505	DE19883884117T	19880610
EP0195552 A2	19860924	EP19860301552	19860305
EP0195552 A3	19870527	EP19860301552	19860305
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EP0214800 A2	19870318	EP19860306519	19860822
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EP0218313 A3	19890607	EP19860302470	19860403
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JP1716120 C3	19921127	JP19850156365	19850716
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JP1744819 C3	19930325	JP19850299531	19851228
JP1756773 C3	19930423	JP19860003179	19860110
JP1772241 C3	19930714	JP19850156366	19850716

JP1775799 C3	19930728	JP19850042979	19850305	
JP1775803 C3	19930728	JP19850087172	19850423	
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JP1798456 C3	19931112	JP19850087173	19850423	
JP1804113 C3	19931126	JP19850146386	19850703	
JP1809360 C3	19931210	JP19850210453	19850924	
JP1887864 C3	19941122	JP19850193388	19850902	
JP3053418 B4	19910815	JP19850210454	19850924	
JP3053420 B4	19910815	JP19850241049	19851028	
JP4001821 B4	19920114	JP19850156365	19850716	
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JP4048137 B4	19920805	JP19860003179	19860110	
JP4063936 B4	19921013	JP19850087172	19850423	
JP4063938 B4	19921013	JP19850042979	19850305	
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JP61204456 A2	19860910	JP19850045285	19850307	
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JP62072837 A2	19870403	JP19850210453	19850924	
JP62072838 A2	19870403	JP19850210454	19850924	
JP62072840 A2	19870403	JP19850210456	19850924	
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JP62160338 A2	19870716	JP19860003179	19860110	
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KR940009460 B1	19941013	KR19880007707	19880625	
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US4864797 A	19890912	US19880207163	19880615	
US5012622 A	19910507	US19900503147	19900330	

Probable Assignee: SHIMIZU CONSTRUCTION CO LTD

Assignee(s):(std)**:** SHIMIZU CONSTRUCTION CO LTD ; SHIMIZU CONSTRUCTON CO LTD ; SHUMIZU CONSTRUCTION CO LTD ; THE SHIMIZU CONSTRUCTION CO LTD

Assignee(s): THE SHIMIZU CONSTRUCTION CO LTD TOKIO TOKYO JP ; SHIMIZU CONSTRUCTION CO ; SHUMIZU CONSTRUCTION CO ; SHIMIZU CONSTR CO LTD ; SATO TAKANORI ; SHOKAWA TOMOO ; SAITO YUTAKA ; SHIOKAWA HIDEYO ; SANO TAKESHI ; WATANABE YASUSHI ; SHIMIZU CORP ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAMURA YASUKAZU

; NAKASHIMA HIDEO ; ORITO YOSHIHIRO

Inventor(s):(std): AL OSAMU HOSOKAWA ET ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA KIYOYASU ; KITAGAWA KYOYASU ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAJIMA HIDEO ; NAKAJIMA HIDEO SHIMIZU CONSTRU ; NAKAMURA KOICHI ; NAKAMURA YASUKAZU ; NAKAMURA YASUKAZU SHIMIZU CONS ; NAKASHIMA HIDEO ; ORITO YOSHIHIRO ; SAITO YUTAKA ; SANO TAKESHI ; SATO TAKANORI ; SATO TAKANORI SHIMIZU CONSTRUC ; SHIOKAWA HIDEYO ; SHIYOUKAWA NOBUO ; SHOKAWA TOMOO ; WANTANABE YASUSHI ; WATANABE YASUSHI ; WATANABE YASUSHI SHIMIZU CONST ; YUTAKA SAITO ; YOSHIHIRO ORITO ; YASUSHI WATANABE ; YASUKAZU NAKAMURA ; TOMOO SHOKAWA ; TAKESHI SANO ; TAKANORI SATO ; SHOKAWA TOMOO SHIMIZU CONSTRUC ; SHOKAWA TOMO ; SEIHO KITAGAWA ; SAITO YUTAKA SHIMIZU CONSTRUCT ; OSAMU HOSOKAWA ET AL ; OSAMU HOSOKAWA ; SHIOKAWA HIDEYO SHIMIZU CONSTR ; ORITO YOSHIHIRO SHIMIZU CONSTR ; NAKAMURA YASUKUZU ; KENICHI IKEDA ; KAZUNORI KOSHIDA ; HIDEYO SHIOKAWA ; HIDEO NAKASHIMA ; HIDEO NAKAJIMA ; ET AL ; IKEDA KENICHI SHIMIZU CONSTRUC

Inventor(s): HOSOKAWA OSAMU SUGINAMI KU TOKYO JP ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD CHUO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L... ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L CHUO K ; NAKAMURA YASUKAZU MATSUDO SHI CHIBA KEN JP ; NAKAJIMA HIDEO SHIMIZU CONSTRUCTION CO LTD ; KOSHIDA KAZUNORI HINO SHI TOKYO JP ; KITAGAWA SEIHO SHIKI SHI SAITAMA KEN JP ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI... ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI KANAGAWA KE ; SHIOKAWA HIDEYO INBA GUN CHIBA KEN JP ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD CHUO K ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI TOKYO JP ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI SHIMIZU CONSTRUCTION CO L ; SATO TAKANORI SETAGAYA KU TOKYO JP ; SANO TAKESHI TAMA SHI TOKYO JP ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD CHUO KU T ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD CHUO K ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD CHUO ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LT ; WANTANABE YASUSHI OHTA KU TOKYO JP ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO ; SATO TAKANORI SHIMIZU CONSTRUCTION CO ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO

Agent(s): MARKS AND CLERK

Designated states: DE FR GB

International class (IPC 8–9): B23K9/02 B23K9/028 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/22 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 (Advanced/Invention); B23K9/02 B23K9/028 E02D5/24 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/20 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): B23K31/06 C04C3/36 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 E04C3/36

CPC: E04B1/165 E04B1/30 E04C3/34 E02D5/30 Y02T10/7005

European class: E02D5/30 E04B1/16D E04B1/30 E04C3/34

US class: 264/256 264/262 52/263 52/721 52/721.4 52/724 52/725 52/726 52/726.1 52/726.3 52/742.14 52/834 52/848 52/98

Classification Explorer

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Forward Citations: WO9851883, WO13120138, WO13016683, WO11072451, WO10018491, WO09090301, WO08157768, WO03054321, US9677273, US9523188, US9248957, US9096999, US9067721, US8941270, US8888413, US8850750, US8484915, US8468775, US8250833, US8104242, US8056297, US7811495, US7475651, US7143554, US7107730, US6665990, US6655877, US6189286, US6141918, US6119425, US6061992, US5934035, US5678375, US5577857, US5423634, US5399169, US5285614, US5218802, US5174080, US5066834, US4864797, US2016251865, US2014000207, US2013133278, US2012114425, US2010319280, US2010071275, US2009313913, US2009038263, US2009021019, US2007261356, US2007199252, US2007175577, US2007028541, US2006174549, US2004055234, US2003029111, RU2597909, RU2496949, RU2495987, JP7139090, JP7034540, JP64062535, JP64033343, JP63223250, JP6093357, JP5915425, JP5734169, JP5033493, JP4491099, JP4304039, JP4094004, JP3941899, JP3778348, JP3013329, JP2697394, JP2575761, JP2080729, JP2014527470, JP2014015773, JP2013112973, JP2009061727, JP2005113413, JP2003138648, JP2000282578, JP1142146, JP11181957, JP1062535, JP1033343, ITTV20090161, FR2841579, FR2833632, EP0982447, EP0308038, EA10211, EA017610, EA010211, DE10261604, CN105178512, CN104790976, CN104763162, CN104405123, CN104120833, CN104006283, CN104006283, CN103967209, CN103924738, CN103924738, CN103422620, CN103422620, CN103122676, CN103122676, CN103061566, CN102677824, CN102635064, CN102635063, CN102409809, CN102322113, CN102134891, CN102011432, CN101982629, CN101806118, CN101793055, CH691691, AT502604,

Abstract:
Source: US4722156A An concrete filled steel tube column and method of constructing same. The concrete filled steel tube column includes a steel tube having an inner face; a concrete core disposed within the steel tube; and a separating layer interposed between the inner face of the steel tube and the concrete core for separating the concrete core from the inner face of the steel tube so that the steel tube may not be bonded to the concrete core. After the separating layer is formed on the inner face of the steel tube, the concrete is charged into the steel tube to form a concrete core.

0) US6041561A – SELF–CONTAINED MOLDED PRE–FABRICATED BUILDING P...

2) Family number: 23411547 (US6041561A) © PatBase

Title: Self–contained molded pre–fabricated building panel and method of making the same

Priority: US19970916626 19970822 US19990470943 19991222 WO1998US17169 19980819

Family:

Publication number	Publication date	Application number	Application date
AU199891992 A1	19990316	AU19980091992	19980819
CA2272588 AA	19990521	CA19982272588	19980819
EP0972121 A2	20000119	EP19980944455	19980819
US6041561 A	20000328	US19970916626	19970822
US6401417 BA	20020611	US19990470943	19991222
WO9910607 A2	19990304	WO1998US17169	19980819
WO9910607 A3	19990514	WO1998US17169	19980819

Probable Assignee: WAYNE LEBLANG

Assignee(s):(std)**:** LEBLANG DENNIS ; WAYNE LEBLANG

Assignee(s): DENNIS LEBLANG ; LEBLANG WAYNE

Inventor(s):(std)**:** LEBLANG DENNIS

Inventor(s): DENNIS LEBLANG

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BORDEN LADNER GERVAIS LLP

Designated states: AM AT AU AZ BE BR BY CA CH CN CY CZ DE DK EE ES FI FR GB GR HU IE IL IT JP KG KR KZ LI LT LU LV MC MD MX NL NO NZ PL PT RO RU SE SG SK TJ TM TR UA

International class (IPC 8–9): E04B1/14 E04B1/16 E04B1/76 E04B2/00 E04B5/29 E04B7/20 E04C2/06 E04C2/284 E04C2/38 E04H4/00 (Advanced/Invention); E04B1/76 (Advanced/Non–invention); E04B1/02 E04B1/16 E04B5/17 E04B7/00 E04C2/06 E04C2/38 E04H4/00 (Core/Invention); E04B1/76 (Core/Non–invention)

International class (IPC 1–7): E04B2/00 E04C2/284 E04C3/02 E04H1/00

CPC: E04B1/14 E04B1/164 E04B5/29 E04B7/20 E04B2001/7679 E04C2/06 E04C2/384 E04H4/0087

European class: E04B1/14 E04B1/16C E04B5/29 E04B7/20 E04C2/06 E04C2/38C E04H4/00D2 P04B1/76M

US class: 52/234 52/309.12 52/481.1 522/340

Classification Explorer

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Forward Citations: WO12135954, WO11077386, WO10014192, WO08007986, WO07096888, WO04001146, WO0133006, US9677268, US9663952, US9631363, US9493938, US9447557, US9399867, US9315988, US9260874, US9132461, US9074380, US9033303, US9016027, US8993462, US8991133, US8973334, US8950231, US8938926, US8904737, US8800227, US8763331, US8671637, US8656673, US8627636, US8607531, US8499526, US8495846, US8444789, US8429866, US8341907, US8297018, US8297016, US8281535, US8234833, US8201368, US8176696, US8161699, US8136248, US8109058, US8109055, US8079189, US8015771, US7998571, US7958687, US7905073, US7905062, US7805908, US7790784, US7788879, US7757454, US7713615, US7685789, US7596915, US7524555,

US7523591, US7421828, US7409800, US7313891, US7254925, US7137225, US7127858, US7040066, US7032356, US7017316, US6907708, US6907695, US6729094, US6698150, US6676102, US6622452, US6519900, US2015159372, US2015121791, US2014308509, US2014115989, US2014115988, US2013234002, US2012317902, US2012137610, US2012079784, US2012066988, US2012000593, US2011225910, US2011099940, US2011099930, US2011016800, US2011011006, US2010325988, US2010313500, US2010300012, US2010257805, US2010218446, US2010146874, US2010139177, US2010132291, US2010107539, US2010107536, US2010088975, US2010058700, US2009255196, US2009235598, US2009224134, US2009199500, US2009193733, US2009126305, US2009126304, US2009107065, US2009062431, US2009062413, US2009056257, US2008245013, US2008120942, US2008115450, US2008083180, US2007289239, US2007286688, US2007227087, US2007227086, US2007204540, US2007186497, US2007062151, US2007062144, US2006236653, US2006197257, US2006185290, US2006177279, US2006137269, US2006096236, US2006096222, US2006075701, US2006037282, US2006026925, US2005284101, US2005284071, US2005257494, US2005209414, US2005193678, US2005188635, US2005087908, US2005086900, US2005055935, US2005034418, US2005000178, US2004255534, US2004139674, US2004118069, US2004016194, US2003167722, US2003159391, RU2548262, GB2502713, FR2914664, FR2885624, EP1754842, CN103132690, CN103132690, BE1019464, AU2010334410,

Abstract:
Source: US6041561A The invention provides pre−fabricated self−contained building panels, including a panel incorporating a truss structure as a part thereof, and combinations thereof. The panels include a skeletal assembly comprising generally an array of plural structural steel channels, rigid sheeting proximate to said channels, support members adjacent the rigid sheeting, the channels supported between suitable base plates, angles for defining portions of said skeletal assembly and a forming structure as a part of said skeletal assembly, said skeletal assembly and forming structure being oriented horizontally on a planar surface. A self−hardening material, such as concrete, clay, etc. is introduced to the forming structure for embedding at least a portion of said skeletal assembly. The forming structure becomes an integral part of the completed building panel and is not disassembled therefrom. Angles are included as a part of the skeletal assembly for defining receiving chambers for self−hardening material such as concrete, clay and the like. A building truss including a pair of double−angle struts and a web−reinforcement bar threaded therealong, as well as rigid sheeting arranged to define a receiving chamber for the self−hardening material, is provided and combined as a part of the above mentioned building panels. A moulding and means to enable press−seating thereof in a wet concrete wall are disclosed as is a flexible brick facing also pressed into a wet concrete wall. The skeletal structures function as forms for forming the panel and/or the truss combined therewith. Forms also are described forming various architectural bodies and forms.

0) US2008028694A – CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM ...

3) Family number: 33691240 (US2008028694A) © PatBase

Title: CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM

Priority: CA20052506928 20050509 CA20062545924 20060505 WO2006CA00718 20060505

Family:

Publication number	Publication date	Application number	Application date
CA2506928 AA	20061109	CA20052506928	20050509
CA2506928 C	20121218	CA20052506928	20050509
CA2545924 AA	20061109	CA20062545924	20060505
US2008028694 AA	20080207	US20070797585	20070504
US2009159864 AA	20090625	US20060913742	20060505
US8132792 BB	20120313	US20060913742	20060505
WO06119613 A1	20061116	WO2006CA00718	20060505

Probable Assignee: HIGHLAND SAFETY SYSTEMS LTD

Assignee(s):(std): PERRIS KEVIN ; XILE INNOVATIONS INC ; SAFETY IN A SECOND LTD ; WASITIS ROBERT

Assignee(s): SWAROVSKI OPTIK KG ; XILE INNOVATIONS INC91 BANCHORY CRESCENTKANATAO1K2K 2V2CA ; SAFETY IN A SECOND LTD91 BANCHORY CRESCENTOTTAWAO1K2K 2V2CA ; PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA ; HIGHLAND SAFETY SYSTEMS LTD ; HIGHLAND SAFETY SYSTEMS LTDUNKNOWNUNKNOWN

Inventor(s):(std): PERRIS KEVIN ; WASITIS ROBERT

Inventor(s): PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA

Agent(s): CASSAN MACLEAN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04G21/24 E04G21/28 E04G21/32 E04G3/22 E04G5/14 E04H17/14 (Advanced/Invention); E04G21/24 E04G21/32 E04H17/14 (Core/Invention)

CPC: E04G21/28 E04G21/3261 Y10S256/06 E04G2005/148 E04G21/3223 E04G21/3233 E04G21/3238 E04G21/3276

European class: E04G21/28 E04G21/32B6 E04G21/32B6B E04G21/32F

US class: 135/115 135/119 182/113 182/82 256/59 256/59P 256/65.06 256/65.14 256/DIG.6 52/127.4

Classification Explorer

Cited documents: US6904720 BA, US6758306 BB, US6679482 BB, US6336623 BA, US6296003 BA, US6220577 BA, US6170502 BA, US6053281 A, US6039150 A, US6038829 A, US6015139 A, US6003629 A, US5896944 A, US5819474 A, US580311 A, US5711398 A, US5647451 A, US5573227 A, US5456451 A, US5431372 A, US5358025 A, US5314167 A, US5299655 A, US4979725 A, US4875549 A, US4830341 A, US4815562 A, US4798220 A, US4787475 A, US4766918 A, US4631765 A, US3995833 A, US3858364 A, US3805816 A, US3782110 A, US3776521 A, US3589682 A, US3561518 A, US3480257 A, US3480069 A, US3251399 A, US3121470 A, US2006249721 AA, US2002095898 AA, CA917973 A1, CA917972 A1, CA2393092 AA, CA2237418 AA, CA2206676 AA, CA2162526 AA, CA1299002 A1, CA1026604 A1, CA1013981 A1,

Forward Citations: WO15044631, WO09052575, WO09037393, WO09037393, USD659261, US9631396, US9441384, US9376832, US9371666, US2017138070, US2017096836, US2016194889, US2016069102, US2015315810, US2015275533, US2015176292, US2013240817, US2013153843, US2013037770, US2012074366, US2011204307, US2010171085, GB2443884, FR2939463, FR2919642, CN103526892, CN103526892, CH700844, AU2008100068, AU2007101042,

Abstract:
Source: US2008028694A A weather shield to protect workers and materials in a structure under construction from inclement weather while selectively providing stress relief to the weather shield from high winds in order to prevent damage to the weather shield is disclosed. The weather shield comprises a sheet of substantially flexible, substantially weatherproof material having a closeable opening for wind relief. The sheet protects the structure from inclement weather when the closeable opening is closed. When the closeable opening is open, it allows the passage of wind therethrough thereby tending to avoid wind damage to the weather shield. A temporary shelter for a structure under construction having a plurality of temporary guard rail supports and a weather shield is also disclosed, as well as a temporary shelter kit having a plurality of temporary guard rail supports and a weather shield.

0) CN202658946U – DOUBLE–SKIN CONCRETE–FILLED STEEL TUBE ROD OF P...

4) Family number: 52807851 (CN202658946U) © PatBase

Title: Double–skin concrete–filled steel tube rod of power transmission line

Priority: CN201220157537U 20120416

Family:

Publication number	Publication date	Application number	Application date
CN202658946 U	20130109	CN201220157537U	20120416

Probable Assignee: ZHEJIANG ELECTRIC POWER DESIGN INST

Assignee(s):(std)**:** ZHEJIANG ELECTRIC POWER DESIGN INST

Inventor(s):(std)**:** CHEN JIAMIAO ; GUO YONG ; LAO JIANMING ; LE JUNYAO ; LI JUNBIN ; LIU ZHEMING ; SHEN JIANGUO ; YE YIN

International class (IPC 8–9): E04H12/12 E04H12/24 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104047460, CN102650175,

Abstract:
Source: CN202658946U A double–skin concrete–filled steel tube rod of a power transmission line comprises double–skin concrete–filled steel tube components, a hollow steel tube component, an inner and outer wall flange, a common flange and a wire cross arm, wherein each double–skin concrete–filled steel tube component consists of an outer steel tube, an inner steel tube and middle sandwich concrete; sections of the double–skin concrete–filled steel tube components are connected with each other through the inner and outer wall flange; the double–skin concrete–filled steel tube components are connected with the hollow steel tube component through the common flange; the double–skin concrete–filled steel tube components are fixedly arranged on a reinforced concrete foundation; the inner and outer wall flange consists of an inner flange and an outer flange; and the wire cross arm is arranged on the hollow steel tube component. Compared with the conventional power transmission tower, the double–skin concrete–filled steel tube rod has the characteristics that occupied area is reduced, and tower positions are selected flexibly; compared with a common steel tube rod, the double–skin concrete–filled steel tube rod has the characteristics that compression resistance, bending resistance and local stability bearing capacity of the components are greatly improved, the application range of a transmission pole is expanded, and steel products are saved; and compared with a concrete–filled steel tube rod, the double–skin concrete–filled steel tube rod has the characteristics that the dead weight of the double–skin concrete–filled steel tube rod is reduced, the acting force of the foundation is decreased, and concrete of the foundation is saved.

0) US5706620A – THERMOPLASTIC STRUCTURAL SYSTEM AND COMPONENTS ...

5) Family number: 20251796 (US5706620A) © PatBase

Title: THERMOPLASTIC STRUCTURAL SYSTEM AND COMPONENTS THEREFOR AND METHOD OF MAKING SAME

Priority: CA19922070079 19920529 CA19922070079 19920529 NZ19930252970 19930527 EP19930912496 19930527 WO1993CA00226 19930527

Family:

Publication number	Publication date	Application number	Application date
AT187998 E	20000115	AT19930912496T	19930527
AU199453402 A1	19931230	AU19940053402	19930527
AU671323 B2	19960822	AU19940053402	19930527
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CA2070079 C	19970610	CA19922070079	19920529
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CZ9402928 A3	19950614	CZ19940002928	19930527
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DE69327398 T2	20000518	DE19936027398T	19930527
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ECSP931003 A	19940627	EC1993SP01003	19931129
EP0648301 A1	19950419	EP19930912496	19930527
EP0648301 B1	19991222	EP19930912496	19930527
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EP0848116 A3	19980812	EP19980200052	19930527
ES2141766 T3	20000401	ES19930912496T	19930527
FI107282 B	20010629	FI19940005637	19941129
FI945637 A	19950102	FI19940005637	19941129
FI945637 A0	19941129	FI19940005637	19941129
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HU215513 B	19990128	HU19940003368	19930527
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HU9403368 A0	19950228	HU19940003368	19930527
JP7507363 T2	19950810	JP19930500048T	19930527
KR100257144 B1	20000515	KR19940704325	19941129
MD1330 F2	19990930	MD19960000231	19930527
MX9303229 A1	19931101	MX19930003229	19930531
NO944518 A	19941206	NO19940004518	19941125
NO944518 A0	19941125	NO19940004518	19941125
NZ252970 A	19970822	NZ19930252970	19930527
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OA10218 A	19971007	OA19940060591	19941129
RO113751 B1	19981030	RO19940001902	19930527
RU2114958 C1	19980710	RU19940046092	19930527

RU94046092 A	19961010	RU19940046092	19930527	
RU94046092 A1	19961010	RU19940046092	19941125	
SK145194 A3	19951108	SK19940001451	19930527	
TJ232 B	19991124	TJ19960000324	19930527	
US5706620 A	19980113	US19950338605	19951122	
US6189269 BA	20010220	US19970933509	19970918	
VN371 A1	19970925	VN19940000969	19941229	
WO9324714 A1	19931209	WO1993CA00226	19930527	

Probable Assignee: ROYAL GROUP TECHNOLOGIES INC

Assignee(s):(std)**:** ROJAL BILDING SISTEMZ SI DI EHN LTD ; ROYAL BUILDING SYST CANADA ; ROYAL BUILDING SYST CANADA LTD ; ROYAL BUILDING SYSTEM CND LTD ; ROYAL BUILDING SYSTEMS ; ROJAL BILDING SISTEMZ ; ROYAL BUILDING SYSTEMS LIMITED ; ROYAL BUILDING SYSTEMS LTD ; ZEN VITTORIO DE ; ROYAL BUILDING SYSTEMS CDN ; ROYAL BUILDING SYSTEMS CND LTD

Assignee(s): ROYAL BUILDING SYSTEMS CDN LTD WOODBRIDGE ; ROYAL GROUP TECHNOLOGIES INC ; ROJAL BILDING SISTEMZ (SI–DI–EHN) LIMITED ; ROJAL BILDING SISTEMZ SI DI EHN LIMITED ; ROYAL BUILDING SYSTEMS CDN LIMITED ; ROYAL BUILDING SYSTEMS CDN LTD ; ROYAL BUILDING SYSTEMS CND LIMITED ; ROYAL BUILDING SYSTEMS (CDN) LTD ; ROYAL BUILDING SYSTEMS CDN LTD WESTON ONTARIO ; ROYAL BUILDING SYSTEM CND LIMITED ; DE ZEN VITTORIO

Inventor(s):(std)**:** ZEN VITTORIO DE ; ZEN DE VITTORIO ; VITTORIO ZEN DE ; DI ZEN VITTORIO ; DEZEN VITTORIO ; DE ZEN VITTORIO

Inventor(s): VITTORIO DEZEN ; VITTORIO DE ZEN

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; JOHNSON DOUGLAS S QC

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

International class (IPC 8–9): B29C47/02 E04B1/12 E04B1/14 E04B1/28 E04B2/00 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04B7/20 E04C2/20 E04C2/22 E04C2/34 E04C3/30 E04F17/08 E04G11/00 H02G3/04 (Advanced/Invention);
E04B1/28 E04B1/35 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04C2/20 E04C2/34 (Advanced/Non–invention);
E04B1/02 E04B1/28 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04B7/00 E04C2/10 E04C2/34 E04C3/30 E04F17/00 H02G3/04 (Core/Invention);
E04B1/35 (Core/Non–invention)

International class (IPC 1–7): B29C47/02 E04B1/00 E04B1/12 E04B1/14 E04B1/28 E04B1/38 E04B1/98 E04B2/00 E04B2/02 E04B2/14 E04B2/56 E04B2/68 E04B2/72 E04B2/86 E04C2/20 E04C2/22 E04C2/288 E04C2/36 E04C2/38 E04C2/52 E04F17/08 E04G11/00 E04H9/14 H02G3/04 H02G3/26 H02G3/28

CPC: E04B7/20 E04B1/12 E04B2/72 E04C2/20 E04C3/30 H02G3/286 E04B1/14 E04B2001/3583

European class: E04B1/12 E04B1/14 E04B2/72 E04B7/20 E04C2/20 E04C3/30 H02G3/28W P04B1/35T

US class: 52/220.1 52/220.2 52/220.5 52/270 52/309.1 52/421 52/508.1 52/581 52/582.1 52/588.1 52/718.04

Classification Explorer

Cited documents: US5784841 A, US5740648 A, US5685113 A, US5608999 A, US5479747 A, US5403631 A, US5347778 A, US5311718 A, US5277002 A, US5274975 A, US5274974 A, US5245803 A, US5014476 A, US4671038 A, US4602124 A, US4560618 A, US4557091 A, US4536360 A, US4522002 A, US4453357 A, US4099358 A, US4030259 A, US3992839 A, US3828502 A, US3802146 A, US3712005 A, US3708607 A, US3662507 A, US3657849 A, US3640039 A, US3374590 A, US3348459 A, US3279137 A, US3160245 A, US3037590 A, US2406501 A, US2326361 A, US2297887 A, US2143288 A, US1960961 A, GB2191225 A1, GB2028228 A1, EP0320745 A1, EP0118683 A2, DE7211852 U, DE7211852, CA2040717 AA, CA2000617 AA,

Forward Citations: WO9914450, WO9704185, WO9614480, WO16074049, WO14209450, WO14008536, WO13168049, WO12100843, WO10094111, WO10002233, WO09078692, WO07141618, WO07141616, WO07097988, WO07027698, WO05088020, WO04038118, WO04033809,

WO04033809, WO0065167, WO0022250, WO0011282, WO0011282, WO0011282, WO0011280, WO0011280, USD625844, USD625843, USD624210, USD624209, USD624208, USD624206, USD623768, USD623767, USD548362, USD547880, USD546970, USD506267, USD506266, USD484252, USD482462, USD482140, USD472326, USD471992, USD462458, USD461914, US9562353, US9499974, US9493938, US9458659, US9453345, US9441365, US9366029, US9359780, US9315987, US9284732, US9273479, US9273477, US9206614, US9163393, US9151037, US9103120, US9091061, US9080337, US9062450, US9010052, US8973313, US8943774, US8904737, US8844241, US8833027, US8793966, US8793953, US8782984, US8713883, US8677713, US8631616, US8607531, US8555590, US8534028, US8518308, US8458985, US8458969, US8393123, US8322115, US8322098, US8322097, US8266867, US8161711, US8132372, US8091289, US8082711, US8082700, US8065855, US8065841, US8051617, US8029258, US8020347, US8012301, US7972546, US7966782, US7930861, US7926241, US7926233, US7926227, US7905067, US7900411, US7824589, US7818936, US7797897, US7797885, US7779579, US7770339, US7770337, US7770334, US7707783, US7703248, US7690167, US7665264, US7658038, US7596924, US7559176, US7518060, US7444788, US7444782, US7421830, US7254925, US7241484, US7146773, US7127865, US6993802, US6942915, US6889475, US6854230, US6851233, US6827995, US6826884, US6802158, US6792730, US6735916, US6695534, US6658808, US6637167, US6604328, US6595497, US6591558, US6584750, US6532707, US6477817, US6460309, US6427403, US6405509, US6387533, US6342675, US6341458, US6295778, US6256937, US6247280, US6226944, US6167669, US6105315, US6085477, US6079175, US5953880, US5735090, US2016340964, US2016002911, US2015368915, US2015354234, US2015308128, US2015275531, US2015143757, US2014137961, US2014137504, US2014099160, US2014069032, US2014026507, US2013174506, US2013104994, US2013081345, US2012266559, US2011258943, US2011203205, US2011126484, US2011113718, US2011030576, US2010325991, US2010318222, US2010251657, US2010243369, US2010212241, US2010205871, US2010132285, US2010071304, US2009320401, US2009266005, US2009217617, US2009165401, US2009139171, US2009126280, US2009044461, US2009043424, US2008222991, US2008127604, US2008127584, US2007224418, US2007210237, US2007209305, US2007209295, US2007193192, US2007193144, US2007193143, US2007175146, US2007095016, US2007094992, US2007062146, US2006277852, US2006254167, US2006096232, US2006032172, US2006005497, US2005252125, US2005224690, US2005223655, US2005223653, US2005223652, US2005210828, US2005210766, US2005210765, US2005210761, US2005210760, US2005091932, US2005056822, US2005016083, US2004255525, US2004244321, US2004229062, US2004219357, US2004177581, US2004134162, US2004128937, US2004040255, US2004031230, US2004016194, US2002189190, US2001005963, RU2507348, GB2538540, GB2365031, GB2365031, GB2345704, GB2345704, GB2287968, FR2844285, ES2244331, EP2931993, EP2275612, EP1434919, EP1226317, EP1105589, EP1081305, EP1081305, EP0840829, EP0674059, EA025336, DE20315494, DE10211032, DE10211032, DE102011002843, CN102168472, AU2009201583, AU2003200063,

Abstract:
Source: US5706620A PCT No. PCT/CA93/00226 Sec. 371 Date Nov. 22, 1995 Sec. 102(e) Date Nov. 22, 1995 PCT Filed May 27, 1993 PCT Pub. No. WO93/24714 PCT Pub. Date Dec. 9, 1993The invention is for a thermoplastic structural system, structural components therefor, and method of producing same in which the structural components are extruded from a thermoplastic material containing a reinforcing constituent flowable through an extrusion die, the structural components being configured for interlocking interconnection.

0) CN104264790A – INNER SLEEVE TYPE CONCRETE–FILLED STEEL TUBE BE...

6) Family number: 58210097 (CN104264790A) © PatBase

Title: INNER SLEEVE TYPE CONCRETE–FILLED STEEL TUBE BEAM COLUMN JOINT AND PRODUCTION METHOD THEREOF

Priority: CN201410410535 20140819

Family:

Publication number	Publication date	Application number	Application date
CN104264790 A	20150107	CN201410410535	20140819
CN104264790 B	20160511	CN201410410535	20140819

Probable Assignee: JIANGSU JIANZHU INST

Assignee(s):(std)**:** JIANGSU JIANZHU INST

Inventor(s):(std)**:** KANG WENMEI ; LIU JINGJING ; QI BAO ; XIA JUNWU ; ZHANG FENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: CN204081084 U, CN202730969 U, CN202644740 U, CN201381556 Y, CN102733490 A, CN102251587 A, CN101525904 A,

Forward Citations: CN105064512,

Abstract:
Source: CN104264790A The invention discloses an inner sleeve type concrete–filled steel tube beam column joint, and belongs to the field of construction steel structures. The inner sleeve type concrete–filled steel tube beam column joint is mainly used for a connecting joint of a concrete–filled steel tube and a steel beam. The inner sleeve type concrete–filled steel tube beam column joint comprises a steel tube column, and an inner sleeve embedded in the steel tube column, wherein the upper edge peripheries in the abutment positions of the inner sleeve and the steel tube column are welded together; and the inner sleeve and the steel tube column are welded together at the upper and lower sides of a welding line between the steel tube column and a steel beam flange, so that the inner sleeve and the steel tube column are connected as a whole. The inner sleeve type concrete–filled steel tube beam column joint not only can guarantee the reinforcement of the steel tube column in the joint, but also can realize vertical penetration of the joint of the steel tube column, and has no shield when concrete is filled in the steel tube column, so that the compactness of the concrete in the steel tube column is guaranteed.

7) Family number: 33514935 (WO06109901A1) © PatBase

Title: CONCRETE COMPOSITE COLUMN AND COMPOSITE PIER

Priority: KR20050030070 20050411

Family:

Publication number	Publication date	Application number	Application date
KR100666703 B1	20070109	KR20050030070	20050411
KR20060107710 A	20061016	KR20050030070	20050411
WO06109901 A1	20061019	WO2005KR01219	20050427

Probable Assignee: B B M KOREA CO LTD

Assignee(s):(std)**:** B B M KOREA CO LTD ; LEE KI HONG

Assignee(s): B B M KOREA CO ; BBM KOREA CO ; BBM KOREA CO LTD

Inventor(s):(std)**:** LEE KI HONG

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Advanced/Non–invention); E01D19/02 (Core/Invention)

CPC: E01D19/02 E01D2101/268 E01D22/00

European class: E01D19/02 P01D101/26H

Classification Explorer

Cited documents: US5339594 A, KR200286012 Y1, JP9158116 A2,

Forward Citations: KR101177426, KR101007908, KR100933265, KR100864220, KR100864220, KR100786900, CN102493601,

Abstract:
Provided are a concrete–filled steel tube (CFT) column and a concrete composite pier using the same, capable of eliminating a work required to arrange reinforcements as well as remarkably improving a adhesive strength between the concrete and the steel tube, thereby maximizing a combined action of the concrete and the steel tube and improving outer appearance. The CFT column includes a steel tube; at least one armature attached to an inner surface and in a lengthwise direction of the steel tube and having a coupling plate, a web and at least one concrete–gripping hole; and concrete poured into a space defined by the steel tube and the armature.

0) US4696137A – BEAM–COLUMN JUNCTION

8) Family number: 2872985 (US4696137A) © PatBase

Title: Beam–column junction

Priority: CA19860500891 19860131 EP19860100499 19860116 LU19850085753 19850201

Family:

Publication number	Publication date	Application number	Application date
AT68228 E	19911015	AT19860100499T	19860116
CA1273811 A1	19900911	CA19860500891	19860131
DE3681800 D1	19911114	DE19863681800	19860116
EP0189785 A2	19860806	EP19860100499	19860116
EP0189785 A3	19890322	EP19860100499	19860116
EP0189785 B1	19911009	EP19860100499	19860116
LU85753 A	19860902	LU19850085753	19850201
US4696137 A	19870929	US19860823598	19860129

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** SCHLEICH JEAN BAPTISTE

Inventor(s): SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class(IPC 8–9)**:** E04B1/18 E04B1/24 E04C3/293 E04C3/34 (Advanced/Invention); E04B1/24 E04C3/29 E04C3/30 (Core/Invention)

International class(IPC 1–7)**:** E04B1/00 E04B1/18 E04B1/24 E04C3/34

CPC: E04B1/2403 E04B2001/2415 E04B2001/2448 E04B2001/2469 E04B2001/2484 E04C3/293 E04C3/34

European class: E04B1/24B E04C3/293 E04C3/34 P04B1/24B4 P04B1/24B40 P04B1/24C2 P04B1/24E

US class: 52/251 52/334 52/702 52/733 52/737.2 52/838

Classification Explorer

Cited documents: US4409765 A, US1476572 A, FR1475696 A, EP0133565 A2, EP0123642 A2, DK39263 A, DE2829864 A1, DE2658020 B2, DE2658020 A1, DE2408134 A1, CA886291 A, AU86570 A1,

Forward Citations: WO12105858, WO0015920, US9206594, US8875475, US8782991, US8733033, US8555593, US8516761, US8166717, US6679017, US2011094182, US2010281808, US2010031605, US2010005732, US2009320387, US2005066609, US2004250484, JP63308131, EP0292449, EP0290884, CN103266720,

Abstract:
Source: US4696137A A beam support joint for a column and a beam, which are each constructed from concrete and at least one metal section having a pair of flanges joined by a web and forming at least one recess of the metal section which is filled with concrete and the outer surfaces of the flanges of the metal section are not covered with concrete and are otherwise free. An upper support strap is mounted on an upper flange of the beam, and is attached to the column and the beam. The upper support strap and the webs of both the beam and the column all lie substantially in the same plane. On a flange of the column a lower support plate is advantageously welded which has a width corresponding approximately to the flange of the column. This lower support plate has at least one recess on its upper side which suitably engages at leat one projection provided on a lower flange of the beam. Alternatively the lower support plate can be dispensed with and the upper support strap can be mounted on a cover plate provided on the column with at least one tight fitting screw.

9) Family number: 40838933 (US2007266651A) © PatBase

Title: MODULAR PANEL ASSEMBLIES FOR BUILDING FOUNDATIONS

Priority: US20060504621 20060816 US20060801568P 20060518 US20070804621 20070518 US20090422680 20090413 US20070904012P 20070228

Family:

Publication number	Publication date	Application number	Application date
CA2671646 AA	20101013	CA20092671646	20090710
US2007266651 AA	20071122	US20070804621	20070518
US2009193734 AA	20090806	US20090422680	20090413
US2012240499 A9	20120927	US20090422680	20090413
US8186115 BB	20120529	US20070804621	20070518
US8307608 BB	20121113	US20090422680	20090413

Probable Assignee: BRADLEY WALTER B

Assignee(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Inventor(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Agent(s): JOHN J MARSHALL C O PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; JOHN J MARSHALL PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; DRINKER BIDDLE AND REATH LLP

International class (IPC 8–9): E02D27/00 E04B1/00 E04B2/38 E04B2/56 E04C2/20 E04C2/34 E04C3/04 (Advanced/Invention); E02D27/00 E04B2/56 E04C2/10 E04C3/04 (Core/Invention)

CPC: E02D27/00 E04B1/0015 B67D7/0272 E04B1/08

European class: B67D7/02E6B E02D27/00 E04B1/00B1 E04B1/08

US class: 52/106 52/126.6 52/169.6 52/169.600P 52/270 52/270P 52/284 52/309.1 52/309.100S 52/481.1 52/690 52/690S 52/782.1 52/792.1

Classification Explorer

Cited documents: US7596923 BA, US7318300 BA, US7246779 BB, US6959521 BA, US6550213 BA, US6484460 BB, US6454050 BB, US6415558 BA, US6415557 BA, US6398778 BA, US6389778 BA, US6385937 BA, US6367764 BA, US6354050 BA, US6263636 BA, US6205725 BA, US6199336 BA, US6148583 A, US6125608 A, US6120723 A, US6076320 A, US5830378 A, US5787651 A, US5592796 A, US5588271 A, US5564235 A, US5555698 A, US5487241 A, US5479749 A, US5287675 A, US4876833 A, US4706422 A, US4599835 A, US4332116 A, US4274242 A, US4235054 A, US4100705 A, US4075810 A, US4041667 A, US3611653 A, US3596424 A, US3236012 A, US3208410 A, US2006179782 AA, US2004134162 AA, US2003066249 AA, US2001047637 AA,

Forward Citations: US9657490, US9618211, US9458618, US9394714, US9090497, US8769908, US8683759, US8327597, US8327592, US2015211745, US2015093535, US2013319937, US2012317902, US2011282633, US2011179731, US2011173899, US2011072734, US2007028542, AT517545,

Abstract:
Source: US2007266651A A perimeter foundation wall is constructed from a plurality of modular wall panels. The wall panels include a generally planar exterior wall surface, a side flange on both vertically extending sides of the panel, a top cap, and a base pan. The wall may also include vertical reinforcing studs and brackets on an inner surface of the wall panels. The wall may also have leveling assemblies including threaded rods passing through the base pan.

0) CN103015534A – LATERAL CONNECTION NODE OF CONCRETE–FILLED RECT...

10) Family number: 53481676 (CN103015534A) © PatBase

Title: LATERAL CONNECTION NODE OF CONCRETE–FILLED RECTANGULAR STEEL TUBE COLUMN AND STEEL BEAMS

Priority: CN201210544026 20121214

Family:

Publication number	Publication date	Application number	Application date
CN103015534 A	20130403	CN201210544026	20121214

Probable Assignee: JIN TIANDE

Assignee(s):(std)**:** JIN TIANDE ; TONG GENSHU ; YE ZAILI

Inventor(s):(std)**:** JIN TIANDE ; TONG GENSHU ; YE ZAILI

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: WO04076761 A1, CN202925689 U, CN202139692 U, CN201901947 U, CN101967855 A, CN101949173 A,

Forward Citations: CN105002982, CN104929253, CN104775525, CN104278799, CN104196128,

Abstract:
Source: CN103015534A The invention provides a lateral connection node of a concrete–filled rectangular steel tube column and steel beams. The lateral connection node of the concrete–filled rectangular steel tube column and the steel beams comprises the concrete–filled rectangular steel tube column and the steel beams, wherein vertical connection plates are arranged on the four sides of the concrete–filled rectangular steel tube column; the vertical connection plates and the concrete–filled rectangular steel tube column are connected in a welding way; each vertical connection plate stretches out to form two side plates towards the direction of reinforcements; the side plates are located on two sides of each steel beam and arranged in a manner to be parallel with a web plate of each steel beam; a horizontal connection plate extends on the flange of an end of each steel beam close to the concrete–filled rectangular steel tube column towards the direction of the side plates; each steel beam is welded with the side plates through the horizontal connection plate; and the web plate of each steel beam is welded with the concrete–filled rectangular steel tube column through the utilization of twin fillet welding seams. With the adoption of the lateral connection node of the concrete–filled rectangular steel tube column and the steel beams, as the flange of each steel beam is widened in a node area through the horizontal connection plate, the design rule of enhancing the bearing capacity of the node higher than the bearing capacity of components is realized; the vertical connection plates of the node cause the strength of the node area to be enhanced, so that the shearing strength of the node area is easily met; in addition, the force transmission of the node is direct and no clapboard is necessarily arranged; and therefore, the construction and the manufacture are facilitated.

0) CN203947841U – JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COL...

11) Family number: 57827781 (CN203947841U) © PatBase

Title:	JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COLUMN OF CONCRETE FILLED STEEL TUBE FRAME
Priority:	CN201420374248U 20140708

Family:

Publication number	Publication date	Application number	Application date
CN203947841 U	20141119	CN201420374248U	20140708

Probable Assignee:	GANSU ELECTRIC POWER DESIGN INST
Assignee(s):(std)	GANSU ELECTRIC POWER DESIGN INST
Inventor(s):(std)	CHENG MING ; WANG SHUPING ; XI ZENGHONG ; YANG JUNFEN ; ZHANG GUANGPING
International class (IPC 8–9)	E04H12/12 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203947841U The utility model discloses a joint of a herringbone column and a ground wire column of a concrete filled steel tube frame. The joint of the herringbone column and the ground wire column of the concrete filled steel tube frame comprises a herringbone frame with the connected top, and a top plate is arranged on the top of the herringbone frame. The joint is characterized in that the herringbone frame is composed of two concrete filled steel tubular columns, concrete is poured into steel tubes according to the structure of the concrete filled steel tubular columns, a connecting plate is arranged at the top abutting joint of the first concrete filled steel tubular column and the second concrete filled steel tubular column, a plurality of reinforcement plates are arranged on the outer walls of the upper portions of the first and second concrete filled steel tubular columns, the top plate is welded to the first concrete filled steel tubular column, the second concrete filled steel tubular column, the connecting plate and the reinforcement plates, the steel tubes are welded to the top plate, and the tops of the steel tubes are provided with flange plates used for being connected with the ground wire column. Corrosion of the inner walls of the steel tubes is prevented after the steel tubes are filled with the concrete, and component durability is improved. The steel tubes are arranged on the top plate, and the flange plates are connected with the ground wire column, so that the construction period can be shortened, and comprehensive economic benefits are improved.

0) US2006236628A – NEW STEEL STUD LOAD–BEARING AND/OR PERIMETER WA...

12) Family number: 33546647 (US2006236628A) © PatBase

Title: NEW STEEL STUD LOAD–BEARING AND/OR PERIMETER WALL SYSTEMS, A NEW COMPOSITE STEEL BEAM SYSTEM SUPPORTING CONCRETE–TOPPED FLOOR ON OPEN WEB STEEL JOISTS, A NEW VEHICLE–PROOF PERIMETER METAL STUD WALL FOR BUILDINGS, AND A NEW SHEAR–CONNECTION–READY OPEN WEB STEEL JOIST

Priority: US20050112911 20050425 US20070772177 20070630 US20090505478 20090718

Family:

Publication number	Publication date	Application number	Application date
US2006236628 AA	20061026	US20050112911	20050425
US2008000177 AA	20080103	US20070772177	20070630
US2009272063 AA	20091105	US20090505478	20090718
US7562500 BB	20090721	US20050112911	20050425

Probable Assignee: SIU WILFRED WING CHOW

Assignee(s):(std)**:** SIU WILFRED W ; SIU WILFRED WING CHOW

Inventor(s):(std)**:** SIU WILFRED W ; SIU WILFRED WING CHOW

Inventor(s): SIU WILFRED

Agent(s): DONALD V TOMKINS C O TOMKINS LAW OFFICE; DONALD V

International class (IPC 8–9): E04B1/00 E04B1/20 E04B1/38 E04C3/04 E04H12/02 (Advanced/Invention); E04B1/00 E04B1/20 E04B1/38 E04C3/04 E04H12/00 (Core/Invention)

CPC: E04B1/24 E04B5/10 E04B5/40 E04B2001/2481 E04B2001/2484 E04C3/083 E04C5/0645 E04C5/065

European class: E04B1/24 E04B5/10 E04B5/40 E04C3/08B E04C5/065 E04C5/06D P04B1/24D P04B1/24E

US class: 52/236.3 52/236.6 52/236.7 52/241 52/284 52/319 52/319P 52/650.3 52/655.1 52/690

Classification Explorer

Cited documents: US7571576 BB, US7562500 BB, US7389620 BA, US7143554 BB, US6983569 BA, US6389778 BA, US6318044 BA, US6298617 BA, US6293057 BA, US6276094 BA, US6263628 BA, US6128878 A, US6058668 A, US6050045 A, US5983577 A, US5941035 A, US5881516 A, US5822940 A, US5787665 A, US5782047 A, US5669194 A, US5544464 A, US5479749 A, US5291717 A, US5113631 A, US4894967 A, US4809476 A, US4805364 A, US4741138 A, US4653237 A, US4597233 A, US4486993 A, US4432178 A, US4295310 A, US4259822 A, US4189883 A, US4186535 A, US4182080 A, US4078347 A, US4056908 A, US3952462 A, US3945168 A, US3683580 A, US3680271 A, US3568388 A, US3307304 A, US2641449 A, US2211384 A, US2186310 A, US2009188187 AA, US2004107660 AA, US1958473 A, GB2157336 A1, CA2441737 AA, CA1251056 A1, CA1186910 A1,

Forward Citations: WO08116269, USD757521, USD674508, USD672885, USD672884, USD672883, USD672477, USD672061, USD672060, USD672059, USD672058, USD672057, USD666313, USD665926, USD665925, USD665924, USD665923, USD665922, USD665921, US9677263, US9518401, US9267527, US9243404, US9200442, US9004835, US8984831, US8950143, US8782993, US8695301, US8661754, US8636456, US8621806, US8529178, US8245480, US8230657, US8186122, US7765757, US7743446, US7681368, US2016208475, US2015167289, US2015096244, US2012247055, US2011154586, US2011113714, US2011041451, US2010275544, US2010226837, US2010192507, US2010043329, US2009193755, US2009188193, US2009188192, US2008184660, US2008110119, US2008000177, CN105297983, CN104088369, CN103410218, CN103206012, AU2008232318,

Abstract:
Source: US2006236628A This invention reveals new metal stud perimeter wall and load–bearing wall systems that support, without eccentricity, concrete–topped floors on open–web–steel–joists, deep–profiled composite metal decks and channel–shaped joists and allow upper floor framing to complete before floor concreting; a new composite steel beam for open–web–steel–joist support; a new shear–connection–ready open–web–steel joist; and a new perimeter metal stud wall system that incorporates an in–wall wheel–stopper. The new wall systems incorporate web–perforated studs, and/or web–perforated tracks doubling as concrete closures, and other

concrete closure devices. The composite beam incorporates shear connectors protruding through a special web–perforated track fitted with a load–bearing block and cutouts in the legs for open–web–steel–joist support. Unlike composite open–web–steel joists supporting simple–span metal decks, the new shear–connection–ready joist incorporates a flat–topped chord to allow continuous steel deck layout and field–installed shear connectors. The new joists are best used with medium–depth wide–fluted composite floor deck for maximum system efficiency.

13) Family number: 42111207 (US2008196341A) © PatBase

Title: MODULAR COLUMN SYSTEM USING INTERNALLY CONFINED HOLLOW COLUMN UNIT AND METHOD OF CONSTRUCTING THE SAME

Priority: US20070675583 20070215

Family:

Publication number	Publication date	Application number	Application date
US2008196341 AA	20080821	US20070675583	20070215

Probable Assignee: KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION

Assignee(s):(std)**:** UNIV KOREA IND AND ACAD COOP

Assignee(s): KOREA UNIV IND ; KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION ; KOREA UNIV IND AND ACADEMY COOPERATIONFOUNDATION ; KOREA UNIVERSITY INDUSTRY AND ACADEMY COOPERATIONFOUNDATION

Inventor(s):(std)**:** HAN SANG YUN ; HAN TAEK HEE ; KANG YOUNG JONG

Agent(s): INTELLECTUAL PROPERTY LAW GROUP LLP

International class (IPC 8–9): E02D27/00 E04B1/00 (Advanced/Invention); E02D27/00 E04B1/00 (Core/Invention)

CPC: E01D19/02 E01D2101/24 E01D2101/268 E01D2101/40 E04C3/34

European class: E01D19/02 E04C3/34 P01D101/24 P01D101/26H P01D101/40

US class: 52/292 52/745.18

Classification Explorer

Cited documents: US7243409 BB, US6123485 A, US5870789 A, US4836717 A, US4497597 A, US419998 A, US2005229532 AA,

Forward Citations: US9677273, US8484915, CN103541547, CN103541547, CN103243640, CN103243640, CN102966185, CN102966185, CN102041778, CN101936852,

Abstract:
Source: US2008196341A A modular column system and a method of constructing the same are constructed by stacking at least one precast unit between a foundation section and a coping section. The precast unit makes use of an internally confined hollow column unit fabricated in advance, and joint sections between the precast units are firmly formed. Thereby, the modular column system can realize a short construction period and economy because reinforcement bars and forms are not used, as well as high resistance to bending moment and reduction in cross section and self–weight of the precast unit, and thus the modular column system can provide easier and more economical assembly, and prevent brittle fracture of the joint section between the precast units.

0) CN102102643A – LATTICE HOLLOW–CONCRETE–FILLED STEEL TUBE TOWER...

14) Family number: 49135614 (CN102102643A) © PatBase

Title: LATTICE HOLLOW–CONCRETE–FILLED STEEL TUBE TOWER FOR WIND GENERATING SET

Priority: CN201110080251 20110331

Family:

Publication number	Publication date	Application number	Application date
CN102102643 A	20110622	CN201110080251	20110331

Probable Assignee: HARBIN INST OF TECHNOLOGY

Assignee(s):(std)**:** HARBIN INST OF TECHNOLOGY

Assignee(s): HARBIN INSTITUTE OF TECHNOLOGY

Inventor(s):(std)**:** CHANGYONG LIU ; CHENGHUA WANG ; JIE CHEN ; QINGHE WANG ; YUYIN WANG

Inventor(s): WANG CHENGHUA ; WANG QINGHE ; WANG YUYIN ; LIU CHANGYONG ; CHEN JIE

International class (IPC 8–9): F03D11/00 F03D11/04 F03D13/20 (Advanced/Invention)

CPC: Y02P70/523 Y02E10/72

European class: Y02E10/72 Y02E10/72N

Classification Explorer

Cited documents: WO09156827 A1, CN2665289 Y, CN2077469 U, CN201016232 Y, CN101225717 A,

Forward Citations: CN104929316, CN104929316, CN103061566,

Abstract:
Source: CN102102643A The invention discloses a lattice hollow–concrete–filled steel tube tower for a wind generating set, relates to a wind driven generator tower, and aims to solve the problems of limited applicable height of a steel tube tower drum and large steel consumption and high manufacturing cost of a lattice steel tube tower. In the tower, at least three hollow–concrete–filled steel tube column branch sections of the same length are connected to form a lattice hollow–concrete–filled steel tube tower section by welding by using a plurality of steel connecting rods; each hollow–concrete–filled steel tube column branch section comprises a steel tube, a concrete layer, two connecting flanges and a plurality of steel plate reinforcing ribs; end faces of the two ends of the steel tube are welded with one connecting flange; the steel plate reinforcing rib 5 is welded between an inner end face of each connecting flange 4 and a side wall on the end part of the steel tube; and the concrete layer is lined on the inner wall of the steel tube. The tower is a wind driven generator tower which has a simple structure, is convenient to produce, transport, hang and mount, has small steel consumption, saves steel, is low in manufacturing cost and has high fire resistance and shock resistance.

0) CN203654473U – CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED...

15) Family number: 56689136 (CN203654473U) © PatBase

Title: CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE COMPOSITE BEAM

Priority: CN201320778831U 20131129

Family:

Publication number	Publication date	Application number	Application date
CN203654473 U	20140618	CN201320778831U	20131129

Probable Assignee: HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s):(std)**:** HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s): SHUN STEEL MFG CO LTD HUBEI ; HUBEI HONGSHUN STEEL STRUCTURE MFG CO

Inventor(s):(std)**:** WANG SHAOZHONG ; WU XIAOYIN ; ZHOU FAN ; ZHOU PENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105569192, CN104563305, CN104294917, CN104278749,

Abstract:
Source: CN203654473U The utility model relates to a connecting joint of a rectangular concrete filled steel tubular column and a steel reinforced concrete composite beam, and belongs to the field of building structures. The connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam is composed of the rectangular concrete filled steel tubular column, the steel reinforced concrete composite beam, an H–type steel connector, beam stiffening plates and column connecting plates. The H–type steel connector is connected between the end face of the steel reinforced concrete composite beam and the corresponding segment column face of the rectangular concrete filled steel tubular column, the stretching ends of steel bars to be cast on the upper portion of the steel reinforced concrete composite beam and the stretching ends of steel bars at the bottom of a steel–reinforced concrete precast beam of the lower portion of the steel reinforced concrete composite beam are in lap joint with the outer edges of an upper flange plate and a lower flange plate of the H–type steel connector and the outer edges of an upper connecting plate and a lower connection plate of the corresponding segment of the rectangular concrete filled steel tubular column respectively, and integrated onsite cast forming of the beam, the column and the joint structure of the beam and the column is completed on site. According to the connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam, the joint mode of internal separating plate outer stretching connection is adopted, when earthquake acting force is received, plastic deformation happens to the beam ends and a joint area, plastic hinges are formed, and the connecting joint is good in force transmission clear performance and conforms to the strong column and weak beam failure mode in earthquake resistant design codes.

0) CN103088914A – NODE STRUCTURE FOR CONNECTION BETWEEN CONCRETE ...

16) Family number: 53792039 (CN103088914A) © PatBase

Title: NODE STRUCTURE FOR CONNECTION BETWEEN CONCRETE FILLED STEEL TUBE SPECIAL–SHAPED COLUMN AND STEEL GIRDER

Priority: CN201110342922 20111103

Family:

Publication number	Publication date	Application number	Application date
CN103088914 A	20130508	CN201110342922	20111103

Probable Assignee: UNIV YANGTZE

Assignee(s):(std)**:** UNIV YANGTZE ; YANGTZE UNIV

Inventor(s):(std)**:** DU GUOFENG ; MA CHAO ; SONG XIN

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2009280971 A2, CN2693848 Y, CN2391933 Y, CN101525904 A,

Forward Citations: CN104264794, CN104196128, CN103590512,

Abstract:
Source: CN103088914A The invention relates to a node structure for connection between a concrete filled steel tube special–shaped column and a steel girder. The node structure is characterized in that: a special–shaped column (1) is formed by welding a rectangular steel tube with a groove type steel tube; the inner empty shapes of both an upper reinforcing ring (2) and a lower reinforcing ring (3) are as same as the outer shape of the special–shaped column (1); the upper reinforcing ring (2) and the lower reinforcing ring (3) are hooped on the special–shaped column (1) and are connected in a surrounding welding manner; the upper end of a vertical rib plate (6) is in welded connection to the upper reinforcing ring (2) while the lower end of the vertical rib plate (6) is in welded connection to the lower reinforcing ring (3); the left side of the vertical rib plate (6) is in welded connection to a steel tube wall of the special–shaped column (1) while the right side of the vertical rib plate (6) is in welded connection to a web plate of a transversely H–shaped steel girder (4) through a splicing plate (5) and by utilizing a friction type high–strength bolt (7); the upper reinforcing ring (2) is in welded connection to an upper flange plate of the transversely H–shaped steel girder (4); the lower reinforcing ring (3) is in welded connection with the lower flange plate of the transversely H–shaped steel girder (4). The node structure for connection between the concrete filled steel tube special–shaped column and the steel girder has the characteristics of good mechanical property, great node rigidity, high bearing force, convenience in construction and low cost.

0) US2005082880A – HIGH ROOF STRUCTURE OF A VEHICLE

17) Family number: 31842700 (US2005082880A) © PatBase

Title: HIGH ROOF STRUCTURE OF A VEHICLE

Priority: EP20020761267 20020808 KR20030072729 20031017 US20010311138P 20010808 US20010312955P 20010815 US20010312946P 20010815 US20010313054P 20010816 US20010314622P 20010823 US20010318129P 20010907 US20020051612 20020116 WO2002US24994 20040120 US20020150355 20020517 WO2002US24994 20020808

Family:

Publication number	Publication date	Application number	Application date
CN100453383 C	20090121	CN200310125185	20031230
CN1608924 A	20050427	CN200310125185	20031230
DE10361717 A1	20050519	DE20031061717	20031230
DE60247963 D1	20160525	DE20026047963	20020808
EP2378506 A2	20111019	EP20110163230	20020808
EP2378506 A3	20140521	EP20110163230	20020808
IN00067DN2004 A	20050603	IN2004DN00067	20040108
IN01530DE2003 A	20050603	IN2003DE01530	20031210
IN01627DE2003 A	20050603	IN2003DE01627	20031229
IN217533 B	20080905	IN2003DE01530	20031210
IN217740 B	20080905	IN2003DE01627	20031229
IN218342 B	20080530	IN2004DN00067	20040108
JP2005119633 A2	20050512	JP20030420228	20031217
JP3823228 B2	20060920	JP20030420228	20031217
KR100923053 B1	20091022	KR20047000983	20020808
KR20040019353 A	20040305	KR20047000983	20020808
KR20050037265 A	20050421	KR20030072729	20031017
US2005082880 AA	20050421	US20030751048	20031231
US6983983 BB	20060110	US20030751048	20031231

Probable Assignee: HYUNDAI MOTOR CO

Assignee(s):(std)**:** HYUNDAI MOTOR CO LTD ; HYUNDAI MOTOR CO SEOUL SO ; LEE BUM J ; HYUNDAI MOTOR COMPANY SEOUL SO ; SAMSUNG DISPLAY CO LTD ; SAMSUNG ELECTRONICS CO LTD

Assignee(s): WANI BASHIR AHMAD PRINCIPAL RTI ; WANI BASHIR AHMAD PRINCIPAL RTI MIR SAJAD AHMAD ; SAMSUNG ELECTRONICS CO ; SAMSUNG DISPLAY CO LTD YONGIN SI ; MIR SAJAD AHMAD ; SAMSUNG DISPLAY CO ; HYUNDAI MOTOR COMPANY ; HYUNDAI MOTOR COMPANY SEOUL SOUL ; HYUNDAI MOTOR CO SEOUL SOUL ; CLAIRVOYANTE LABORATORIES ; CLAIRVOYANTE LABORATORIES INC ; HYUNDAI MOTOR CO

Inventor(s):(std)**:** BROWN ELLIOT CANDICE HELLEN ; CREDELLE THOMAS LLOYD ; HIGGINS PAUL ; LEE BUM J ; LEE BUM JAE ; JAE LEE BUM

Inventor(s): LEE BUM ; MIR SAJAD AHMAD ; WANI BASHIR AHMAD PRINCIPAL RTI ; HIGGINS PAUL SEBASTOPOL ; CREDELLE THOMAS LLOYD MORGAN HILL ; ELLIOTT CANDICE HELLEN BROWN ; ELLIOTT CANDICE HELLEN BROWN VALLEJO

Agent(s): WIDDOWSON NICHOLAS EDWARD; BOULT WADE TENNANT; MORGAN LEWIS AND BOCKIUS LLP

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

International class (IPC 8–9): B60J7/10 B60P3/34 B62D25/06 B62D29/04 G06T15/50 G09G3/20 G09G3/36 G09G5/00 G09G5/02 H04N5/202 (Advanced/Invention); G06T15/50 (Advanced/Non–invention); B60J7/08 B60P3/32 B62D25/06 B62D29/00 G06T15/50 (Core/Invention)

International class (IPC 1–7): B62D25/06 B62D29/04 G06T15/50 G09G3/20 G09G5/02

CPC: B62D25/06 B62D29/043 G09G2340/0492 G09G2340/0457 G09G2340/0421 G09G2340/0414 G09G2340/0407 G09G2320/0276 G09G2300/0452 G09G5/02 G09G5/006 G09G5/005 G09G3/2003 G09G3/20

European class: B62D25/06 B62D29/04B G09G3/20 G09G3/20C G09G5/00T2 G09G5/00T4 G09G5/02 S09G300/04P4 S09G320/02P2 S09G340/04C S09G340/04C2 S09G340/04C4 S09G340/04G S09G340/04P S09G5/00T4

US class: 296/201 296/210 296/26.04

Classification Explorer

Cited documents: WO0067196 A1, WO0021067 A1, US6188385 BA, US5696840 A, US5541653 A, US5398066 A, US5341153 A, US5161202 A, US5104177 A, US5029936 A, US4837914 A, US3971065 A, US31812901 P, US31462201 P, US31305401 P, US31295501 P, US31294601 P, US31113801 P, US29014301 P, US29008701 P, US29008601 P, US15035502, JP9254815 A2, JP8038483 A2, JP7242182, JP63240477 A2, JP63240477, JP63161023 U, JP55127664 U, JP2000033820 A2, JP1996038483, JP11020736 A2, EP0899604 A2,

Forward Citations: US9327768, US9248864, US8820824, US8443441, US7641272, US2016039468, US2015137563, US2009206635, KR101746491, KR101332495, KR100844644, JP5498866, JP2012001142, JP2007168699, FR2919260, EP2019024, DE102015213520, CN103661619, CN102822039, CN102822039, CN101353057,

Abstract:
Source: US2005082880A A high roof structure of a vehicle includes a high roof formed from a RFP (Fiber Reinforced Plastics) with good durability, forming properties, and a reinforced structure is integrally installed using a predetermined adhering member and engaging member. No welding is needed. An indoor height of a vehicle is increased to a desired size and a desired indoor floor space index is obtained.

0) KR20040048688A – REINFORCING STRUCTURE FOR JOINT BETWEEN CONCRET...

18) Family number: 33846429 (KR20040048688A) © PatBase

Title: REINFORCING STRUCTURE FOR JOINT BETWEEN CONCRETE FILLED STEEL TUBE COLUMN AND STEEL SKELETON BEAM

Priority: KR20020076637 20021204

Family:

Publication number	Publication date	Application number	Application date
KR100716453 B1	20070510	KR20020076637	20021204
KR20040048688 A	20040610	KR20020076637	20021204

Probable Assignee: SAMSUNG CORP

Assignee(s):(std)**:** SAMSUNG C AND T CORP ; SAMSUNG CORP

Inventor(s):(std)**:** CHOI SEONG MO ; HAN HUI CHEOL ; KIM YO SUK ; OH JEONG GEUN ; KIM JIN HO ; SON SANG HYEON ; WANG IN SU ; YUM GYEONG SU

International class (IPC 8–9): E04B1/30 (Advanced/Invention); E04B1/30 (Advanced/Non–invention); E04B1/30 (Core/Invention)

International class (IPC 1–7): E04B1/30

Classification Explorer

Cited documents: JP9291599 A2,

Forward Citations: KR101428322, KR101159041,

Abstract:
Source: KR20040048688A PURPOSE: A reinforcing structure for a joint between a concrete filled steel tube column and a steel skeleton beam is provided to fill up a steel tube with concrete tightly, to fill up concrete easily and to realize a reasonable structure and an economical structure. CONSTITUTION: The reinforcing structure for a joint between a concrete filled steel tube column and a steel skeleton beam contains: a penetration plate(110) installed horizontally to penetrate the center of the concrete filled steel tube column; and a pair of inner plates(120), as a plate joined to both sides of the penetration plate(110), projected to both sides of the penetration plate(110) to adhere closely to the inside of the concrete filled steel tube column. The penetration plate(110) is connected to an upper flange of the steel–skeleton beam.

0) CN204252286U – RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–S...

19) Family number: 58958826 (CN204252286U) © PatBase

Title: RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–STEEL BEAM CONNECTION JOINT

Priority: CN201420622649U 20141027

Family:

Publication number	Publication date	Application number	Application date
CN204252286 U	20150408	CN201420622649U	20141027

Probable Assignee: UNIV NORTH CHINA WATER AND RESOU

Assignee(s):(std)**:** UNIV NORTH CHINA WATER AND RESOU

Assignee(s): NORTH CHINA UNIV OF WATER CONSERVANCY AND HYDROPOWER ; NORTH CHINA UNIV OF WATER RESOURCES AND ELECTRIC POWER

Inventor(s):(std)**:** HAN AIHONG ; WU ZONGLIANG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204252286U The utility model discloses a rectangular concrete–filled steel tube column–steel beam connection joint. The rectangular concrete–filled steel tube column–steel beam connection joint comprises a rectangular steel tube, a steel beam I, a steel beam II, a fixed sleeve, flange connecting pieces I, flange connecting pieces II, a web connecting piece, a damping plate, high–strength bolts I, high–strength bolts II, referencing connecting plates and high–strength bolts III, the left end of the steel beam I penetrates through the fixed sleeve and is aligned with the left end face of the fixed sleeve and connected to the fixed sleeve through the high–strength bolts III, the left end of the steel beam I and the reinforcing connecting plates are welded to the rectangular steel tube, the steel beam I is connected with the steel beam II through the flange connecting pieces I, the flange connecting pieces II and the web connecting piece, the damping plate is arranged between the steel beam I and the steel beam II, and concrete is poured in the rectangular steel tube. The rectangular concrete–filled steel tube column–steel beam connection joint is simple in structure, convenient to machine, capable of not only guaranteeing beam and column connection safety and reliability but also greatly reducing construction and installation difficulty, high in impact toughness, strong in extensional deformation capability, high in universality, convenient to replace, stable and efficient in energy–dissipating capacity, and higher in anti–seismic property.

0) US5218802A – COLUMN AND BEAM CONNECTING ASSEMBLY

20) Family number: 15135644 (US5218802A) © PatBase

Title: Column and beam connecting assembly

Priority: JP19900006711 19900116 JP19900006712 19900116

Family:

Publication number	Publication date	Application number	Application date
JP2719543 B2	19980225	JP19900006711	19900116
JP2719544 B2	19980225	JP19900006712	19900116
JP3212534 A2	19910918	JP19900006711	19900116
JP3212535 A2	19910918	JP19900006712	19900116
US5218802 A	19930615	US19910640483	19910114

Probable Assignee: HITACHI METALS LTD

Assignee(s):(std)**:** HITACHI KINZOKU KIZAI KK ; HITACHI METALS LTD ; HITACHI METALS TECHNO LTD ; SHIMIZU CONSTRUCTION CO LTD

Assignee(s): SHIMIZU CORP

Inventor(s):(std)**:** KITANO TAKASHI ; MATSUO HIDENARI ; MATSUO HIDESHIGE ; TOMINAGA HIROO ; TOMINAGA HIROOH ; YAMADA ATSUSHI ; YOSHIMURA MASAHIRO

International class (IPC 8–9): E04B1/16 E04B1/21 E04B1/30 E04B1/58 (Advanced/Invention); E04B1/20 (Core/Invention)

International class (IPC 1–7): E04B1/20 E04B1/30 E04B1/58

CPC: E04B1/215

European class: E04B1/21B

US class: 52/253 52/263 52/721 52/728 52/737.2 52/838 522/530

Classification Explorer

Cited documents: US5012622 A, US4905436 A, US4864797 A, US4722156 A, US4577449 A, US4211045 A, US3593477 A, US3354593 A, US1571092 A, JP63190839 A2, JP63190838 A2, JP62133239 A2, JP1295939 A2, EP0218313 A2,

Forward Citations: US6662506, US5553433, US2014311059, US2009038263, KR101448167, JP7034540, JP5106276, JP5014305, JP2566153, FR2841579, DE10261604,

Abstract:
Source: US5218802A A connecting assembly is disposed between a concrete column and at least one beam having upper and lower flanges. The connecting assembly has upper and lower connecting members and a tubular member disposed between the connecting members. The upper and lower connecting members are mounted on the upper and lower flanges of the beam, respectively. Each of the connecting members has at least one through–hole in which concrete of the column is filled, so that the column is partly encased by the tubular member. Accordingly, the column is connected to the beam.

0) US4779395A – COMPOSITE CONCRETE/STEEL FIREPROOF COLUMN

21) Family number: 3857806 (US4779395A) © PatBase

Title: Composite concrete/steel fireproof column

Priority: CA19860515211 19860801 EP19860111326 19860816 EP19860111326 19860816 LU19850086063 19850830

Family:

Publication number	Publication date	Application number	Application date
AT62307 E	19910415	AT19860111326T	19860816
CA1303380 A1	19920616	CA19860515211	19860801
DE3678510 D1	19910508	DE19863678510	19860816
EP0212593 A2	19870304	EP19860111326	19860816
EP0212593 A3	19890315	EP19860111326	19860816
EP0212593 B1	19910403	EP19860111326	19860816
LU86063 A	19870306	LU19850086063	19850830
US4779395 A	19881025	US19860901782	19860828

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; BAUS RAYMOND ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** JEAN BAPTISTE SCHLEICH ; RAYMOND BAUS ; SCHLEICH JEAN BAPTISTE ; BAUS RAYMOND

Inventor(s): BAUS RAYMOND B 4000 LIEGE BE ; SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class (IPC 8–9): E04C3/293 (Advanced/Invention); E04C3/29 (Core/Invention)

International class (IPC 1–7): E04C3/293 E04C3/34

CPC: E04C3/293

European class: E04C3/293

US class: 52/721.3 52/723 52/724 52/724.5 52/725 52/727 52/729.1 52/834 52/837

Classification Explorer

Cited documents: US966274 A, US926005 A, US925865 A, US916378 A, US650299 A, US596217 A, US515963 A, US4571913 A, US4261156 A, US312349 A, US2198985 A, US2065493 A, US1573735 A, US1457598 A, US1203283 A, GB8648, GB237221 A, EP0133565 A2, EP0123642 A2, DE813020 A, DE2743639 A1, CH485924 A, CH211069 A,

Forward Citations: WO9851883, US9677273, US8938882, US8484915, US8438808, US8266856, US8065848, US7930866, US7882679, US7721496, US7213379, US7107730, US6061992, US2006213138, US2003029111,

Abstract:
Source: US4779395A A fireproof construction element has a plurality of integrally interconnected and parallel profile beams each having a longitudinally extending outer flange defining an outer surface and a longitudinally extending web extending inwardly from the flange. The webs are each formed adjacent the flange with a row of at least generally longitudinally extending, elongated, and laterally throughgoing slots. The beams form a plurality of outwardly open channels laterally bounded by the flanges. Respective masses of concrete substantially fill the channels between the webs and inward of the flanges and have outer surfaces contiguous with the outer surfaces of the beam flanges. The slots can be provided in two rows with the slots of one row overlapping and staggered with the rows of the other row.

0) CN205329861U – COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GI...

22) Family number: 62704970 (CN205329861U) © PatBase

Title: COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GIRDER STEEL PUNCHING HAUNCH NODE

Priority: CN201520968653U 20151130

Family:

Publication number	Publication date	Application number	Application date
CN205329861 U	20160622	CN201520968653U	20151130

Probable Assignee: UNIV NORTH CHINA TECHNOLOGY

Assignee(s):(std)**:** NORTH CHINA UNIV OF TECH ; NORTH CHINA UNIV OF TECHNOLOGY ; UNIV NORTH CHINA TECHNOLOGY

Inventor(s):(std)**:** WANG QIANG ; ZHANG YUFEN

International class (IPC 8–9): E01D101/26 E01D19/00 E04B1/58 E04B1/98 (Advanced/Invention); E01D101/26 (Advanced/Non–invention)

Classification Explorer

Abstract:
Source: CN205329861U The utility model discloses composite concrete –filled steel tube post – girder steel punching haunch node relates to the nodal connection form of a composite concrete –filled steel tube post and girder steel, belongs to building engineering and bridge engineering technical field. This node comprises composite concrete –filled steel tube post, girder steel and biography power component. The composite concrete –filled steel tube post constitute by interior steel pipe, outer steel pipe and dabbling concrete, the girder steel form by last lower flange and web, biography power component be slant armpit board. Steel beam web plate locates to have a perfect understanding in succession in the node core, steel pipe internal discontinuity including the lower flange on the girder steel, and the girder steel carries out welding reinforcement with inside and outside steel pipe intersection, simultaneously, weld ribbing's slant armpit board between girder steel and composite concrete –filled steel tube post. The utility model discloses a node construction is simple, and construction convenience has combined girder steel punching and beam –ends to add the structure measure of armpit, and it is high to possess rigidity and intensity, and the wholeness is good, passes the power route and clearly and definitely waits the advantage, can realize the rigid connection of composite concrete –filled steel tube post and girder steel.

23) Family number: 58242295 (US2016177534A) © PatBase

Title: PRECAST INTEGRAL POST AND RETAINING WALL AND METHOD FOR INSTALLING SAME

Priority: US20130842807P 20130703 US20140902815 20140703 WO2014US45404 20140703

Family:

Publication number	Publication date	Application number	Application date
US2016177534 AA	20160623	US20140902815	20140703
WO15003129 A1	20150108	WO2014US45404	20140703

Probable Assignee: UTILITY CONCRETE PRODUCTS LLC

Assignee(s):(std)**:** HERATY THOMAS ; UTILITY CONCRETE PRODUCTS LLC

Inventor(s):(std)**:** HERATY THOMAS

Agent(s): PAVLIK GEORGE S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D17/20 E02D29/02 E04H12/22 (Advanced/Invention)

CPC: E02D17/20 E02D29/0266 E04H12/2215 E02D29/0225 E02D29/02

US class: 405/285 405/286

Classification Explorer

Cited documents: US8635833 BB, US5368416 A, US5233810 A, US5218797 A, US5144779 A, US5050828 A, US4911585 A, US4836718 A, US3815369 A, US2007092343 AA, US2002069602 AA,

Abstract:
Source: US2016177534A A prefabricated retaining wall structure and method of installing. The structure has a precast concrete face panel and an elongated support column permanently joined to the face panel. The face panel has a top and bottom, opposing end edges and first and second sides with a thickness therebetween. The elongated support column is secured to the face panel between the opposing end edges. The column has first and second ends and an elongated body therebetween and extends along a portion of the first side of the face panel.

0) KR20140021278A – RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HOR...

24) Family number: 55883096 (KR20140021278A) © PatBase

Title: RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HORIZONTAL WELDING DIAPHRAGM OF FLANGE PLATES AND CONNECTING BARS

Priority: KR20120087438 20120809

Family:

Publication number	Publication date	Application number	Application date
KR101402958 B1	20140602	KR20120087438	20120809
KR20140021278 A	20140220	KR20120087438	20120809

Probable Assignee: SNU R AND DB FOUNDATION

Assignee(s):(std)**:** INDUSTRIAL ACADEMIC COOPERATION GROUP SEOUL NATIONAL UNIV ; SNU R AND DB FOUNDATION

Inventor(s):(std)**:** PARK HONG GUN ; KIM CHANG SOO

International class (IPC 8–9)**:** E04B1/30 E04B1/58 E04C3/30 (Advanced/Invention)

Classification Explorer

Cited documents: KR20080037436 A, KR19990081415 A, JP3049571 B2, JP2003003568 A2,

Abstract:
Source: KR20140021278A The present invention relates to a CFT column having a diaphragm with simple structure due to horizontally welding connection reinforcing bars to flange plates and a portion for joining the same and steel beams using the same, wherein the portion is formed into a structure for rigidly joining the CFT column and the steel beams with definite performances properly using the CFT column. The CFT column according to the present invention is a CFT column having concrete filled therein, and comprises: a steel column; a pair of the flange plates corresponding to the installation directions of the steel beams, facing each other, and horizontally welded to the inner or the outer surfaces of the steel column; and the connection reinforcing bars installed to connect the pair of the flange plates each other and welded to the flange plates by the whole lengths thereof after laid on the flange plates. The structure for rigidly joining the CFT column and the steel beams according to the present invention comprises: the CFT column having the diaphragm in which the connection reinforcing bars are horizontally welded to the flange plates; the steel beams having flanges welded to the flange plates or the steel column at the same level of the flange plates of the CFT flange plates; and the filled concrete filled in the steel column.

0) CN205329848U – HALF PUNCHING HAUNCH NODE ON COMPOSITE CONCRETE...

25) Family number: 62704815 (CN205329848U) © PatBase

Title: HALF PUNCHING HAUNCH NODE ON COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GIRDER STEEL

Priority: CN201520968654U 20151130

Family:

Publication number	Publication date	Application number	Application date
CN205329848 U	20160622	CN201520968654U	20151130

Probable Assignee: UNIV NORTH CHINA TECHNOLOGY

Assignee(s):(std)**:** NORTH CHINA UNIV OF TECH ; NORTH CHINA UNIV OF TECHNOLOGY ; UNIV NORTH CHINA TECHNOLOGY

Inventor(s):(std)**:** WANG QIANG ; ZHANG YUFEN

International class (IPC 8–9): E01D19/00 E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205329848U The utility model discloses half punching haunch node on the composite concrete –filled steel tube post girder steel relates to the nodal connection form of a composite concrete –filled steel tube post and girder steel, belongs to building engineering and bridge engineering technical field. This node comprises composite concrete –filled steel tube post, girder steel and biography power component. The composite concrete –filled steel tube post constitute by interior steel pipe, outer steel pipe and dabbling concrete, the girder steel form by last lower flange and web, biography power component be slant armpit board, the girder steel passes outer steel pipe and welds on interior steel pipe wall, and the girder steel carries out welding reinforcement with outer steel pipe wall intersection, simultaneously, weld ribbing's slant armpit board between girder steel and composite concrete –filled steel tube post. The utility model discloses a node construction is simple, construction convenience, owing to combined half punching on the girder steel and beam –ends to add the structure measure of armpit, it is high to possess rigidity and intensity, and anti –seismic performance is good, passes the route of doing all can and clearly and definitely waits the advantage, can realize effective transmission of doing all can between composite concrete –filled steel tube post and the girder steel.

0) US5174080A – COLUMN AND BEAM CONNECTING ASSEMBLY

26) Family number: 7480758 (US5174080A) © PatBase

Title: Column and beam connecting assembly

Priority: JP19900041821 19900222

Family:

Publication number	Publication date	Application number	Application date
JP2645365 B2	19970825	JP19900041821	19900222
JP3244725 A2	19911031	JP19900041821	19900222
US5174080 A	19921229	US19910657167	19910219

Probable Assignee: SHIMIZU KENSETSU KK

Assignee(s):(std)**:** HITACHI KINZOKU KIZAI KK ; HITACHI METALS LTD ; SHIMIZU CONSTRUCTION CO LTD

Assignee(s): HITACHI METALS TECHNO LTD ; SHIMIZU KENSETSU KK ; SHIMIZU CORP ; HITACHI KINZOKU KK ; HITACHI KIZAI KK ; HITACHI METAL LTD

Inventor(s):(std)**:** KITANO TAKASHI ; MATSUO HIDENARI ; MATSUO HIDESHIGE ; TOMINAGA HIROO ; TOMINAGA HIROOH ; YAMADA ATSUSHI ; YOSHIMURA MASAHIRO

International class (IPC 8–9)**:** E04B1/16 E04B1/30 E04B1/58 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/00 E04B1/16 E04B1/30 E04B1/58

CPC: E04B1/215

European class: E04B1/21B

US class: 52/252 522/520

Classification Explorer

Cited documents: US4905436 A, US4722156 A, US3593477 A, US3374592 A, US1625899 A, US1571092 A, US1571091 A, US1248049 A, JP63190839 A2, JP63190838 A2, JP60018785 A2, EP0218313 A2,

Forward Citations: WO0079064, US9677273, US8800229, US8635834, US8484915, US8205408, US8176706, US8146322, US8122672, US8122671, US7987638, US6662506, US6543195, US5657597, US5628156, US5259160, US2011088348, US2010043348, US2010043347, US2010043338, US2010043316, US2009038263, US2008047221, US2006112657, US2004065657, JP5148898, CN105297915,

Abstract:
Source: US5174080A A connecting assembly is disposed between a concrete column and at least one beam having upper and lower flanges. The connecting assembly has upper and lower first connecting members each having at least one through–hole through which at least one portion of the column is disposed so that both of the first connecting members are mounted on the column. Upper and lower second connecting members are mounted on the upper and lower flange portions of the beam, respectively. The upper and lower second connecting members are affixed respectively to the upper and lower first connecting members by screw engagements, whereby the column is connected to the beam.

0) CN103526950A – CONCRETE–FILLED SQUARE STEEL TUBE AND STEEL BEA...

27) Family number: 55643514 (CN103526950A) © PatBase

Title: CONCRETE–FILLED SQUARE STEEL TUBE AND STEEL BEAM SEMI–RIGID REINFORCING JOINT FOR PREVENTING PROGRESSIVE COLLAPSE

Priority: CN201310519227 20131029

Family:

Publication number	Publication date	Application number	Application date
CN103526950 A	20140122	CN201310519227	20131029

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Assignee(s): SHAN DONG UNIV OF SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** CHEN YIZHU ; LIU QING ; QIU JING ; TONG JIANHONG

International class (IPC 8–9): E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103526950A The invention discloses a concrete–filled square steel tube and steel beam semi–rigid reinforcing joint for preventing progressive collapse. The joint comprise a concrete–filled square steel tube column and an I–shaped steel beam. Internal partitions and reinforcing plates are respectively disposed inside and outside the square steel tube walls corresponding to the upper flange and the lower flange of the steel beam. A U–shaped steel connecting plate winds around the square steel tube column wall and is fixed with I–shaped steel beam webs on two sides of the column through high–strength bolts. The beam columns are connected through the U–shaped steel connecting plate and the high–strength bolts. The U–shaped steel connecting plate is also used as a vertical joint connecting plate. The internal partitions under impact load can avoid local buckling of square steel tube column walls. The reinforcing plates can increase joint end bending resistance. The joint is reasonable in structure, uncontinuous beams are integrated while column continuity is also considered, structural integrity and joint ductility are increased, dynamic effect during partial component failure is relieved, and progressive collapse preventing capability is increased.

0) KR20150001636U – JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL ...

28) Family number: 59103412 (KR20150001636U) © PatBase

Title: JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL BEAM

Priority: KR20130008644U 20131021

Family:

Publication number	Publication date	Application number	Application date
KR200477104 Y1	20150506	KR20130008644U	20131021
KR20150001636 U	20150429	KR20130008644U	20131021

Probable Assignee: IAE IAAEA IA AE

Assignee(s): IAE IAAEA IA AE ; YIBYEONGHUI

International class (IPC 8–9): E04B1/24 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: KR20130105249 A,

Abstract:
Source: KR200477104Y This is intended to reinforce the junction with the outer diaphragm and improve the way strength and stiffness of steel column joints, minimizing the length of the diaphragm protruding in the outer steel pipe, the inside concrete–filled steel tube column to be filled with concrete when the backroom It will be on a hollow steel tube columns and steel beams in the structure of the joints.Junction structure of a hollow steel tube columns and steel beams designed according to the preferred embodiment of this is a hollow steel tube columns and steel pipe poles of the first hollow shaft joint member joined to the first axis on both sides, a hollow steel tube column 1 and a second joining member joined to the second axis on both sides perpendicular to the shaft axis, comprising a hollow steel joined to the steel tube column information of the first shaft member and the second joint shaft via the joining members and, the first axis Joints material, both ends of the width direction is composed of rectangular cross–section which extends a predetermined length protrudes from the hollow steel tube so that the Pillar hollow pillar junction plate is bonded to the steel pipe columns, the columns are vertically protruding from the center junction plate and webs of steel beams It consists of a T–shape, including the joint plate coupled beam and a second axial abutment member, in the height of the pole junction plate a hollow steel pipe is spaced apart in the longitudinal direction of the column is extended to protrude at both ends of the pole junction plate bonding, and bonding plate and steel pipe columns and pillars are joined inside corners are cut in an arc shape and is characterized in that the upper and lower flange of the steel beam consists of a pair of horizontal stiffeners are bonded, respectively.

0) CN104863271A – CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CO...

29) Family number: 60198362 (CN104863271A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CONCRETE BEAM JOINT CONNECTION METHOD

Priority: CN201510288472 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104863271 A	20150826	CN201510288472	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** GU JUN ; LIU JIEPENG ; YU YU

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP4696843 B2, JP2006144427 A2, CN203866976 U, CN203640061 U, CN201507030 U, CN104499575 A, CN103821235 A,

Abstract:
Source: CN104863271A The invention belongs to the field of building structures, and particularly relates to a concrete–filled steel tube column–reinforced concrete beam joint connection method. The method is a novel connection method aiming to solve the problems that a connection joint of a concrete–filled steel tube column and a reinforced concrete beam is large in welding workload and large in construction operation difficulty. The method is characterized in that an upper flange plate, a lower flange plate, a vertical plate, a plurality of longitudinal ribs, a plurality of sleeves and a circular steel pipe are included and has the advantages that the vertical plate is narrow, the beam end rib drawing arrangement is not affected by the vertical plate; the tail ends of reinforcing steel bars are provided with the sleeves, the length of the lap joint segment is decreased, the length of the upper flange plate and the lower flange plate can be decreased, conveying is facilitated, and steel can be saved; connection among the upper flange plate, the lower flange plate, the vertical plate and column type steel flange is finished in a factory, the construction stage is free of welding work, and construction is fast and convenient to conduct.

0) KR20100125612A – CONCRETE–FILLED STEEL TUBE COMPOSITE GIRDER

30) Family number: 47725510 (KR20100125612A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COMPOSITE GIRDER

Priority: KR20090044413 20090521

Family:

Publication number	Publication date	Application number	Application date
KR101044162 B1	20110624	KR20090044413	20090521
KR20100125612 A	20101201	KR20090044413	20090521

Probable Assignee: LEE TA

Assignee(s):(std)**:** LEE TA

Inventor(s):(std)**:** LEE TA

International class (IPC 8–9): E01D2/00 E04C3/04 (Advanced/Invention)

CPC: E01D2/00 E01D2/04 E01D2101/268 E04C3/04

Classification Explorer

Cited documents: KR20060053134 A, KR20050063280 A, KR200369732 Y, KR20030069732 A, KR100379152 B1, KR100379152,

Forward Citations: CN104006283, CN104006283,

Abstract:
Source: KR20100125612A PURPOSE: A concrete–filled steel tube composite girder is provided to improve compressive strength, shearing strength, bending strength, and tensile strength and to reduce costs by improving the service life of the girder. CONSTITUTION: A concrete–filled steel tube composite girder is composed of a steel tube(100), webs(200), and a flange(300). The steel tube is filled with concrete(10). Spiral protrusions are formed inside the steel tube. The webs are longitudinally welded in the bottom of the steel tube. The flange is longitudinally welded in the bottom of the webs. Reinforced concrete with steel wires is placed in both sides of the parts in which the webs and the flange are coupled.

0) CN101818478A – CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCUL...

31) Family number: 46785759 (CN101818478A) © PatBase

Title: CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCULAR STEEL TUBULAR PIER COLUMN AND CONCRETE COVER BEAM

Priority: CN201010120563 20100309

Family:

Publication number	Publication date	Application number	Application date
CN101818478 A	20100901	CN201010120563	20100309
CN101818478 B	20120725	CN201010120563	20100309

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; HOHAI UNIVERSITY ; UNIV HOHAI ; UNIV HEHAI

Assignee(s): HEHAI UNIVERSITY

Inventor(s):(std)**:** BOHAI JI ; HAIFENG MO ; YADONG DONG ; ZHONGQIU FU

Inventor(s): JI BOHAI ; MO HAIFENG ; DONG YADONG ; FU ZHONGQIU

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Core/Invention)

Classification Explorer

Cited documents: JP2005030119 A2, JP2002097609 A2, CN2507939 Y, CN1963105 A, CN1560369 A, CN1548654 A, CN101476348 A,

Forward Citations: CN105926427, CN105803925, CN105803925, CN104404869, CN103452039, CN103452039, CN103147460,

Abstract:
Source: CN101818478A The invention discloses a connection structure for a concrete–filled circular steel tubular pier column and a concrete cover beam. The connection structure comprises a reverse T–shaped steel beam, the concrete cover beam and the concrete–filled circular steel tubular pier column, wherein the reverse T–shaped steel beam is pre–buried at the lower end of the concrete cover beam. The connection structure is characterized by also comprising a steel tubular cover plate and a riveting rib with a nut, wherein the steel tubular cover plate is welded with the upper end of the concrete–filled circular steel tubular pier column; the hole on the web plate of the reverse T–shaped steel beam is connected with the concrete; a flange plate of the T–shaped steel beam is fixedly connected with the steel tubular cover plate through the riveting rib with the nut; and the two ends of the riveting rib with the nut are embedded in the concrete cover beam and the concrete–filled circular steel tubular pier column. The connection structure needs no complex arrangement of reinforcement, and each component can be processed in the factory and assembled on site. Only welding of a triangular supporting steel plate and the steel tubular cover plate is needed on site so as to ensure small workload and definite force transferring path. The connection structure has the advantages of simple and quick construction during the implementation.

0) JP5263471A – COLUMN–BEAM JOINT STRUCTURE FOR CONCRETE–FILLED...

32) Family number: 10525918 (JP5263471A) © PatBase

Title: COLUMN–BEAM JOINT STRUCTURE FOR CONCRETE–FILLED ANGULAR STEEL PIPE COLUMN–STEEL FRAME BEAM STRUCTURE

Priority: JP19920060279 19920317

Family:

Publication number	Publication date	Application number	Application date
JP5263471 A2	19931012	JP19920060279	19920317

International class (IPC 8–9): E04B1/24 E04B1/30 E04B1/58 (Advanced/Invention); E04B1/24 E04B1/30 E04B1/58 (Core/Invention)

International class (IPC 1–7): E04B1/24 E04B1/30

Classification Explorer

Abstract:
Source: JP5263471A PURPOSE: To improve the settlement around a stair and around the outer periphery of a building and facilitate the concrete construction and the welding of a column angular joint by arranging cross vertical diaphragms over the column capital–beam faying section and column base section of a concrete–filled angular steel pipe column, and partially welding the angular joint of the steel pipe column over the whole column length. CONSTITUTION: A pair of flange skin plates 1 are arranged in parallel, and the flange side of cross vertical diaphragms 3 is welded. Web skin plates 2 are coupled between the skin plates 1 and the cross vertical diaphragms 3, and the web side of the cross vertical diaphragms 3 is welded. An angular column is welded, and concrete 5 is filled. The cross vertical diaphragms 3 are arranged over the column capital section, column base section, and beam faying section of the concrete–filled angular steel pipe column A for reinforcement. The shearing yield strength of a column and the beam faying section is increased, and the filled concrete 5 at the column capital section and column base section area and the local buckling of the steel pipe column A can be confined.

0) JP2005009172A – STRUCTURE AND METHOD FOR JOINING CONCRETE–FILLE...

33) Family number: 31584919 (JP2005009172A) © PatBase

Title: STRUCTURE AND METHOD FOR JOINING CONCRETE–FILLED SQUARE STEEL–PIPE COLUMN AND REINFORCED CONCRETE BEAM TOGETHER

Priority: JP20030174431 20030619

Family:

Publication number	Publication date	Application number	Application date
JP2005009172 A2	20050113	JP20030174431	20030619

Probable Assignee: OHKI CORP

Assignee(s):(std)**:** OHKI CORP

Inventor(s):(std)**:** ARAKAWA GEN ; HANAI NOBUAKI ; KAKEO TOSHIAKI ; NAKANE HIROSHI ; OGAWA MASA

International class (IPC 8–9): E04B1/30 (Advanced/Invention); E04B1/30 (Core/Invention)

International class (IPC 1–7): E04B1/30

Classification Explorer

Abstract:
Source: JP2005009172A PROBLEM TO BE SOLVED: To provide a joining structure and a construction method for a concrete–filled square steel–pipe column and a reinforced concrete beam, which enable the effective utilization of the total strength of a main reinforcement of the beam, and which prevent an opening leakage from being caused by leakage of concrete from a gap between a horizontal hole of the steel–pipe column and the main reinforcement of the beam, passing through the horizontal hole. SOLUTION: In the method for joining the concrete–filled square steel–pipe column and the reinforced concrete beam together, a beam reinforcement 5, which is composed of a deformed bar with a screw, is arranged in such a manner as to penetrate the whole of a beam reinforcement inserting hole 3 of opposed peripheral side face plates 2 of the square steel–pipe column 1; each anchorage fitting 6 with a female screw, which is screwed into the beam reinforcement 5, is pressure–bonded to outer surfaces of the opposed peripheral side face plates 2 outside the column 1; a diameter–enlarged flange 7 for reducing bearing pressure and preventing the leakage of the concrete from the opening is integrally provided on the side of the contact with the column 1 in the anchorage fitting 6; and the concrete 13 and the concrete 14 are placed in such a manner that the beam reinforcement 5 is embedded inside the column 1 and on the beam side of the column 1. Each of the anchorage fittings 6 with the female screw is mounted before the concrete 13 is placed.

0) CN203145194U – INTERNAL DIAPHRAGM JOINT OF VARIABLE FLANGE STE...

34) Family number: 54613715 (CN203145194U) © PatBase

Title: INTERNAL DIAPHRAGM JOINT OF VARIABLE FLANGE STEEL I–BEAM AND SQUARE CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201320111675U 20130312

Family:

Publication number	Publication date	Application number	Application date
CN203145194 U	20130821	CN201320111675U	20130312

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Assignee(s): SHAN DONG UNIV OF SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** YIN YANXIA ; WANG RUIGANG ; WANG LAI

International class (IPC 8–9): E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105201103, CN104912197, CN104912196, CN104047365, CN104047364, CN104047363, CN103993670, CN103882993, CN103643743, CN103643743,

Abstract:
Source: CN203145194U The utility model discloses an internal diaphragm joint of a variable flange steel I–beam and a square concrete filled steel tubular column. The internal diaphragm joint comprises the steel I–beam and the square concrete filled steel tubular column. Internal diaphragms are welded on the square steel tubes on an upper flange and a lower flange of the steel I–beam. The flange section at the end of the steel I–beam is uniform in width, the flange section from the flange with uniform width to the joint of the square concrete filled steel tubular column is variable in width, the cross section of the flange with variable width is of a isosceles trapezoid, the inclination degrees of the slopes of the isosceles trapezoid are 1:2.5, and the horizontal width of the slopes is one tenth to one fifth of the width of the flange with uniform width. Due to the fact that the width of the flange is variable, the flange is reinforced, therefore, a plastic hinge is forced to be arranged on the beam at the position at a certain distance from the beam joint, the joint is protected, brittle failure caused by the fact that the deformation capacity of the joint worsens is avoided, the drawability of the structure is improved, and the design idea that the joint is strong is achieved.

35) Family number: 58054515 (CN204023800U) © PatBase

Title: STEEL–CORBEL–TYPE JOINT CONNECTION STRUCTURE FOR CONCRETE–FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE BEAM

Priority: CN201420368483U 20140707

Family:

Publication number	Publication date	Application number	Application date
CN204023800 U	20141217	CN201420368483U	20140707

Probable Assignee: CHINA CONSTR STEEL STRUCTURE JIANGSU CO LTD

Assignee(s):(std)**:** CHINA CONSTR STEEL STRUCTURE JIANGSU CO LTD ; CHINA CONSTRUCTION STEEL STRUCTURE JIANGSU CO LTD

Assignee(s): STEEL CONSTRUCTION CO LTD IN JIANGSU ; CHINA CONSTRUCTION STEEL STRUCTURE JIANGSU CO

Inventor(s):(std)**:** CAO HUIFA ; DAI WENLONG ; OUYANG CHAO ; PU WEIBIN ; ZHU FUJIN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204023800U The utility model relates to a steel–corbel–type joint connection structure for a concrete–filled steel tubular column and a steel reinforced concrete beam. The steel–corbel–type joint connection structure comprises the concrete–filled steel tubular column (1), a steel corbel (2) and the steel reinforced concrete beam (3). A steel beam in the steel reinforced concrete beam (3) comprises a uniform–section section and a variable–section transition section. The outer wall of the concrete–filled steel tubular column (1) is connected with the steel corbel (2) in a constant–strength butt weld mode in a factory, and the variable–section transition section of the steel beam in the steel reinforced concrete beam (3) is connected with the uniform–section section of the steel beam in the steel reinforced concrete beam (3) in a constant–strength butt weld mode in the factory. The steel corbel (2) is connected with the variable–section transition section of the steel beam in the steel reinforced concrete beam (3) in a conventional steel beam spliced joint mode during field installation, longitudinal reinforcements in the steel reinforced concrete beam (3) are welded to the top flange and the bottom flange of the variable–section transition section of the steel beam, and then the parts are wrapped by concrete. By means of the joint connection structure, the field construction difficulty can be lowered, the welding quality of the ends of reinforcements can be improved, and the seismic fortification requirements of a joint can be met.

0) CN205134979U – RECTANGULAR CONCRETE –FILLED STEEL TUBULAR COLU...

36) Family number: 62031864 (CN205134979U) © PatBase

Title: RECTANGULAR CONCRETE –FILLED STEEL TUBULAR COLUMN (CFST) POST AND ANTI REINFORCEMENT NODE THAT COLLAPSES IN SUCCESSION OF GIRDER STEEL

Priority: CN201520861441U 20151102

Family:

Publication number	Publication date	Application number	Application date
CN205134979 U	20160406	CN201520861441U	20151102

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECH ; SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Inventor(s):(std)**:** SONG GE ; WANG JIAN ; WANG LIANG

International class (IPC 8–9): E01D19/00 E01D22/00 E04B1/30 E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205134979U The utility model discloses a rectangular concrete –filled steel tubular column (CFST) post and anti reinforcement node that collapses in succession of girder steel, it includes rectangle steel core concrete column, I shaped steel roof beam and reinforced structure, the lower flange beading is on rectangle steel pipe column wall on the I shaped steel roof beam, and steel beam web plate passes through first angle steel fixed connection with rectangle steel pipe column wall, sets up the reinforced structure in I shaped steel roof beam lower flange and support connnection department, and the reinforced structure passes through the second angle steel and centers on rectangle steel pipe column wall fixed connection with girder steel lower flange and rectangle steel pipe column wall fixed connection, second angle steel by U shaped steel layering. The utility model discloses an angle steel and U shaped steel layering have increased the drawknot power of adjacent roof beam lower flange, have strengthened the anti bucking ability of lower flange department steel pipe column wall simultaneously, and when taking place to collapse in succession, the girder steel lower flange is drawn, for the roof beam lower flange with provide extra biography power route being connected of post, has improved the ductility of node and has resisted the ability of collapsing in succession.

0) CN202990244U – DUAL–T SHAPED COMPOSITE BEAM WITH PRESTRESS CON...

37) Family number: 54097791 (CN202990244U) © PatBase

Title: DUAL–T SHAPED COMPOSITE BEAM WITH PRESTRESS CONCRETE FILLED STEEL TUBE CORE BAR

Priority: CN201220730637U 20121226

Family:

Publication number	Publication date	Application number	Application date
CN202990244 U	20130612	CN201220730637U	20121226

Probable Assignee: UNIV SOUTHEAST

Assignee(s):(std)**:** SOUTHEAST UNIV ; UNIV SOUTHEAST

Inventor(s):(std)**:** ZHANG YUFENG ; XU WENPING ; SUN XUN ; SHI XIANWANG ; LU JIANFENG ; LI JINBAO ; HUANG MING ; GUO XUN ; CHEN YOUCHUN

International class (IPC 8–9): E04C3/294 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103031926, CN103031926,

Abstract:
Source: CN202990244U The utility model discloses a dual–T shaped composite beam with a prestress concrete filled steel tube core bar. A prestress concrete filled steel tube core bar is used as a tension bottom flange, a corrugated steel plate is adopted as a web, and a high–strength concrete top flange top plate is poured, so as to form a composite structural beam. The prestress concrete filled steel tube core bar is composed of a steel pipe, intra–pipe concrete and prestress reinforcing steel bar, so that a strong tension capacity is guaranteed; and the prestress concrete filled steel tube core bar is combined with the corrugated steel web in use, so as to achieve complementary advantages, improve shearing resistance and tension capacity, and enhance span capacity of crossbeam. The composite beam disclosed by the utility model has the advantages of light weight, great span capacity, strong bearing ability, high rigidity, low construction cost and like, and can be massively produced in a prefabricated part factory; the composite beam, as a roofing beam, can construct a single–layer industrial factory building with a 30–48m ultra–large span, and, as a floor beam, can construct a multi–layer industrial factory building with a 21–30m ultra–large span, so that the composite beam not only can meet demand on large space of industrial production but also can save land.

38) Family number: 33642213 (WO06080677A1) © PatBase

Title: TSC BEAM FORMED WITH BOTTLE NECK TOP FLANGE

Priority: KR20040079745 20041006

Family:

Publication number	Publication date	Application number	Application date
KR100592398 B1	20060626	KR20040079745	20041006
KR20060030834 A	20060411	KR20040079745	20041006
WO06080677 A1	20060803	WO2005KR03260	20051001

Probable Assignee: LEE CHANG NAM

Assignee(s):(std)**:** LEE CHANG NAM

Inventor(s):(std)**:** LEE CHANG NAM

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04C3/20 E04C3/293 (Advanced/Invention); E04C3/20 E04C3/293 (Advanced/Non–invention); E04C3/20 E04C3/29 (Core/Invention)

CPC: E04B5/29 E04C3/293 E04C2003/0434 E04C2003/0473

European class: E04B5/29 E04C3/293 P04C3/04S2B P04C3/04S3U

Classification Explorer

Cited documents: US6543195 BB, US6058673 A, US5315804 A, KR20030086531 A, KR20030008875 A,

Forward Citations: WO11012974, WO11012974, US2010287878, KR101482977, KR101469798, KR101222206, KR101085085, KR101042496, KR101012010, KR101000269, KR100918983, KR100887389, KR100872959, KR100872959, KR100777566, KR100777565, ITVI20090198, ITUD20110048, FR2927916, DE102011010672, DE102011010672,

Abstract:
TSC beam formed with bottle neck top flange(BNTSC Beam), which attached shear connectors easily to top flange in spite of producing with a steel sheet of less than 6mm thick and secured economical efficiency, has been developed. BNTSC Beam of the present invention makes it possible for irrsquo;s the total width to be narrow, and it makes possible the size of its column attached small in Figure 1. BNSTC Beam can attach bolt+steel pipe(7) shear connectors easily and low cost instead of welding. Web(3) of BNTSC Beam(1) takes a stirrup of reinforced concrete beam role. Top flange(2) has charge of a compressive force of bending during construction period. As level part of top flange is used into projection putting up deck plate(9) and is inside of web(3), it takes effect that dwindles torsion moment twisting by eccentric load. The vertical part of top flange takes a role the inserts bolt+steel pipe base fixing nuts(8) and shear connector role and as bond stress itself. The above bolt+steel pipe keeps up width between left and right top flanges. And it prevents lateral buckling induced by compressive force of bending during construction period, takes a foothold role during working, makes it to pass the bottom reinforcing bar of slab into tenon reinforcing bar(36) through extra bolt holes(6). As top flange is formed with bottleneck, the possibility of interfacial phenomena concrete and web plates can be excluded. Bottom flange(4) is a tensile material against bending tensile strength, and Yshape projection(5) takes a role that increase cross section of tensile material by bending moment and takes a groove role welding two pieces of bilateral symmetry.

0) CN104074276A – A LINKING STRUCTURE BETWEEN CONCRETE FILLED STI...

39) Family number: 57500386 (CN104074276A) © PatBase

Title: A LINKING STRUCTURE BETWEEN CONCRETE FILLED STILL TUBULAR COLUMNS AND REINFORCED CONCRETE BEAMS AND A CONSTRUCTION METHOD

Priority: CN201310686039 20131216

Family:

Publication number	Publication date	Application number	Application date
CN104074276 A	20141001	CN201310686039	20131216

Probable Assignee: CHINA CONSTR 4TH ENG DIVISION

Assignee(s):(std)**:** CHINA CONSTR 4TH ENG DIVISION ; CHINA CONSTRUCTION FOURTH ENGINEERING DIVISION CORP LTD

Assignee(s): CHINA CONSTRUCTION FOURTH ENGINEERING DIVISION CO

Inventor(s):(std)**:** PENG ZHENFENG ; LONG MINJIAN ; HUANG TAO ; CHEN JING

International class (IPC 8–9): E04B1/58 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP6108536 A2, JP11124912 A2, CN203626061 U, CN201991083 U, CN201722786 U, CN102704575 A, CN101063319 A,

Forward Citations: CN105002930, CN105002930, CN104929314,

Abstract:
Source: CN104074276A This invention introduces a linking structure between concrete filled still tubular columns and reinforced concrete beams and a construction method. The structure includes a steel–pipe column; steel–brackets are welded at the joints between the steel–pipe column and the reinforced concrete beams; each steel–bracket is of an H–shaped structure including an upper flange and a lower flange; outer–side steel bars in each reinforced concrete beam connected with the steel–pipe column bypass the steel–pipe column to reach the other side of the steel–pipe column and connect with the outer–side steel bars in a reinforced concrete beam on another side, or are welded with the upper flange or the lower flange of the matching steel bracket; the other steel bars in each reinforce concrete beam which cannot bypass the steel–pipe column are welded with the upper flange or lower flange of the matching steel bracket. The method being adopted is the combination of factory–like machining and on–site installation. The major steel members are machined by professional factories, so that the machining accuracy is guaranteed, the consumption of material and working hours are reduced and the difficulty of on–site installation is decreased. Besides, the high mechanized construction level can prevent conflicts between different working procedures on site and reduce the site welding workload.

0) CN205558038U – COMPOUND CARRIER BAR THAT EXCELS IN OF RECTANGL...

40) Family number: 63503198 (CN205558038U) © PatBase

Title: COMPOUND CARRIER BAR THAT EXCELS IN OF RECTANGLE TOP FLANGE STEEL REINFORCED CONCRETE

Priority: CN201620293688U 20160408

Family:

Publication number	Publication date	Application number	Application date
CN205558038 U	20160907	CN201620293688U	20160408

Probable Assignee: JIANGSU JIANZHU INST

Assignee(s):(std)**:** JIANGSU JIANZHU INST

Inventor(s):(std)**:** BAO YINGJI ; HUANG YONG ; LIU HUI ; SONG SHENGZHI ; TAO XIANGLING

International class (IPC 8–9): E04C3/293 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205558038U The utility model provides a compound carrier bar that excels in of rectangle top flange steel reinforced concrete, including top flange, lower flange and compound web, the top flange includes the rectangle steel pipe, concrete –filled in the rectangle steel pipe, compound web includes the steel sheet that a plurality of pieces connected gradually, connects through circular steel tube between the adjacent steel sheet, concrete –filled in the welded connection between circular steel tube and the steel sheet, circular steel tube, compound web upper portion and top flange welded connection, compound web lower part and lower flange welded connection. This carrier bar adopts rectangle steel pipe concrete as the carrier bar top flange, effectively improves load –carrying properties, resistance to compression and the anti –bending strength of carrier bar, simultaneously, adopt the compound web of circular steel tube concrete and plain plate, can improve the overall stability ability of carrier bar on the one hand, and on the other hand can strengthen its self bending resistance, antitorque, anti deformability.

0) US4211045A – BUILDING STRUCTURE

41) Family number: 30389495 (US4211045A) © PatBase

Title: Building structure

Priority: JP19770005198 19770120 JP19770030112 19770317 JP19770066452U 19770524 US19770858198 19771207 JP19770066453U 19770524 JP19770066454U 19770524

Family:

Publication number	Publication date	Application number	Application date
JP1116813 C3	19821015	JP19770030112	19770317
JP53090612 A2	19780809	JP19770005198	19770120
JP53114214 A2	19781005	JP19770030112	19770317
JP53160206 U1	19781215	JP19770066452U	19770524
JP53160207 U1	19781215	JP19770066453U	19770524
JP53160208 U1	19781215	JP19770066454U	19770524
JP56003441 Y2	19810126	JP19770066452U	19770524
JP56019604 Y2	19810511	JP19770066453U	19770524
JP57008937 B4	19820218	JP19770030112	19770317
US4211045 A	19800708	US19770858198	19771207
US4333285 A	19820608	US19790064732	19790808

Probable Assignee: KAJIMA CORP

Assignee(s):(std)**:** KAJIMA CORP ; KAJIMA KENSETSU KK

Assignee(s): KAJIMA KENSETSU K K ; KAJIMA KENSETSU KABUSHIKI KAISHA

Inventor(s):(std)**:** HATANO HAJIME ; KATO TOMOYASU ; KATOU TOMOYASU ; KOBAYASHI MIKIO ; KOIZUMI HAJIME ; MIYAGAWA KEIZOU ; MIYAKAWA KEIZO ; MIZUKOSHI KAORU ; SAEKI TOSHIO ; TAMANAGA SHINICHI ; TOOYAMA KOUZOU ; TOYAMA KOZO

International class (IPC 8–9): E04B1/16 E04B1/21 E04B1/30 E04B1/58 E04B5/43 E04C3/293 (Advanced/Invention)

International class (IPC 1–7): E04B1/16 E04B1/30 E04B1/58 E04B5/10 E04B5/19 E04B5/36

CPC: E04B1/21 E04B5/43 E04C3/065 E04C3/293

European class: E04B1/21 E04B5/43 E04C3/06H E04C3/293

US class: 52/236.3 52/251 52/252 52/260 52/319 52/432 52/602 52/649.2 52/653.1

Classification Explorer

Cited documents: US980480 A, US947769 A, US938458 A, US863555 A, US3349539 A, US2731824 A, US1794079 A, US1757077 A, US1501288 A, US1430424 A, US1135721 A, US1031046 A, US1031044 A, JP52015117 A2, JP46005185 A2, GB135688 A, FR788513 A, FR1475696 A, FR1257858 A, AT188088 B,

Forward Citations: WO9906642, WO9722770, WO9401636, WO9102859, WO8707318, WO8200677, WO09152476, WO03046299, WO0246548, US9562355, US9540815, US9260866, US9085898, US8910450, US8752347, US8572788, US8516776, US8505599, US8484928, US8205412, US8166717, US7647742, US7143554, US7083515, US6920728, US6807790, US6676183, US6543195, US6385930, US6266938, US6009677, US5867964, US5737895, US5697196, US5586418, US5371990, US5259160, US5245806, US5218802, US5181359, US5090172, US5050358, US4372088, US4363200, US2014298749, US2014245695, US2013305652, US2013008114, US2012124937, US2011271636, US2011094182, US2011083386, US2010287878, US2009307994, US2009300861, US2009188194, US2009188191, US2009084061, US2008302057, US2005115164, US2004055246, US2003164623, US2003084629, US2003029111, US2002174608, US2002129568, RU2548627, KR101521946, JP64080637, JP6143068, JP61045042, JP6065501, JP4286239, JP3244724, JP3151429, JP2297835, JP2014181545, JP2006336293, JP1287366, JP1274240, JP1080637, FR3013064, FR2927916, FR2925088, FR2704253, FR2599070, EP0328986, EP0292449, CN105297983, CN102733603, CN102733603, CN102071747, CN101851983, AU668975,

Abstract:
Source: US4211045A A building structure including a beam of steel or rod reinforced concrete which is sheathed in a U−shaped cross section steel shell, a concrete column which is encased in a steel tube, diagonal bracings and connecting members thereof. The topside of the U−shaped steel shell is open to allow concrete to be filled therethrough. Steel rods are placed in the shell and a steel panel connecting member secures the opposed sidewalls of the shell. Steel bars extend from a floor slab into the beam shell through the aforesaid open topside, thereby rendering the beam integral with the slab. Frame−like steel members for confining reinforcing bars and/or shear connectors are disposed in the inside of the beam shell. A steel sleeve is also provided in the beam shell for defining a space for disposition of equipment. In addition, an opening is provided in the bottom wall of the beam shell so as to allow steel rods to extend from the wall into the beam shell, thereby rendering the beam integral with the wall. A column is coupled to the beam by means of ring stiffeners or gusset plates. Diagonal bracings are positioned in symmetric relation to the frame member of the beam or column, and the diagonal bracings are fastened to the frame member of the beam or column by means of long bolts extending through the frame member thereof. The tip portions of diagonal bracings are provided with anchor members which are embedded in the concrete contained in the beam shell.

0) JP2002129653A – REINFORCED CONCRETE COLUMN AND JOINT PART STRUC...

42) Family number: 23380163 (JP2002129653A) © PatBase

Title: REINFORCED CONCRETE COLUMN AND JOINT PART STRUCTURE OF THE COLUMN AND STEEL BEAM

Priority: JP20000320353 20001020

Family:

Publication number	Publication date	Application number	Application date
JP2002129653 A2	20020509	JP20000320353	20001020
JP3602429 B2	20041215	JP20000320353	20001020

Probable Assignee: TAISEI CORP

Assignee(s):(std)**:** TAISEI CORP

Inventor(s):(std)**:** ASAYAMA OSAO ; KAWABATA KAZUMI ; KOMURO TSUTOMU ; SHINNO TATSU

International class (IPC 8–9): E04B1/30 (Advanced/Invention); E04B1/30 (Core/Invention)

International class (IPC 1–7): E04B1/30

Classification Explorer

Forward Citations: CN105133793, CN103046692, CN103046692, CN102979179,

Abstract:
Source: JP2002129653A PROBLEM TO BE SOLVED: To realize higher rigidity and bearing force than a column of reinforced concrete construction, to facilitate work execution and to reduce a steel frame quantity compared with a concrete filled steel pipe column to improve economy in a reinforced concrete column formed by surrounding the outer periphery of the column of reinforced concrete construction with steel plates, and the joint part structure of the column and a steel beam.SOLUTION: The outer periphery is surrounded in square cylindrical shape by steel plates 2, and a plurality of (for instance, twelve) main reinforcements 3 are disposed inside along the circumference. A hoop reinforcement 5 is spirally disposed at the main reinforcements 3. One or more (for instance, one) main reinforcement 4 is disposed at each of four corner parts, and concrete 6 is placed to constitute the reinforced concrete column 1. A horizontal stiffener extending outward from the steel plate 2 is integrally provided at the steel plate 2, at a connecting position to the steel beam and in a position facing the upper and lower part flange of the steel beam, and the horizontal stiffener and the upper and lower part flanges of the steel beam are jointed to each other.

0) KR101577019B – DIAPHRAM AND REINFORCEMENT STRUCTURE OF THE CON...

43) Family number: 61103271 (KR101577019B) © PatBase

Title: DIAPHRAM AND REINFORCEMENT STRUCTURE OF THE CONCRETE FILLED STEEL TUBLAR COMUMN, AND THE MANUFACTURING METHOD OF IT

Priority: KR20140084778 20140707

Family:

Publication number	Publication date	Application number	Application date
KR101577019 B1	20151211	KR20140084778	20140707

Probable Assignee: CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s):(std)**:** CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s): PARTNERS ARCHITECTS LTD CM ; CM PARTNERS ARCHITECTURE FIRM CO

Inventor(s):(std)**:** CHUN KEUM SOK ; LIU WON SOCK

International class (IPC 8–9): E04B1/30 E04C3/30 E04C5/01 (Advanced/Invention)

CPC: E04C3/36 E04B1/2403 E04B1/30 E04B1/585 E04C5/01

Classification Explorer

Cited documents: KR101261208 B1, KR101254983 B1, JP9291599, JP5214736,

Abstract:
Source: KR101577019B The present invention relates to a diaphragm installation structure disposed on a concrete filled steel tube (CFT) column for moment connection to a horizontal member such as a steel beam or the like; and a CFT column reinforcement structure to efficiently handle a bending moment stress caused by a horizontal weight. The diaphragm and horizontal stress reinforcement structure of a CFT column comprises: an outer steel pipe forming an outer skin of the CFT column, and restraining concrete filled therein; an inner steel pipe installed in an outer steel pipe separated from an inner surface of the outer steel pipe to reinforce hardness of the CFT column; and an upper and a lower diaphragm whose inside is attached to the inner steel pipe whose outside is exposed to the outside of the outer steel pipe to be attached to an upper and a lower flange of a steel beam. The inner steel pipe has an upper and a lower length extended from the upper and the lower diaphragm to a reinforcement range of a bending moment of the CFT column caused by a horizontal weight.

0) CN104314185A – CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND...

44) Family number: 58385497 (CN104314185A) © PatBase

Title: CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND STEEL BEAM JOINT CONNECTING STRUCTURE

Priority: CN201410637964 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314185 A	20150128	CN201410637964	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105040834,

Abstract:
Source: CN104314185A The invention discloses a concrete filled square steel tubular column and steel beam joint connecting structure, and belongs to the technical field of building structure engineering. The joint connecting structure comprises a concrete filled square steel tube, an H–shaped steel beam, two L–shaped plates and a supporting plate positioned below the H–shaped steel beam, the two L–shaped plates are symmetrically positioned on two sides of a web plate of the H–shaped steel beam, one outer L surface of each L–shaped plate is welded on the square steel tube, the other outer L surface of each L–shaped plate is connected with the web plate of the H–shaped steel beam in a bolted manner, one end of the supporting plate is a U–shaped inserting end, the square steel tube is provided with a jack matched with the inserting end, the inserting end is inserted into the jack and welded on the square steel tube, a vertical reinforcing plate is arranged at the bottom of the supporting plate, and the top of the supporting plate is connected with a lower flange plate of the H–shaped steel beam in a bolted manner. The joint connecting structure is higher in stability, and connectors are convenient to manufacture.

0) WO13168049A1 – MODULAR BUILDING SYSTEM SYSTEME DE CONSTRUCTIO...

45) Family number: 55155997 (WO13168049A1) © PatBase

Title: MODULAR BUILDING SYSTEM

Priority: ZA20120003277 20120507

Family:

Publication number	Publication date	Application number	Application date
WO13168049 A1	20131114	WO2013IB53415	20130430

Probable Assignee: BACON BRIAN

Assignee(s):(std)**:** BACON BRIAN

Inventor(s):(std)**:** PAIZEE BASILE

Agent(s): CREASE VANESSA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04C2/26 E04C3/34 (Advanced/Invention)

CPC: E04C3/34 E04C2002/3488

Classification Explorer

Cited documents: US5706620 A, US4239176 A, US2142523 A, GB2180860 A1,

Abstract:
A building structure is disclosed which comprises a hollow column (10) including planks (12.1, 12.2, 12.3) and a building panel (18). The panel comprises vertical and horizontal beams (20.1, 20.2) which form a frame which has cladding sheets (40, 42) secured to it. Components of the column (12.1, 14, 12.3) overlap with components (22.1, 30) of the building panel to permit the column and the panel to be secured together.

0) WO9834869A1 – ELEVATOR, SPECIALLY FOR LINKING DIFFERENT STORI...

46) Family number: 18993653 (WO9834869A1) © PatBase

Title: ELEVATOR, SPECIALLY FOR LINKING DIFFERENT STORIES IN BUILDINGS, AND METHOD FOR ITS PRODUCTION

Priority: DE19971004814 19970208 DE19971004814 19970208 DE19981005189 19980209 DE19971020763 19970517 DE19971020763 19970517 DE19971051831 19971122 WO1998DE00330 19980206 WO1998DE00331 19980206 DE19981005230 19980209 DE19981080100 19980206 DE19981080101 19980206 DE19985004314 19980206 DE19985006531 19980206

Family:

Publication number	Publication date	Application number	Application date
AT218500 E	20020615	AT19980909343T	19980206
AT228965 E	20021215	AT19980909342T	19980206
AU199863916 A1	19980826	AU19980063916	19980206
AU199863917 A1	19980826	AU19980063917	19980206
DE19805189 A1	19980813	DE19981005189	19980209
DE19805230 A1	19980813	DE19981005230	19980209
DE19880100 D2	20000330	DE19981080100	19980206
DE19880101 D2	20000316	DE19981080101	19980206
DE59804314 D1	20020711	DE19985004314	19980206
DE59806531 D1	20030116	DE19985006531	19980206
EP0958225 A1	19991124	EP19980909343	19980206
EP0958225 B1	20020605	EP19980909343	19980206
EP0958230 A1	19991124	EP19980909342	19980206
EP0958230 B1	20021204	EP19980909342	19980206
WO9834869 A1	19980813	WO1998DE00331	19980206
WO9834872 A1	19980813	WO1998DE00330	19980206

Probable Assignee: THIELOW FRANK 88285 BODNEGG DE

Assignee(s):(std)**:** FRANK THIELOW ; HERRMANN JOHANNES ; THIELOW FRANK

Assignee(s): THIELOW FRANK 88285 BODNEGG DE

Inventor(s):(std)**:** FRANK THIELOW ; THIELOW FRANK ; THIELOW FRANK W ; HERRMANN JOHANNES

Inventor(s): THIELOW FRANK 88285 BODNEGG DE

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): B66B7/02 B66F7/02 E04C3/32 E04C3/34 (Advanced/Invention); B66B7/02 B66F7/00 E04C3/30 (Core/Invention)

International class (IPC 1–7): B66B7/02 B66B9/02 B66F11/04 B66F7/02 B66F7/14 E04C3/30 E04H12/02 F16S3/04

CPC: B66F7/025 E04C3/32 E04C3/34

European class: B66F7/02B E04C3/32 E04C3/34

Classification Explorer

Cited documents: US5522671 A, US5066834 A, US4251993 A, US3963056 A, FR2188489 A5, EP0413393 A1, EP0309328 A1, DE4430034 A1, DE3634061 A1, DE3034907 A1, DE2658639 A1, CH630809 A3, CH630809,

Forward Citations: WO08031375, WO07048807, US8042452, DE102008029360, DE102005050990, DE102005050990, DE102005006920, DE10021884,

Abstract:
Disclosed is an elevator, specially for linking different stories in a building, which can be produced economically and with little effort. According to the invention, this is done in that at least a bearing column (1) comprises a shaped body (3) which at least partially consists of a flowable, hardenable material.

0) TW295126Y – JOINT APPARATUS FOR BEAM/COLUMN

47) Family number: 34338807 (TW295126Y) © PatBase

Title:	JOINT APPARATUS FOR BEAM/COLUMN
Priority:	TW19960204600U 19960328

Family:

Publication number	Publication date	Application number	Application date
TW295126 Y	19970101	TW19960204600U	19960328

Probable Assignee:	TSAI KE CHIUANTW
Assignee(s):(std):	TSAI KE CHIUAN ; YU RUEI TZUO
Assignee(s):	TSAI KE CHIUANTW
Inventor(s):(std):	TSAI KE CHIUAN ; YU RUEI TZUO
International class (IPC 8–9):	E04B1/24 (Advanced/Invention); E04B1/24 (Core/Non–invention)
International class (IPC 1–7):	E04B1/24

Classification Explorer

Abstract:
Source: TW295126Y The creation of devices and construction beams engaging a manner suitable for the bonding of steel beams in general construction and the use of a hybrid structure of reinforced concrete columns and steel beams engagement of use. The apparatus generally comprises a two–piece outer explicit transverse bulkheads, box beams rendezvous unit consists of four steel plates and consisting of a number of bonding shear plate components. This means that after the first rendezvous section steel beams and shear and transverse bulkhead adapter plate by welding combination is complete, then the beams, columns and member engagement. Column member can contact the steel columns, concrete filled steel tube column of the situation within–reinforced concrete columns or. If the engagement with the steel columns, places connected by welding steel column and transverse bulkheads. If the steel ribs of concrete columns, you can configure the appropriate cross the bulkhead reinforcement column of openings to make it through; In this case, box–section steel beams composed of the intersection can be provided in the beams and columns of reinforced concrete columns The other construction templates and functions required stirrups intersection portion. Joining it with steel beams, the use of shear bolts or mating adapter plate web girder of welded joints, and the like can be taken bolts, welding or mixed bolts and welding steel beams are three ways to engage the outer flange and the crossbeam engaging Nobuyuki board. Wherein the transverse bulkhead with steel beams at different heights but it engages the flap can pass the beam end moment to the column, shear bonding plate shear beam it can be transmitted to the column.

0) JP2017014713A – EXISTING CONCRETE STRUCTURE REINFORCEMENT STRUC...

48) Family number: 61846119 (JP2017014713A) © PatBase

Title: EXISTING CONCRETE STRUCTURE REINFORCEMENT STRUCTURE

Priority: JP20150129583 20150629

Family:

Publication number	Publication date	Application number	Application date
JP2017014713 A2	20170119	JP20150129583	20150629
JP5869717 B1	20160224	JP20150129583	20150629

Probable Assignee: SHINNIHON CORP

Assignee(s):(std)**:** MAKITANI EIJI ; SHINNIHON CORP

Assignee(s): MAKIDANI EIJI

Inventor(s):(std)**:** MAKITANI EIJI

International class (IPC 8–9): E04G23/02 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014136924 A2, JP2014136924, JP201126786, JP2011026786 A2, JP2008240368 A2, JP2008240368,

Forward Citations: JP6095187,

Abstract:
Source: JP2017014713A PROBLEM TO BE SOLVED: To provide an existing concrete structure reinforcement structure and an existing concrete structure reinforcement method, easy in assembly and installation with a simple structure, and capable of improving earthquake–resistant performance in an earthquake.SOLUTION: An existing concrete structure reinforcement structure is composed of a horizontal reinforcement frame of horizontally extending to an existing concrete column or an existing concrete beam 3 and connecting a cross–sectional L–shaped member 5 in a rectangular shape, a vertical reinforcement frame for connecting–fixing upper–lower end parts of a web part to a horizontal part of the horizontal reinforcement frame and composed of a cross–sectional T–shaped member arranged so as to vertically extend the web part and a flange part, a fiber sheet 14 wound on/fixed to the outer periphery of the horizontal reinforcement frame and the vertical reinforcement frame and concrete filled–solidified in a cavity of the horizontal reinforcement frame and the vertical reinforcement frame wound with the existing concrete column or the existing concrete beam 3 and the fiber sheet 14 and integrated with an existing concrete structure.SELECTED DRAWING: Figure 1

0) KR20150137181A – REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE ...

49) Family number: 61034203 (KR20150137181A) © PatBase

Title: REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE

Priority: KR20140064354 20140528

Family:

Publication number	Publication date	Application number	Application date
KR101636473 B1	20160706	KR20140064354	20140528
KR20150137181 A	20151209	KR20140064354	20140528

Probable Assignee: SAMSUNG EVERLAND INC

Assignee(s):(std)**:** SAMSUNG C AND T CORP ; SAMSUNG EVERLAND INC

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** SHINTANI KOHEI ; SHIN DONG SUNG ; PARK HAN NA ; LEE SEUNG JE ; LEE GYOU BOK ; KIM YONG KU ; KIM KYUNG WON ; KIM BYEONG JUN ; JUNG JAE EUN ; CHONG CHAE KWANG

International class (IPC 8–9): E04B1/30 E04C3/34 E04C5/16 (Advanced/Invention)

CPC: E04C3/36 E04B1/185 E04B1/30 E04C5/06 E04C5/18

Classification Explorer

Cited documents: KR20130105176 A, KR20130105176, KR20130102027 A, KR20130102027, KR20050054407 A, KR20050054407, JP2006118162 A2, JP2006118162,

Forward Citations: KR101720122,

Abstract:
Source: KR20150137181A The present invention provides an improved concrete–filled column comprising: an angular plate column (100) having an internal space (110) filled with concrete; a central member (200) installed in the internal space (110) in the longitudinal direction of the plate column (100); and a corner reinforcing member (300) having a corner of the plate column (100) to resist the lateral pressure caused by concrete with which the internal space (110) is filled. The central member (200) includes multiple L–shaped steels (210) formed in the edge of the internal space (110) and a connecting member (220) whose both ends are combined with a flange of the L–shaped steel (210). The present invention has an effect of ensuring the structural stability of a large–caliber concrete–filled column.

0) CN105951991A – PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM ...

50) Family number: 63590326 (CN105951991A) © PatBase

Title:	PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM
Priority:	CN201610397779 20160607

Family:

Publication number	Publication date	Application number	Application date
CN105951991 A	20160921	CN201610397779	20160607

Probable Assignee:	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):(std):	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):	SHANDONG ZHONGTONG STEEL STRUCTURE ENGINEERING CO ; SHANDONG STEEL CONSTRUCTION CO LTD
Inventor(s):(std):	HU SHUQING ; MA GUORUN ; WANG PEIJUN ; YUAN JIANCHENG ; ZHANG LULU
International class (IPC 8–9):	E04B1/14 E04B1/30 E04B1/343 E04B2/56 E04C3/08 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105951991A A prefabricated steel structure framework system comprises stand columns, a steel beam and a shear wall slab. Each stand column comprises a pipe column formed by welding peripheral steel plates, a concrete–filled layer and reinforcing ribs, wherein the pipe column is filled with concrete to form the concrete–filled layer, and the reinforcing ribs are arranged on the inner walls of the peripheral steel plates. The tops of the stand columns are connected with the two ends of the steel beam through friction type high–strength bolts, the cross section of the steel beam is in an H shape, the steel beam comprises an upper flange plate, a lower flange plate and a web for connecting the upper flange plate and the lower flange plate, the web is provided with holes, and a pipeline is arranged through the holes in the web. The shear wall slab is hinged to the outer sides of the peripheral steel plates of the pipe columns and provided with inclined long–strip holes. Hinging is adopted for framework beam–column joints, vertically–distributed force and horizontally–distributed force in the framework shear wall structure system are separated, stress is definite, the energy dissipation performance of the joints is improved, the deformation of the joints is improved, and too early fracture damage of the joints is avoided.

0) WO06031001A1 – STEEL–CONCRETE SANDWITCH TYPE HYBRID BEAM AND H...

51) Family number: 33636686 (WO06031001A1) © PatBase

Title: STEEL–CONCRETE SANDWITCH TYPE HYBRID BEAM AND HIGH STRENGH HYBRID STRUCTURE SYSTEM USING THE SAME

Priority: KR20040073688 20040915

Family:

Publication number	Publication date	Application number	Application date
KR20060024850 A	20060320	KR20040073688	20040915
WO06031001 A1	20060323	WO2004KR03206	20041208

Probable Assignee: SAMSUNG CORP

Assignee(s):(std)**:** KIM JONG SAN ; KIM SOO YOUNG ; LEW YOUNG KEE ; SAMSUNG C AND T CORP ; SAMSUNG CORP

Inventor(s):(std)**:** KIM JONG SAN ; KIM SOO YOUNG ; LEW YOUNG KEE

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04C3/29 E04C3/293 (Advanced/Invention); E04C3/293 (Advanced/Non–invention); E04C3/29 (Core/Invention)

International class (IPC 1–7): E04C3/293

CPC: E04B5/43 E04C3/293

European class: E04B5/43 E04C3/293

Classification Explorer

Cited documents: WO02099215 A1, KR20010028919 A, JP61165452 A2, JP61065116 U1, JP50081017 U1, JP4254646 A2,

Forward Citations: KR101612623, KR101320571, KR100802515, ITUD20120188, FR2925088, CN105155774, CN104563391, CN104060761, CN104060761,

Abstract:
Disclosed herein are a steel–concrete sandwich–type hybrid beam and a high strength hybrid structure system using the same. A shape steel member is arranged in pairs in both sides of the beam and a concrete is filled between the pair of shape steel members, and thus a high rigidity and high damping performance of RC frame and a construction efficiency of steel framing can be achieved simultaneously. Therefore, a convenience of construction and a good improved structural rationality can be obtained, thus reducing the construction cost, as compared with the conventional RC and PC beams having the same rigidity. The steel–concrete sandwich–type hybrid beam is formed of a steel member and a concrete member. A pair of lateral shape steel member forming both side faces of the hybrid beam is provided. A filled concrete is placed and cured between the pair of lateral shape steel members. The lateral shape steel members are disposed in parallel at regular intervals along the longitudinal direction of the hybrid beam.

0) CN202831232U – CONNECTED NODE OF PROTRACTING INNER DIAPHRAGM S...

52) Family number: 53357853 (CN202831232U) © PatBase

Title: CONNECTED NODE OF PROTRACTING INNER DIAPHRAGM STEEL GIRDER AND CONCRETE–FILLED STEEL–TUBULAR COLUMNS CONTAINING A PIPE COAT

Priority: CN201220398384U 20120813

Family:

Publication number	Publication date	Application number	Application date
CN202831232 U	20130327	CN201220398384U	20120813

Probable Assignee: HUANG ZHIHUI

Assignee(s):(std)**:** HUANG ZHIHUI ; LIU CHENGJIAN

Inventor(s):(std)**:** HUANG ZHIHUI ; LIU CHENGJIAN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104846752, CN104846752,

Abstract:
Source: CN202831232U An overhanging steel beams with interior diaphragms containing coat steel tube concrete column connecting node, the core contains circular steel jacket steel tube concrete columns in the core area of the nodes through which a peripheral pipe disconnected node core area, In the off position extending from the outer core has a circular steel pipe separator, the separator is exposed inner peripheral pipe, welded steel pipe and connected to the periphery, is provided with internal baffles and peripheral pipe enclosed within an area under the core area of the steel fin tablets, the core area of steel fins, internal baffles, steel beam steel beam flange and web plug welding connection, the core area of the steel fins and steel beams are connected by webs fillet, the plastic hinge region containing coat steel pipe concrete column above and below the inner spacer provided with plastic hinge zone steel fins. To resolve the Enhanced confined concrete filled steel tubular column – steel beam connections problems of energy dissipation capacity, and can be widely used in high structures or seismic reinforcement of old buildings renovation project.

0) JP2013079508A – BEAM–COLUMN CONNECTION OF RIGID–FRAME

53) Family number: 54066432 (JP2013079508A) © PatBase

Title: BEAM–COLUMN CONNECTION OF RIGID–FRAME

Priority: JP20110219201 20111003

Family:

Publication number	Publication date	Application number	Application date
JP2013079508 A2	20130502	JP20110219201	20111003
JP5741356 B2	20150701	JP20110219201	20111003

Probable Assignee: NIPPON STEEL AND SUMITOMO METAL CORP

Assignee(s):(std)**:** NIPPON STEEL AND SUMITOMO METAL ; NIPPON STEEL AND SUMITOMO METAL CORP

Inventor(s):(std)**:** SUZUKI ITARU ; TSUKUDA KATSUO

International class (IPC 8–9): E04B1/24 E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2010222943 A2, JP2010222943, JP2008127798 A2, JP2008127798, JP2004044208 A2, JP2004044208, JP2001207533 A2, JP2001207533,

Forward Citations: CN104775525, CN104196128, CN104100005, CN104047364, CN104047363, CN103953123, CN103938735, CN103924680, CN103924680, CN103924677, CN103924677, CN103882993, CN103821280, CN103790243, CN103469902, CN103469902, CN103469892, CN103397695, CN103276803, CN103276793,

Abstract:
Source: JP2013079508A PROBLEM TO BE SOLVED: To provide a beam–column connection of a rigid–frame composed of a column of steel structure, steel framed reinforced concrete structure, or concrete filled steel tube structure and an H–shaped steel beam, which prevents early rupture of a weld zone from occurring at a beam end by flexural tensile stress, with easy construction and at favorable cost.SOLUTION: The upper and lower flanges 2a and 2b of a beam 2 formed of an H–shaped steel are weld connected to the side face part of the beam connection part of a column 1 formed of a square steel tube. The side face part of the flange 2a is provided with a hole 9 at the position about 50 to 90 mm away from the weld part 9 at the flange end of the beam 2 toward the beam center, with a predetermined depth in the direction perpendicular to the axis of the beam 2. Both of the side face parts of the upper and lower flanges are provided with one or plurality of holes 9. The hole 9 is formed with a hand drill or the like.

0) CN104314184A – HIGH–STABILITY STEEL BEAM AND STEEL COLUMN JOIN...

54) Family number: 58385484 (CN104314184A) © PatBase

Title: HIGH–STABILITY STEEL BEAM AND STEEL COLUMN JOINT STRUCTURE

Priority: CN201410637963 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314184 A	20150128	CN201410637963	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104314184A The invention discloses a high–stability steel beam and steel column joint structure, and belongs to the technical field of building structure engineering. The joint structure comprises a concrete filled square steel tube, an H–shaped steel beam and two supporting plates, the supporting plates are positioned above and below the H–shaped steel beam respectively, one end of each supporting plate is a U–shaped inserting end, the square steel tube is provided with jacks matched with the inserting ends, the inserting ends are inserted into the jacks and welded on the square steel tube, a vertical reinforcing plate is arranged on one surface of each supporting plate, the other opposite surface of each supporting plate is a mounting surface, and the mounting surfaces of the two supporting plates are connected with an upper flange plate and a lower flange plate of the H–shaped steel beam in a bolted manner. The joint structure is higher in stability, and connectors are convenient to manufacture.

0) KR20060102786A – IMPROVED RIGID JOINT STRUCTURE OF CFT PRECAST C...

55) Family number: 34150806 (KR20060102786A) © PatBase

Title: IMPROVED RIGID JOINT STRUCTURE OF CFT PRECAST CONCRETE COLUMN UNIT AND STEEL BEAM

Priority: KR20050024728 20050325

Family:

Publication number	Publication date	Application number	Application date
KR101132213 B1	20120330	KR20050024728	20050325
KR20060102786 A	20060928	KR20050024728	20050325

Probable Assignee: DONGGUK UNIV IND ACADEMIC COOPERATION FOUNDATION

Assignee(s):(std)**:** DONGGUK UNIV IND ACADEMIC COOPERATION FOUNDATION ; YU SUNG YONG

Inventor(s):(std)**:** YU SUNG YONG

International class (IPC 8–9)**:** E04B1/30 E04B1/58 (Advanced/Invention); E04B1/30 E04B1/58 (Advanced/Non–invention); E04B1/30 E04B1/58 (Core/Invention)

Classification Explorer

Cited documents: JP7166611, JP5339986,

Forward Citations: CN104032838, CN103758220, CN103015533, CN102352655,

Abstract:
Source: KR101132213B The present invention relates to a pre–cast concrete columns and steel beams form relates to a coupling structure tubular (tube) of the through–holes 32 and through the threaded hole (29) so as to be exposed from one side of the predetermined height, the washer 20 and the nut 22 is fastened to the coupler is embedded reinforcement (19) Precast concrete pillars (16) and; flange or the upper surface of the one side end of the transfer block (21, comprising respectively constructed in the bonded steel beams (17, 17') and the through hole 31 of the transfer block (21) threaded hole 29 of the pillar by tightening the bolt 23 and the steel beams (17) Precast concrete pillars (16) is configured so that the steel junction. Joining the columns and beams at the construction by tightening bolt 23 simply, so it is possible to efficiently produce speed and ease of construction, and which can improve the accuracy and the refractive index of air, such as shortening. Precast concrete pillar 16 and the steel beams (17, 17') at the junctions of the one side end of the transfer block (21, comprising is variously depending on the length of the flange may be applied to steel beams, steel beams produced in a factory using precast concrete columns, pillars and beams reinforced machining quality improvement, as well as being not economics due to the material costs special advantages which can dramatically improve. In addition, the pole in the cross–sectional performance are excellent rectangular steel tube by using the torsional stiffness and strength as well as the local buckling of the steel beams for high bending load, there is an advantage that can effectively deal with such situations. Keywords, a pillar connection precast concrete (transfer block), splice junction cheolgolbo cheolgolbo (3) flange, a tubular steel tube coupler, web, CFT (Concrete filled tube) Columns

0) DD254612A – BIEGESTEIFE VERBINDUNG ZWISCHEN STABFOERMIGEN B...

56) Family number: 5935705 (DD254612A) © PatBase

Title: BIEGESTEIFE VERBINDUNG ZWISCHEN STABFOERMIGEN BAUELEMENTEN
BENDING STIFFNESS CONNECTION BETWEEN BAR–SHAPED STRUCTURAL ELEMENTS (Machine translation)

Priority: DD19860297521 19861212

Family:

Publication number	Publication date	Application number	Application date
DD254612 A1	19880302	DD19860297521	19861212

Probable Assignee: METALLEICHT BAUKOMBINAT FORSCH

Assignee(s):(std)**:** METALLEICHT BAUKOMBINAT FORSCH

Assignee(s): VEB METALLEICHT BAUKOMBINAT FORSCHUNGSINSTITUT DD

Inventor(s):(std)**:** HUELS HANS WERNER ; SAMMET HORST ; STELZER EGON

Inventor(s): STELZER EGON DD ; SAMMET HORST DD ; HUELS HANS WERNER DD

International class (IPC 8–9): E04B1/38 (Advanced/Invention); E04B1/38 (Core/Invention)

International class (IPC 1–7): E04B1/38

Classification Explorer

Abstract:
Source: DD254612A [Source: Claim 1] 1. Biegesteife Verbindung zwischen stabfoermigen Bauelementen, insbesondere aus Stahlprofilen und Beton zusammengesetzten Verbundelementen von Stahlbeton–Verbundkonstruktionen in rahmenartiger Skelettbauweise, dadurch gekennzeichnet, dass im Eckbereich eines anzuschliessenden Verbundtraegers (2) ein mittig sitzendes Stegblech (3) zwischen den Stahlprofilen des Verbundtraegers (2) angeordnet ist und an dem einer Verbundstuetze (1) zu gewandten anzuschliessenden Ende des Verbundtraegers (2) eine mit in den Stahlprofilbereichen angeordneten Bohrungen versehene Stirnplatte (4) angeschweisst ist sowie im jeweiligen Bereich der anzuschliessenden Stahlprofile des Verbundtraegers (2), den Querschnitt der Verbundstuetze (1) in seiner vollen Breite durchdringend oder teilweise eingelassen und mit den Stahlprofilen der Verbundstuetze (1) verschweisste Rohrhuelsen (6) angeordnet sind, in denen mit Gewinde versehene Schraubbolzen (7), die Stirnplatte (4) des Verbundtraegers (2) erfassend, eine kraftschluessige Verbindung zwischen Verbundtraeger (2) und Verbundstuetze (1) herstellend, gefuehrt sind. [Source: claim 1] 1 bending rigidity connection between bar–shaped structural elements, especially from steel and concrete composite composite elements of steel concrete composite structures in frame–like skeleton, characterized by the fact that a centrally seated bridge plate (3) between the steel sections of the composite beam (2) is located in the corner of a connected composite beam (2) and (1) applied to the a composite column connected end of composite beam (2) one with holes arranged in the fields of steel profile bearing face plate (4) is welded on, as well as in the respective area of connected steel profiles of the composite beam (2), the cross section of the composite column (1) in its full width penetrating or partially recessed and welded to the steel profiles of composite column (1) pipe sleeve (6) are arranged, with threaded sided bolt (7), the face plate (4) of the beam of of composite (2) gathering, making a non–positive connection between composite beams (2) and composite column (1), are required.

0) GB878158A – APPARATUS FOR THE STORAGE OF FLUIDS

57) Family number: 20791766 (GB878158A) © PatBase

Title: Apparatus for the storage of fluids

Priority: GB19580031021 19580929

Family:

Publication number	Publication date	Application number	Application date
GB878158 A	19610927	GB19580031021	19580929

Probable Assignee: MECHELIN JOEL LANGLEY ROGERS

Assignee(s):(std)**:** BRITISH PETROLEUM CO ; GEORGE BRUCE MARRIOTT ; MECHELIN JOEL LANGLEY ROGERS

Assignee(s): THE BRITISH PETROLEUM COMPANY LIMITED

International class(IPC 8–9)**:** B63B35/44 B65D88/78 (Advanced/Invention); B63B35/44 B65D88/00 (Core/Invention)

International class(IPC 1–7)**:** B63B35/44 B65D88/78

CPC: B63B35/44 B65D88/78

European class: B63B35/44 B65D88/78

Classification Explorer

Forward Citations: FR2586227,

Abstract:
Source: GB878158A 878,158. Submerged tanks. BRITISH PETROLEUM CO. Ltd., MARRIOTT, G. B., and ROGERS, M. J. L. Dec. 29, 1959 [Sept. 29, 1958], No. 31021/58. Class 68(2). [Also in Group XXXIII] Open bottom tanks for storage of fluids having a lower specific gravity than water and which are of low miscibility therewith comprising a roof capable of floating on water (see Group XXXIII) and a skirt of sheet material depending virtually therefrom, may be used in the submerged condition. The tank in Fig. 8 comprises a pontoon 44, skirt 42, and a sleeve 46 in which an anchor post 47 is a sliding fit. The pontoon has an air connection 51, and a water connection 52, admission of water causing the tank to sink until held by pipes 48 extending from the bed of the waterway. The tank 27 in Fig. 7 has a roof 30 and skirt 28 of flexible material and a flexible inflatable tube 31, and is secured by hawsers 36. The tank 54 in Fig. 9 is incorporated with an off shore platform 55 and comprises a pontoon roof 58 and skirt 56. The platform 55 has legs 63 with stops 62. The tank has sleeves 60, 61 surrounding the legs 63 to prevent upward, downward and lateral movement of the tank.

0) KR20090105512A – CONCRETE FILLED STEEL TUBE

58) Family number: 43817471 (KR20090105512A) © PatBase

Title: CONCRETE FILLED STEEL TUBE

Priority: KR20080031009 20080403

Family:

Publication number	Publication date	Application number	Application date
KR20090105512 A	20091007	KR20080031009	20080403

Probable Assignee: CHOI JIN WOOK

Assignee(s):(std)**:** CHOI JIN WOOK

Inventor(s):(std)**:** CHOI JIN WOOK

International class (IPC 8–9)**:** E04B1/30 E04B1/38 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104047365,

Abstract:
Source: KR20090105512A PURPOSE: A connection structure of a steel cast and a beam is provided to correct a deviated welding surface by loosening the bolts fastening reinforcement plates and the beam, thereby improving welding accuracy. CONSTITUTION: A connection structure of a steel cast and a beam comprises upper and lower reinforcement plates(40,44) which are welded to the outside surface of a steel column(10) of upper and lower flanges(31,32) on the end of a beam(30). The upper reinforcement plate has a cutout groove so that the upper reinforcement plate is fitted in the vertical web of the beam and placed beneath the upper flange, corresponding to a diaphragm(20). The upper and lower reinforcement plates and the upper and lower flanges are connected by bolts, respectively.

0) CN201474166U – CONCRETE COLUMN FOR THIN–WALLED STEEL SECTION C...

59) Family number: 45075528 (CN201474166U) © PatBase

Title: Concrete column for thin–walled steel section composite steel tube

Priority: CN200920139635U 20090728

Family:

Publication number	Publication date	Application number	Application date
CN201474166 U	20100519	CN200920139635U	20090728

Probable Assignee: HUAFEI DUAN

Assignee(s):(std): HUAFEI DUAN

Assignee(s): DUAN HUAFEI

Inventor(s):(std): HUAFEI DUAN

Inventor(s): DUAN HUAFEI

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Forward Citations: WO15106476, WO15106472, WO15106469, CN104264904, CN103758358, CN103758358, CN103276851, CN103276851,

Abstract:
Source: CN201474166U The utility model discloses a concrete column for a thin–walled steel section composite steel tube, which comprises one or more pairs of channel steel arranged by clasping and concrete filled in the hollow cavities of the channel steel. Reinforcing ribs are arranged on the contact surfaces of the channel steel and concrete. The reinforcing ribs arranged on the contact surface of the channel steel and the concrete are helpful for increasing the local stability of a lipped channel steel flange and a web plate, so that the cross sections of the composite member are all valid. Meanwhile, the channel steel is equivalent to a stirrup and a longitudinal bar of a concrete component.

0) CN106013518A – ASSEMBLY TYPE CONCRETE COLUMN PARTIALLY AND EXT...

60) Family number: 63751472 (CN106013518A) © PatBase

Title: ASSEMBLY TYPE CONCRETE COLUMN PARTIALLY AND EXTERNALLY WRAPPED BY H–SHAPED STEEL AND ENERGY DISSIPATION STEEL PLATE SHEAR WALL STRUCTURE

Priority: CN201610393606 20160603

Family:

Publication number	Publication date	Application number	Application date
CN106013518 A	20161012	CN201610393606	20160603

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** CHEN FENG ; NAN YANG ; SANG SHENGTAO ; WU KAI ; ZHANG HE

International class(IPC 8–9)**:** C04B14/02 C04B14/06 C04B14/42 C04B18/08 C04B24/42 C04B28/00 E04B1/98 E04B2/60 E04H9/02 (Advanced/Invention)

CPC: Y02W30/92

Classification Explorer

Abstract:
Source: CN106013518A The invention discloses an assembly type concrete column partially and externally wrapped by H–shaped steel and energy dissipation steel plate shear wall structure. The shear wall structure comprises frame columns, transverse beams and a shear wall. Each frame column comprises H–shaped steel, a plurality of transverse pull bars fixed to flange plates on the two sides of the H–shaped steel in the length direction of the H–shaped steel, concrete filled up into an accommodating cavity formed by webs of the H–shaped steel and the flange plates, side plates welded to the beam–column joints and attachment plates welded to the flange plates of the H–shaped steel. Each transverse beam comprises an H–shaped steel plate, restraint pull bars fixed to flange plates on the two sides of the H–shaped steel plate in the length direction of the H–shaped steel plate and end plates fixed to the tail ends of the H–shaped steel plate. A steel plate is adopted as the shear wall. The two ends of the shear wall are fixedly connected with the attachment plates through clamping plates. The seismic performance and deformability of the frame shear wall can be effectively improved, the self–weight of the structure can be effectively lowered, seismic response can be reduced, the foundation cost is cut, and the shear wall structure is particularly suitable for reinforcement and reconstruction of existing buildings.

0) KR101622522B – CONCRETE FILLED STEEL TUBE COLUMNS USING H–BEAM...

61) Family number: 62410411 (KR101622522B) © PatBase

Title: CONCRETE FILLED STEEL TUBE COLUMNS USING H–BEAM AND BENDING IRON PLATE

Priority: KR20150157941 20151111

Family:

Publication number	Publication date	Application number	Application date
KR101622522 B1	20160519	KR20150157941	20151111

Probable Assignee: JINHEUNG

Assignee(s):(std)**:** JINHEUNG

Assignee(s): CONSTRUCTION IND DEVELOPMENT CO LTD

Inventor(s):(std)**:** CHO SUN JA ; JEON JEONG WOO ; JEONG JU HERN ; JUNG SUNG HEE ; PARK YOUNG GU

International class (IPC 8–9): E04B1/30 E04C3/36 (Advanced/Invention)

CPC: E04C3/36 E04B1/30

Classification Explorer

Cited documents: KR20110007796, KR20100127902,

Abstract:
Source: KR101622522B The present invention relates to CFT (concrete filled steel tube) columns using an H–beam and a bent steel plate and, more specifically, to CFT columns using an H–beam and a bent steel plate with a structure of connecting an inner frame and an outer frame by welding the bent steel plate to the H–beam, having highly superior constructability and improved structural capability. The square CFT columns in which a concrete is casted comprise: a pair of C–shaped bending plates arranged to face each other; and an H–beam with web and flanges formed on two ends of web, inserted into the bent steel plates, and welded while the flanges are in contact with inner surfaces of the bent steel plates. A T–shaped reinforcing steel is welded on the inner surface of the bent steel plates, and stud bolts are fixated on the two sides of web of the H–beam to fix the casted concrete in the H–beam. The bent steel plates of a fire–resistant steel material are welded on outer surfaces of the flange ends of the H–beam, respectively.

0) WO07100226A1 – COMPOSITE BEAM FOR GIRDER POUTRELLE COMPOSITE

62) Family number: 35863954 (WO07100226A1) © PatBase

Title: COMPOSITE BEAM FOR GIRDER

Priority: KR20060019786 20060302 KR20060096984 20061002 WO2007KR01051 20070302

Family:

Publication number	Publication date	Application number	Application date
KR100729370 B1	20070615	KR20060096984	20061002
VN11302 A1	20130527	VN20080002384	20070302
WO07100226 A1	20070907	WO2007KR01051	20070302

Probable Assignee: SIM JUN HWAN

Assignee(s):(std)**:** SIM JUN GI ; SIM TAE YOUNG ; SIM JUN KI ; SIM JUN HWAN ; KOREA BRIDGE LAB CO LTD

Assignee(s): KOREA BRIDGE LABORATORY CO ; KOREA BRIDGE LABORATORY CO LTD

Inventor(s):(std)**:** SIM JUN GI ; SIM JUN KI ; SIM TAE YOUNG

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KZ LA LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04C3/293 (Advanced/Invention); E04C3/293 (Advanced/Non–invention); E04C3/29 (Core/Invention)

International class (IPC 1–7): E04C3/293

CPC: E04B5/29 E04B5/48 E04C3/293 E04C3/065

European class: E04B5/29 E04B5/48 E04C3/06H E04C3/293

Classification Explorer

Cited documents: KR20050063280 A, KR20050052245 A, KR20040072147 A, KR20030048849 A, KR20000030231 A, JP8232400 A2, JP2003003603 A2, JP10292626 A2,

Forward Citations: KR101223942,

Abstract:
There is provided a composite girder having a box–shaped steel member filled with concrete, including: an outer steel member having a blocked–out empty space in a lower portion of the composite girder by forming a hollow penetrating portion penetrating in a transverse direction between both ends; and inner–side concrete filling an inner space of the outer steel member excluding the hollow penetrating portion without using reinforcing rods. Accordingly, it is possible to effectively resist tensile stress in a DD of the girder and to efficiently cope with vibration and drooping. Since a space occupied by objects such as facility pipes disposed under the girder can be removed, an inter–floor height of a building can be optimally used, and thus, usability can be improved. In addition, the composite girder can be used as a bridge girder capable of optimizing the bridge height.

0) KR200387927Y – IMPROVED RIGID JOINT STRUCTURE OF CFT PRECAST C...

63) Family number: 46634932 (KR200387927Y) © PatBase

Title: IMPROVED RIGID JOINT STRUCTURE OF CFT PRECAST CONCRETE COLUMN UNIT AND STEEL BEAM

Priority: KR20050008132U 20050325

Family:

Publication number	Publication date	Application number	Application date
KR200387927 Y1	20050628	KR20050008132U	20050325

Probable Assignee: YOO SEUNG RYONG

Assignee(s): YOO SEUNG RYONG

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention); E04B1/30 E04B1/58 (Advanced/Non–invention)

International class (IPC 1–7): E04B1/30 E04B1/58

CPC: E04B1/185 E04B1/40

Classification Explorer

Forward Citations: KR101583338, KR101124446,

Abstract:
Source: KR200387927Y Precast concrete columns with this steel–frame structure combining the types seen as pillars of octagonal steel pipe (Still Tube) of balls (32) as punters through the constant height (29) from being exposed in terms of the work of the combined district (20) and the washer nut (22) and the reinforced (19) the precast concrete pillars of the landfill (16); According to the flanges, side, top, or fleet transfer block (21, 21 ') are laminated steel, respectively (17, 17) consists of the penetration depth of the aforementioned transfer block (21) ball (31) reminded poles or through the punters (29) bolt (23) precast concrete columns by fastening (16) and steel (17) is configured to the River Junction. Are you simply bolt at the junction of the Poles (23) signed a construction so efficient can help improve production speed and precision, such as the shortening of the ease of construction, air can bring. Precast concrete columns (16) and steel (17, 17) are in the junction block, fleet's transfer (21, 21 ') to various depending on the length of the flange of the steel frame can be applied to a beam, factory–produced precast concrete pillars are steel reinforced pillar and beam processing using not in the field, as well as improve the quality by reducing material costs dramatically improve the affordability of the distinct advantages that can be. There is also a section on the pillars by using the hexagonal steel pipe performance excellent torsional rigidity and local bucking history as well as the steel frame of the high bending load has the advantage that you can react effectively. Precast concrete, Poles connection (transfer block), Splice Junction, are steel frame flange, steel, steel pipe beam Webs (Steel Tube), the combined district, CFT (Concrete Filled Tube) pillar

0) CN202831233U – CONNECTED NODE OF PROTRACTING INNER DIAPHRAGM S...

64) Family number: 53357860 (CN202831233U) © PatBase

Title: CONNECTED NODE OF PROTRACTING INNER DIAPHRAGM STEEL GIRDER AND CONCRETE–FILLED STEEL–TUBULAR COLUMNS INSCRIBED A PIPE COAT

Priority: CN201220398546U 20120813

Family:

Publication number	Publication date	Application number	Application date
CN202831233 U	20130327	CN201220398546U	20120813

Probable Assignee: HUANG ZHIHUI

Assignee(s):(std)**:** HUANG ZHIHUI ; LIU CHENGJIAN

Inventor(s):(std)**:** HUANG ZHIHUI ; LIU CHENGJIAN

International class (IPC 8–9)**:** E04B1/58 E04B1/98 E04G23/02 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104775525, CN103993670, CN103711217, CN103711217, CN103216014, CN103216006,

Abstract:
Source: CN202831233U Extended diaphragms within a steel girder and the inner tube connected to coat steel concrete column connection node, then the inner tube outer core circular steel pipe concrete columns in the core area of the node through peripheral pipe disconnected Joints In disconnect parts have internal baffles extending from the outer core circular tube, the inner periphery of the separator exposed pipe, welded steel pipe and connected peripherals, and peripheral steel internal baffles inside the enclosed area under radially provided with a core area steel fins, the core area of the steel fins, internal baffles, steel beam steel beam flange and web plug welding connection, the core area of the steel fins and steel beams are connected by webs fillet, Inscribed above the bulkhead and the inner tube below the outer steel pipe concrete column is provided with the full length of the pillar steel fins. To resolve the Enhanced confined concrete filled steel tubular column – steel beam connections problems of energy dissipation capacity, and can be widely used in high structures or seismic reinforcement of old buildings renovation project.

0) CN105735464A – ASSEMBLED COMBINING STRUCTURE AND MOUNTING METH...

65) Family number: 62852661 (CN105735464A) © PatBase

Title: ASSEMBLED COMBINING STRUCTURE AND MOUNTING METHOD THEREOF

Priority: CN201610278344 20160503

Family:

Publication number	Publication date	Application number	Application date
CN105735464 A	20160706	CN201610278344	20160503

Probable Assignee: UNIV FUZHOU

Assignee(s):(std)**:** FUZHOU UNIV ; UNIV FUZHOU

Inventor(s):(std)**:** LI ZENGFENG ; QIAN HAIMIN ; ZHUANG YIZHOU

International class (IPC 8–9)**:** E04B1/00 E04B1/38 E04B1/58 E04G21/14 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105735464A The invention relates to an assembled combining structure and a mounting method thereof. The assembled combining structure comprises a steel pipe and concrete combined column which is composed of a steel pipe and concrete filled in the steel pipe, an H–shaped steel frame is arranged on the side wall of the combined column, a reinforced concrete plate is arranged on a steel beam, a through hole allowing the combined column to penetrate is formed in the reinforced concrete plate, and the reinforced concrete plate is fixedly connected on an upper flange through a plurality of bolt shear–resistant connecting members. The assembled combining structure is simple and firm in structure and convenient to mount and transport.

66) Family number: 65303780 (CN206054183U) © PatBase

Title:	A combined wind power Tower (Machine translation)
Priority:	CN201620945575U 20160826

Family:

Publication number	Publication date	Application number	Application date
CN206054183 U	20170329	CN201620945575U	20160826

Probable Assignee:	GUANGDONG MINGYANG WIND POWER IND GROUP CO LTD
Assignee(s):	GUANGDONG MINGYANG WIND POWER IND GROUP CO LTD
International class (IPC 8–9):	F03D13/20 F03D13/40 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN206054183U This practical new public has a combined wind power tower frame, main by upper steel business Tower tube and middle transition platform and lower pipe concrete bracket composition; by said transition platform of Shang surface set has for installation upper steel business Tower tube of upper flange, its Xia surface set has for connection lower pipe concrete bracket of lower flange, the upper flange and transition platform Zhijian used strengthening rib for reinforcement; by said lower pipe concrete bracket main by more root pillar composition, And 22 by inclined support and connecting flange between the pillars, each pillar and the inclined support internal perfusion that concrete. This utility uses the traditional steel towers combined with concrete–filled steel tube Tower way, using concrete to increase frame stiffness and frequency, reducing the deformation of the tower to overcome the local buckling of steel tower was prone to problems.

0) CN104314168A – BUILDING FRAME WITH HIGH–STABILITY BEAM–COLUMN ...

67) Family number: 58385261 (CN104314168A) © PatBase

Title: BUILDING FRAME WITH HIGH–STABILITY BEAM–COLUMN JOINTS

Priority: CN201410637865 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314168 A	20150128	CN201410637865	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104314168A The invention discloses a building frame with high–stability beam–column joints, and belongs to the technical field of building structure engineering. The building frame comprises four vertical columns, beams and two supporting plates, the beams are connected with adjacent vertical columns, the vertical columns are concrete filled square steel tubes, the beams are H–shaped steel beams, the supporting plates are positioned above and below the H–shaped steel beams respectively, one end of each supporting plate is a convex inserting end, the square steel tubes are provided with jacks matched with the inserting ends, the inserting ends are inserted into the jacks and welded on the square steel tubes, a vertical reinforcing plate is arranged on one surface of each supporting plate, the other opposite surface of each supporting plate is a mounting surface, and the mounting surfaces of the two supporting plates are connected with upper flange plates and lower flange plates of the H–shaped steel beams in a bolted manner. The building frame is higher in stability, and connectors are convenient to manufacture.

0) CN104314183A – BUILDING FRAME STRUCTURE

68) Family number: 58385467 (CN104314183A) © PatBase

Title:	BUILDING FRAME STRUCTURE
Priority:	CN201410637915 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314183 A	20150128	CN201410637915	20141113

Probable Assignee:	CAO NIANJUN
Assignee(s):(std)**:**	CAO NIANJUN
Assignee(s):	JUN CAO YEARS
Inventor(s):(std)**:**	CAO NIANJUN
International class (IPC 8–9):	E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105040834,

Abstract:
Source: CN104314183A The invention discloses a building frame structure, and belongs to the technical field of building structure engineering. The building frame structure comprises four vertical columns, beams, L–shaped plates and supporting plates, the beams are connected with the adjacent vertical columns, the vertical columns are concrete filled square steel tubes, the beams are H–shaped steel beams, the L–shaped plates are symmetrically arranged on two sides of web plates of the H–shaped steel beams, the supporting plates are positioned below the H–shaped steel beams, one outer L–shaped surface of each L–shaped plate is welded on the corresponding square steel tube, the other outer L–shaped surface of each L–shaped plate is connected with the web plates of the H–shaped steel beams in a bolted manner, one end of each supporting plate is a convex inserting end, the square steel tubes are provided with jacks matched with the inserting ends, the inserting ends are inserted into the jacks and welded on the square steel tubes, vertical reinforcing plates are arranged on the bottom surfaces of the supporting plates, and the top surfaces of the supporting plates are connected with lower flange plates of the H–shaped steel beams in a bolted manner. The building frame structure is higher in stability, and connectors are convenient to manufacture.

0) US4722156A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

1) Family number: 29121419 (US4722156A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority:

CA19860503158 19860303
CA19860505996 19860407
JP19850042979 19850305
JP19850045285 19850307
JP19850087172 19850423
CA19880568735 19880606
JP19850193388 19850902
JP19850210453 19850924
JP19850210454 19850924
JP19850210456 19850924
JP19850087173 19850423
JP19850146386 19850703
JP19850156365 19850716
JP19850156366 19850716
JP19860001463 19850703
US19870107680 19871009
US19860899549 19860822
US19860847495 19860403
US19860835954 19860304
JP19870234374 19870918
JP19880080444 19880401
JP19860003179 19860110
JP19850299531 19851228
JP19850241049 19851028
JP19850295377 19851225

Family:

Publication number	Publication date	Application number	Application date
CA1259808 A1	19890926	CA19860503158	19860303
CA1273179 A1	19900828	CA19860505996	19860407
CA1300920 A1	19920519	CA19880568735	19880606
CN1008461 B	19900620	CN19861001986	19860303
CN1008643 B	19900704	CN19861006236	19860902
CN1009291 B	19900822	CN19861003232	19860506
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CN1032375 A	19890412	CN19881004690	19880730
CN86101986 A	19860903	CN19861001986	19860303
CN86103232 A	19870318	CN19861003232	19860506
CN86106236 A	19870805	CN19861006236	19860902
DE3676021 D1	19910117	DE19863676021	19860822
DE3679957 D1	19910801	DE19863679957	19860403
DE3681944 D1	19911121	DE19863681944	19860305
DE3884117 D1	19931021	DE19883884117	19880610
DE3884117 T2	19940505	DE19883884117T	19880610
EP0195552 A2	19860924	EP19860301552	19860305
EP0195552 A3	19870527	EP19860301552	19860305
EP0195552 B1	19911016	EP19860301552	19860305
EP0214800 A2	19870318	EP19860306519	19860822
EP0214800 A3	19870527	EP19860306519	19860822
EP0214800 B1	19901205	EP19860306519	19860822
EP0218313 A2	19870415	EP19860302470	19860403
EP0218313 A3	19890607	EP19860302470	19860403
EP0218313 B1	19910626	EP19860302470	19860403
EP0308038 A1	19890322	EP19880305320	19880610
EP0308038 B1	19930915	EP19880305320	19880610
JP1080638 A2	19890327	JP19870234374	19870918
JP1256651 A2	19891013	JP19880080444	19880401
JP1688633 C3	19920811	JP19850210454	19850924
JP1688641 C3	19920811	JP19850241049	19851028
JP1716120 C3	19921127	JP19850156365	19850716
JP1744817 C3	19930325	JP19850295377	19851225
JP1744819 C3	19930325	JP19850299531	19851228
JP1756773 C3	19930423	JP19860003179	19860110
JP1772241 C3	19930714	JP19850156366	19850716

JP1775799 C3	19930728	JP19850042979	19850305	
JP1775803 C3	19930728	JP19850087172	19850423	
JP1788834 C3	19930910	JP19850210456	19850924	
JP1798456 C3	19931112	JP19850087173	19850423	
JP1804113 C3	19931126	JP19850146386	19850703	
JP1809360 C3	19931210	JP19850210453	19850924	
JP1887864 C3	19941122	JP19850193388	19850902	
JP3053418 B4	19910815	JP19850210454	19850924	
JP3053420 B4	19910815	JP19850241049	19851028	
JP4001821 B4	19920114	JP19850156365	19850716	
JP4017261 B4	19920325	JP19850210456	19850924	
JP4020458 B4	19920402	JP19850156366	19850716	
JP4028062 B4	19920513	JP19850295377	19851225	
JP4028067 B4	19920513	JP19850299531	19851228	
JP4048137 B4	19920805	JP19860003179	19860110	
JP4063936 B4	19921013	JP19850087172	19850423	
JP4063938 B4	19921013	JP19850042979	19850305	
JP5002780 B4	19930113	JP19850087173	19850423	
JP5003492 B4	19930114	JP19850146386	19850703	
JP5015853 B4	19930302	JP19850210453	19850924	
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JP61204455 A2	19860910	JP19850042979	19850305	
JP61204456 A2	19860910	JP19850045285	19850307	
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JP62017236 A2	19870126	JP19850156365	19850716	
JP62017245 A2	19870126	JP19850156366	19850716	
JP62055320 A2	19870311	JP19850193388	19850902	
JP62072837 A2	19870403	JP19850210453	19850924	
JP62072838 A2	19870403	JP19850210454	19850924	
JP62072840 A2	19870403	JP19850210456	19850924	
JP62101734 A2	19870512	JP19850241049	19851028	
JP62153438 A2	19870708	JP19850295377	19851225	
JP62160337 A2	19870716	JP19850299531	19851228	
JP62160338 A2	19870716	JP19860003179	19860110	
JP64080638 A2	19890327	JP19870234374	19870918	
KR940009459 B1	19941013	KR19860001515	19860304	
KR940009460 B1	19941013	KR19880007707	19880625	
SG9290703 A	19920904	SG19920090703	19920706	
US4722156 A	19880202	US19860835954	19860304	
US4864797 A	19890912	US19880207163	19880615	
US5012622 A	19910507	US19900503147	19900330	

Probable Assignee: SHIMIZU CONSTRUCTION CO LTD

Assignee(s):(std)**:** SHIMIZU CONSTRUCTION CO LTD ; SHIMIZU CONSTRUCTON CO LTD ; SHUMIZU CONSTRUCTION CO LTD ; THE SHIMIZU CONSTRUCTION CO LTD

Assignee(s): THE SHIMIZU CONSTRUCTION CO LTD TOKIO TOKYO JP ; SHIMIZU CONSTRUCTION CO ; SHUMIZU CONSTRUCTION CO ; SHIMIZU CONSTR CO LTD ; SATO TAKANORI ; SHOKAWA TOMOO ; SAITO YUTAKA ; SHIOKAWA HIDEYO ; SANO TAKESHI ; WATANABE YASUSHI ; SHIMIZU CORP ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAMURA YASUKAZU

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Inventor(s):(std): AL OSAMU HOSOKAWA ET ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA KIYOYASU ; KITAGAWA KYOYASU ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAJIMA HIDEO ; NAKAJIMA HIDEO SHIMIZU CONSTRU ; NAKAMURA KOICHI ; NAKAMURA YASUKAZU ; NAKAMURA YASUKAZU SHIMIZU CONS ; NAKASHIMA HIDEO ; ORITO YOSHIHIRO ; SAITO YUTAKA ; SANO TAKESHI ; SATO TAKANORI ; SATO TAKANORI SHIMIZU CONSTRUC ; SHIOKAWA HIDEYO ; SHIYOUKAWA NOBUO ; SHOKAWA TOMOO ; WANTANABE YASUSHI ; WATANABE YASUSHI ; WATANABE YASUSHI SHIMIZU CONST ; YUTAKA SAITO ; YOSHIHIRO ORITO ; YASUSHI WATANABE ; YASUKAZU NAKAMURA ; TOMOO SHOKAWA ; TAKESHI SANO ; TAKANORI SATO ; SHOKAWA TOMOO SHIMIZU CONSTRUC ; SHOKAWA TOMO ; SEIHO KITAGAWA ; SAITO YUTAKA SHIMIZU CONSTRUCT ; OSAMU HOSOKAWA ET AL ; OSAMU HOSOKAWA ; SHIOKAWA HIDEYO SHIMIZU CONSTR ; ORITO YOSHIHIRO SHIMIZU CONSTR ; NAKAMURA YASUKUZU ; KENICHI IKEDA ; KAZUNORI KOSHIDA ; HIDEYO SHIOKAWA ; HIDEO NAKASHIMA ; HIDEO NAKAJIMA ; ET AL ; IKEDA KENICHI SHIMIZU CONSTRUC

Inventor(s): HOSOKAWA OSAMU SUGINAMI KU TOKYO JP ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD CHUO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L... ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L CHUO K ; NAKAMURA YASUKAZU MATSUDO SHI CHIBA KEN JP ; NAKAJIMA HIDEO SHIMIZU CONSTRUCTION CO LTD ; KOSHIDA KAZUNORI HINO SHI TOKYO JP ; KITAGAWA SEIHO SHIKI SHI SAITAMA KEN JP ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI... ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI KANAGAWA KE ; SHIOKAWA HIDEYO INBA GUN CHIBA KEN JP ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD CHUO K ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI TOKYO JP ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI SHIMIZU CONSTRUCTION CO L ; SATO TAKANORI SETAGAYA KU TOKYO JP ; SANO TAKESHI TAMA SHI TOKYO JP ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD CHUO KU T ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD CHUO K ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD CHUO ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LT ; WANTANABE YASUSHI OHTA KU TOKYO JP ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO ; SATO TAKANORI SHIMIZU CONSTRUCTION CO ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO

Agent(s): MARKS AND CLERK

Designated states: DE FR GB

International class (IPC 8–9): B23K9/02 B23K9/028 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/22 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 (Advanced/Invention); B23K9/02 B23K9/028 E02D5/24 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/20 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): B23K31/06 C04C3/36 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 E04C3/36

CPC: E04B1/165 E04B1/30 E04C3/34 E02D5/30 Y02T10/7005

European class: E02D5/30 E04B1/16D E04B1/30 E04C3/34

US class: 264/256 264/262 52/263 52/721 52/721.4 52/724 52/725 52/726 52/726.1 52/726.3 52/742.14 52/834 52/848 52/98

Classification Explorer

Cited documents: WO8204455 A1, USRE17834 E, US960125 A, US905888 A, US836673 A, US4783940 A, US4722156 A, US4694622 A, US4588327 A, US4470106 A, US4407106 A, US4281487 A, US4272929 A, US4166347 A, US4018055 A, US4016701 A, US3991532 A, US3963056 A, US3828504 A, US3793794 A, US3501881 A, US3382680 A, US3199300 A, US3058264 A, US2698519 A, US2210553 A, US2176007 A, US2035662 A, US1971051 A, US1932671 A, US1571092 A, US1571091 A, US1432192 A, US1410453 A, US1190002 A, US1019561 A, JPS5846625, JPS4921804 U, JP63027634 A2, JP61179936 A2, JP61179936, JP59029483 U1, JP58046625 A2, JP57151439 U1,

JP57151439 U1, JP57142033 U1, JP57142033 U1, JP57038001 U1, JP49134112 A2, JP49134112, JP49126714 U1, JP49021804 U1, JP49021804 U, JP48058605 U1, GB287447 A, FR2539782 A1, FR2286920 A1, FR1540495 A, FR1173701 A, EP0218313 A2, EP0195552 A2, DE642265 A, DE2723534 A1, DE1056348 A,

Forward Citations: WO9851883, WO13120138, WO13016683, WO11072451, WO10018491, WO09090301, WO08157768, WO03054321, US9677273, US9523188, US9248957, US9096999, US9067721, US8941270, US8888413, US8850750, US8484915, US8468775, US8250833, US8104242, US8056297, US7811495, US7475651, US7143554, US7107730, US6665990, US6655877, US6189286, US6141918, US6119425, US6061992, US5934035, US5678375, US5577857, US5423634, US5399169, US5285614, US5218802, US5174080, US5066834, US4864797, US2016251865, US2014000207, US2013133278, US2012114425, US2010319280, US2010071275, US2009313913, US2009038263, US2009021019, US2007261356, US2007199252, US2007175577, US2007028541, US2006174549, US2004055234, US2003029111, RU2597909, RU2496949, RU2495987, JP7139090, JP7034540, JP64062535, JP64033343, JP63223250, JP6093357, JP5915425, JP5734169, JP5033493, JP4491099, JP4304039, JP4094004, JP3941899, JP3778348, JP3013329, JP2697394, JP2575761, JP2080729, JP2014527470, JP2014015773, JP2013112973, JP2009061727, JP2005113413, JP2003138648, JP2000282578, JP1142146, JP11181957, JP1062535, JP1033343, ITTV20090161, FR2841579, FR2833632, EP0982447, EP0308038, EA10211, EA017610, EA010211, DE10261604, CN105178512, CN104790976, CN104763162, CN104405123, CN104120833, CN104006283, CN104006283, CN103967209, CN103924738, CN103924738, CN103422620, CN103422620, CN103122676, CN103122676, CN103061566, CN102677824, CN102635064, CN102635063, CN102409809, CN102322113, CN102134891, CN102011432, CN101982629, CN101806118, CN101793055, CH691691, AT502604,

Abstract:
Source: US4722156A An concrete filled steel tube column and method of constructing same. The concrete filled steel tube column includes a steel tube having an inner face; a concrete core disposed within the steel tube; and a separating layer interposed between the inner face of the steel tube and the concrete core for separating the concrete core from the inner face of the steel tube so that the steel tube may not be bonded to the concrete core. After the separating layer is formed on the inner face of the steel tube, the concrete is charged into the steel tube to form a concrete core.

0) US6041561A – SELF–CONTAINED MOLDED PRE–FABRICATED BUILDING P...

2) Family number: 23411547 (US6041561A) © PatBase

Title: Self–contained molded pre–fabricated building panel and method of making the same

Priority: US19970916626 19970822 US19990470943 19991222 WO1998US17169 19980819

Family:

Publication number	Publication date	Application number	Application date
AU199891992 A1	19990316	AU19980091992	19980819
CA2272588 AA	19990521	CA19982272588	19980819
EP0972121 A2	20000119	EP19980944455	19980819
US6041561 A	20000328	US19970916626	19970822
US6401417 BA	20020611	US19990470943	19991222
WO9910607 A2	19990304	WO1998US17169	19980819
WO9910607 A3	19990514	WO1998US17169	19980819

Probable Assignee: WAYNE LEBLANG

Assignee(s):(std)**:** LEBLANG DENNIS ; WAYNE LEBLANG

Assignee(s): DENNIS LEBLANG ; LEBLANG WAYNE

Inventor(s):(std)**:** LEBLANG DENNIS

Inventor(s): DENNIS LEBLANG

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BORDEN LADNER GERVAIS LLP

Designated states: AM AT AU AZ BE BR BY CA CH CN CY CZ DE DK EE ES FI FR GB GR HU IE IL IT JP KG KR KZ LI LT LU LV MC MD MX NL NO NZ PL PT RO RU SE SG SK TJ TM TR UA

International class (IPC 8–9): E04B1/14 E04B1/16 E04B1/76 E04B2/00 E04B5/29 E04B7/20 E04C2/06 E04C2/284 E04C2/38 E04H4/00 (Advanced/Invention); E04B1/76 (Advanced/Non–invention); E04B1/02 E04B1/16 E04B5/17 E04B7/00 E04C2/06 E04C2/38 E04H4/00 (Core/Invention); E04B1/76 (Core/Non–invention)

International class (IPC 1–7): E04B2/00 E04C2/284 E04C3/02 E04H1/00

CPC: E04B1/14 E04B1/164 E04B5/29 E04B7/20 E04B2001/7679 E04C2/06 E04C2/384 E04H4/0087

European class: E04B1/14 E04B1/16C E04B5/29 E04B7/20 E04C2/06 E04C2/38C E04H4/00D2 P04B1/76M

US class: 52/234 52/309.12 52/481.1 522/340

Classification Explorer

Cited documents: USRE29965 E, US6023898 A, US6006484 A, US5943838 A, US5930968 A, US5797233 A, US5787665 A, US5709058 A, US5695443 A, US5678361 A, US5655344 A, US5526629 A, US5524412 A, US5491947 A, US5483777 A, US5218803 A, US5216863 A, US5092100 A, US5055252 A, US4934121 A, US4930278 A, US4909007 A, US4885884 A, US4751803 A, US4669240 A, US4649682 A, US4638615 A, US4622796 A, US4619032 A, US4605529 A, US4570398 A, US4494353 A, US4435936 A, US4276730 A, US4271111 A, US4235054 A, US4194336 A, US4047355 A, US4021989 A, US3965635 A, US3885008 A, US3730476 A, US3562970 A, US3305981 A,

Forward Citations: WO12135954, WO11077386, WO10014192, WO08007986, WO07096888, WO04001146, WO0133006, US9677268, US9663952, US9631363, US9493938, US9447557, US9399867, US9315988, US9260874, US9132461, US9074380, US9033303, US9016027, US8993462, US8991133, US8973334, US8950231, US8938926, US8904737, US8800227, US8763331, US8671637, US8656673, US8627636, US8607531, US8499526, US8495846, US8444789, US8429866, US8341907, US8297018, US8297016, US8281535, US8234833, US8201368, US8176696, US8161699, US8136248, US8109058, US8109055, US8079189, US8015771, US7998571, US7958687, US7905073, US7905062, US7805908, US7790784, US7788879, US7757454, US7713615, US7685789, US7596915, US7524555,

US7523591, US7421828, US7409800, US7313891, US7254925, US7137225, US7127858, US7040066, US7032356, US7017316, US6907708, US6907695, US6729094, US6698150, US6676102, US6622452, US6519900, US2015159372, US2015121791, US2014308509, US2014115989, US2014115988, US2013234002, US2012317902, US2012137610, US2012079784, US2012066988, US2012000593, US2011225910, US2011099940, US2011099930, US2011016800, US2011011006, US2010325988, US2010313500, US2010300012, US2010257805, US2010218446, US2010146874, US2010139177, US2010132291, US2010107539, US2010107536, US2010088975, US2010058700, US2009255196, US2009235598, US2009224134, US2009199500, US2009193733, US2009126305, US2009126304, US2009107065, US2009062431, US2009062413, US2009056257, US2008245013, US2008120942, US2008115450, US2008083180, US2007289239, US2007286688, US2007227087, US2007227086, US2007204540, US2007186497, US2007062151, US2007062144, US2006236653, US2006197257, US2006185290, US2006177279, US2006137269, US2006096236, US2006096222, US2006075701, US2006037282, US2006026925, US2005284101, US2005284071, US2005257494, US2005209414, US2005193678, US2005188635, US2005087908, US2005086900, US2005055935, US2005034418, US2005000178, US2004255534, US2004139674, US2004118069, US2004016194, US2003167722, US2003159391, RU2548262, GB2502713, FR2914664, FR2885624, EP1754842, CN103132690, CN103132690, BE1019464, AU2010334410,

Abstract:
Source: US6041561A The invention provides pre−fabricated self−contained building panels, including a panel incorporating a truss structure as a part thereof, and combinations thereof. The panels include a skeletal assembly comprising generally an array of plural structural steel channels, rigid sheeting proximate to said channels, support members adjacent the rigid sheeting, the channels supported between suitable base plates, angles for defining portions of said skeletal assembly and a forming structure as a part of said skeletal assembly, said skeletal assembly and forming structure being oriented horizontally on a planar surface. A self−hardening material, such as concrete, clay, etc. is introduced to the forming structure for embedding at least a portion of said skeletal assembly. The forming structure becomes an integral part of the completed building panel and is not disassembled therefrom. Angles are included as a part of the skeletal assembly for defining receiving chambers for self−hardening material such as concrete, clay and the like. A building truss including a pair of double−angle struts and a web−reinforcement bar threaded therealong, as well as rigid sheeting arranged to define a receiving chamber for the self−hardening material, is provided and combined as a part of the above mentioned building panels. A moulding and means to enable press−seating thereof in a wet concrete wall are disclosed as is a flexible brick facing also pressed into a wet concrete wall. The skeletal structures function as forms for forming the panel and/or the truss combined therewith. Forms also are described forming various architectural bodies and forms.

0) US2008028694A – CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM ...

3) Family number: 33691240 (US2008028694A) © PatBase

Title: CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM

Priority: CA20052506928 20050509 CA20062545924 20060505 WO2006CA00718 20060505

Family:

Publication number	Publication date	Application number	Application date
CA2506928 AA	20061109	CA20052506928	20050509
CA2506928 C	20121218	CA20052506928	20050509
CA2545924 AA	20061109	CA20062545924	20060505
US2008028694 AA	20080207	US20070797585	20070504
US2009159864 AA	20090625	US20060913742	20060505
US8132792 BB	20120313	US20060913742	20060505
WO06119613 A1	20061116	WO2006CA00718	20060505

Probable Assignee: HIGHLAND SAFETY SYSTEMS LTD

Assignee(s):(std): PERRIS KEVIN ; XILE INNOVATIONS INC ; SAFETY IN A SECOND LTD ; WASITIS ROBERT

Assignee(s): SWAROVSKI OPTIK KG ; XILE INNOVATIONS INC91 BANCHORY CRESCENTKANATAO1K2K 2V2CA ; SAFETY IN A SECOND LTD91 BANCHORY CRESCENTOTTAWAO1K2K 2V2CA ; PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA ; HIGHLAND SAFETY SYSTEMS LTD ; HIGHLAND SAFETY SYSTEMS LTDUNKNOWNUNKNOWN

Inventor(s):(std): PERRIS KEVIN ; WASITIS ROBERT

Inventor(s): PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA

Agent(s): CASSAN MACLEAN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04G21/24 E04G21/28 E04G21/32 E04G3/22 E04G5/14 E04H17/14 (Advanced/Invention); E04G21/24 E04G21/32 E04H17/14 (Core/Invention)

CPC: E04G21/28 E04G21/3261 Y10S256/06 E04G2005/148 E04G21/3223 E04G21/3233 E04G21/3238 E04G21/3276

European class: E04G21/28 E04G21/32B6 E04G21/32B6B E04G21/32F

US class: 135/115 135/119 182/113 182/82 256/59 256/59P 256/65.06 256/65.14 256/DIG.6 52/127.4

Classification Explorer

Cited documents: US6904720 BA, US6758306 BB, US6679482 BB, US6336623 BA, US6296003 BA, US6220577 BA, US6170502 BA, US6053281 A, US6039150 A, US6038829 A, US6015139 A, US6003629 A, US5896944 A, US5819474 A, US580311 A, US5711398 A, US5647451 A, US5573227 A, US5456451 A, US5431372 A, US5358025 A, US5314167 A, US5299655 A, US4979725 A, US4875549 A, US4830341 A, US4815562 A, US4798220 A, US4787475 A, US4766918 A, US4631765 A, US3995833 A, US3858364 A, US3805816 A, US3782110 A, US3776521 A, US3589682 A, US3561518 A, US3480257 A, US3480069 A, US3251399 A, US3121470 A, US2006249721 AA, US2002095898 AA, CA917973 A1, CA917972 A1, CA2393092 AA, CA2237418 AA, CA2206676 AA, CA2162526 AA, CA1299002 A1, CA1026604 A1, CA1013981 A1,

Forward Citations: WO15044631, WO09052575, WO09037393, WO09037393, USD659261, US9631396, US9441384, US9376832, US9371666, US2017138070, US2017096836, US2016194889, US2016069102, US2015315810, US2015275533, US2015176292, US2013240817, US2013153843, US2013037770, US2012074366, US2011204307, US2010171085, GB2443884, FR2939463, FR2919642, CN103526892, CN103526892, CH700844, AU2008100068, AU2007101042,

Abstract:
Source: US2008028694A A weather shield to protect workers and materials in a structure under construction from inclement weather while selectively providing stress relief to the weather shield from high winds in order to prevent damage to the weather shield is disclosed. The weather shield comprises a sheet of substantially flexible, substantially weatherproof material having a closeable opening for wind relief. The sheet protects the structure from inclement weather when the closeable opening is closed. When the closeable opening is open, it allows the passage of wind therethrough thereby tending to avoid wind damage to the weather shield. A temporary shelter for a structure under construction having a plurality of temporary guard rail supports and a weather shield is also disclosed, as well as a temporary shelter kit having a plurality of temporary guard rail supports and a weather shield.

0) CN202658946U – DOUBLE–SKIN CONCRETE–FILLED STEEL TUBE ROD OF P...

4) Family number: 52807851 (CN202658946U) © PatBase

Title: Double–skin concrete–filled steel tube rod of power transmission line

Priority: CN201220157537U 20120416

Family:

Publication number	Publication date	Application number	Application date
CN202658946 U	20130109	CN201220157537U	20120416

Probable Assignee: ZHEJIANG ELECTRIC POWER DESIGN INST

Assignee(s):(std)**:** ZHEJIANG ELECTRIC POWER DESIGN INST

Inventor(s):(std)**:** CHEN JIAMIAO ; GUO YONG ; LAO JIANMING ; LE JUNYAO ; LI JUNBIN ; LIU ZHEMING ; SHEN JIANGUO ; YE YIN

International class (IPC 8–9): E04H12/12 E04H12/24 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104047460, CN102650175,

Abstract:
Source: CN202658946U A double–skin concrete–filled steel tube rod of a power transmission line comprises double–skin concrete–filled steel tube components, a hollow steel tube component, an inner and outer wall flange, a common flange and a wire cross arm, wherein each double–skin concrete–filled steel tube component consists of an outer steel tube, an inner steel tube and middle sandwich concrete; sections of the double–skin concrete–filled steel tube components are connected with each other through the inner and outer wall flange; the double–skin concrete–filled steel tube components are connected with the hollow steel tube component through the common flange; the double–skin concrete–filled steel tube components are fixedly arranged on a reinforced concrete foundation; the inner and outer wall flange consists of an inner flange and an outer flange; and the wire cross arm is arranged on the hollow steel tube component. Compared with the conventional power transmission tower, the double–skin concrete–filled steel tube rod has the characteristics that occupied area is reduced, and tower positions are selected flexibly; compared with a common steel tube rod, the double–skin concrete–filled steel tube rod has the characteristics that compression resistance, bending resistance and local stability bearing capacity of the components are greatly improved, the application range of a transmission pole is expanded, and steel products are saved; and compared with a concrete–filled steel tube rod, the double–skin concrete–filled steel tube rod has the characteristics that the dead weight of the double–skin concrete–filled steel tube rod is reduced, the acting force of the foundation is decreased, and concrete of the foundation is saved.

5) Family number: 20251796 (US5706620A) © PatBase

Title: THERMOPLASTIC STRUCTURAL SYSTEM AND COMPONENTS THEREFOR AND METHOD OF MAKING SAME

Priority: CA19922070079 19920529 CA19922070079 19920529 NZ19930252970 19930527 EP19930912496 19930527 WO1993CA00226 19930527

Family:

Publication number	Publication date	Application number	Application date
AT187998 E	20000115	AT19930912496T	19930527
AU199453402 A1	19931230	AU19940053402	19930527
AU671323 B2	19960822	AU19940053402	19930527
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CA2070079 AA	19931130	CA19922070079	19920529
CA2070079 C	19970610	CA19922070079	19920529
CZ290243 B6	20020612	CZ19940002928	19930527
CZ9402928 A3	19950614	CZ19940002928	19930527
DE69327398 D1	20000127	DE19936027398	19930527
DE69327398 T2	20000518	DE19936027398T	19930527
DK0648301 T3	20000515	DK19930912496T	19930527
ECSP931003 A	19940627	EC1993SP01003	19931129
EP0648301 A1	19950419	EP19930912496	19930527
EP0648301 B1	19991222	EP19930912496	19930527
EP0848116 A2	19980617	EP19980200052	19930527
EP0848116 A3	19980812	EP19980200052	19930527
ES2141766 T3	20000401	ES19930912496T	19930527
FI107282 B	20010629	FI19940005637	19941129
FI945637 A	19950102	FI19940005637	19941129
FI945637 A0	19941129	FI19940005637	19941129
GB2283257 A1	19950503	GB19940023807	19930527
GB2283257 B2	19951213	GB19940023807	19930527
GB9423807 A0	19950215	GB19940023807	19930527
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JP7507363 T2	19950810	JP19930500048T	19930527
KR100257144 B1	20000515	KR19940704325	19941129
MD1330 F2	19990930	MD19960000231	19930527
MX9303229 A1	19931101	MX19930003229	19930531
NO944518 A	19941206	NO19940004518	19941125
NO944518 A0	19941125	NO19940004518	19941125
NZ252970 A	19970822	NZ19930252970	19930527
NZ328162 A	19990225	NZ19930328162	19930527
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RO113751 B1	19981030	RO19940001902	19930527
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RU94046092 A1	19961010	RU19940046092	19941125	
SK145194 A3	19951108	SK19940001451	19930527	
TJ232 B	19991124	TJ19960000324	19930527	
US5706620 A	19980113	US19950338605	19951122	
US6189269 BA	20010220	US19970933509	19970918	
VN371 A1	19970925	VN19940000969	19941229	
WO9324714 A1	19931209	WO1993CA00226	19930527	

Probable Assignee: ROYAL GROUP TECHNOLOGIES INC

Assignee(s):(std)**:** ROJAL BILDING SISTEMZ SI DI EHN LTD ; ROYAL BUILDING SYST CANADA ; ROYAL BUILDING SYST CANADA LTD ; ROYAL BUILDING SYSTEM CND LTD ; ROYAL BUILDING SYSTEMS ; ROJAL BILDING SISTEMZ ; ROYAL BUILDING SYSTEMS LIMITED ; ROYAL BUILDING SYSTEMS LTD ; ZEN VITTORIO DE ; ROYAL BUILDING SYSTEMS CDN ; ROYAL BUILDING SYSTEMS CND LTD

Assignee(s): ROYAL BUILDING SYSTEMS CDN LTD WOODBRIDGE ; ROYAL GROUP TECHNOLOGIES INC ; ROJAL BILDING SISTEMZ (SI–DI–EHN) LIMITED ; ROJAL BILDING SISTEMZ SI DI EHN LIMITED ; ROYAL BUILDING SYSTEMS CDN LIMITED ; ROYAL BUILDING SYSTEMS CDN LTD ; ROYAL BUILDING SYSTEMS CND LIMITED ; ROYAL BUILDING SYSTEMS (CDN) LTD ; ROYAL BUILDING SYSTEMS CDN LTD WESTON ONTARIO ; ROYAL BUILDING SYSTEM CND LIMITED ; DE ZEN VITTORIO

Inventor(s):(std)**:** ZEN VITTORIO DE ; ZEN DE VITTORIO ; VITTORIO ZEN DE ; DI ZEN VITTORIO ; DEZEN VITTORIO ; DE ZEN VITTORIO

Inventor(s): VITTORIO DEZEN ; VITTORIO DE ZEN

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; JOHNSON DOUGLAS S QC

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

International class (IPC 8–9): B29C47/02 E04B1/12 E04B1/14 E04B1/28 E04B2/00 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04B7/20 E04C2/20 E04C2/22 E04C2/34 E04C3/30 E04F17/08 E04G11/00 H02G3/04 (Advanced/Invention);
E04B1/28 E04B1/35 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04C2/20 E04C2/34 (Advanced/Non–invention);
E04B1/02 E04B1/28 E04B2/02 E04B2/14 E04B2/56 E04B2/72 E04B7/00 E04C2/10 E04C2/34 E04C3/30 E04F17/00 H02G3/04 (Core/Invention);
E04B1/35 (Core/Non–invention)

International class (IPC 1–7): B29C47/02 E04B1/00 E04B1/12 E04B1/14 E04B1/28 E04B1/38 E04B1/98 E04B2/00 E04B2/02 E04B2/14 E04B2/56 E04B2/68 E04B2/72 E04B2/86 E04C2/20 E04C2/22 E04C2/288 E04C2/36 E04C2/38 E04C2/52 E04F17/08 E04G11/00 E04H9/14 H02G3/04 H02G3/26 H02G3/28

CPC: E04B7/20 E04B1/12 E04B2/72 E04C2/20 E04C3/30 H02G3/286 E04B1/14 E04B2001/3583

European class: E04B1/12 E04B1/14 E04B2/72 E04B7/20 E04C2/20 E04C3/30 H02G3/28W P04B1/35T

US class: 52/220.1 52/220.2 52/220.5 52/270 52/309.1 52/421 52/508.1 52/581 52/582.1 52/588.1 52/718.04

Classification Explorer

Cited documents: US5784841 A, US5740648 A, US5685113 A, US5608999 A, US5479747 A, US5403631 A, US5347778 A, US5311718 A, US5277002 A, US5274975 A, US5274974 A, US5245803 A, US5014476 A, US4671038 A, US4602124 A, US4560618 A, US4557091 A, US4536360 A, US4522002 A, US4453357 A, US4099358 A, US4030259 A, US3992839 A, US3828502 A, US3802146 A, US3712005 A, US3708607 A, US3662507 A, US3657849 A, US3640039 A, US3374590 A, US3348459 A, US3279137 A, US3160245 A, US3037590 A, US2406501 A, US2326361 A, US2297887 A, US2143288 A, US1960961 A, GB2191225 A1, GB2028228 A1, EP0320745 A1, EP0118683 A2, DE7211852 U, DE7211852, CA2040717 AA, CA2000617 AA,

Forward Citations: WO9914450, WO9704185, WO9614480, WO16074049, WO14209450, WO14008536, WO13168049, WO12100843, WO10094111, WO10002233, WO09078692, WO07141618, WO07141616, WO07097988, WO07027698, WO05088020, WO04038118, WO04033809,

WO04033809, WO0065167, WO0022250, WO0011282, WO0011282, WO0011282, WO0011280, WO0011280, USD625844, USD625843, USD624210, USD624209, USD624208, USD624206, USD623768, USD623767, USD548362, USD547880, USD546970, USD506267, USD506266, USD484252, USD482462, USD482140, USD472326, USD471992, USD462458, USD461914, US9562353, US9499974, US9493938, US9458659, US9453345, US9441365, US9366029, US9359780, US9315987, US9284732, US9273479, US9273477, US9206614, US9163393, US9151037, US9103120, US9091061, US9080337, US9062450, US9010052, US8973313, US8943774, US8904737, US8844241, US8833027, US8793966, US8793953, US8782984, US8713883, US8677713, US8631616, US8607531, US8555590, US8534028, US8518308, US8458985, US8458969, US8393123, US8322115, US8322098, US8322097, US8266867, US8161711, US8132372, US8091289, US8082711, US8082700, US8065855, US8065841, US8051617, US8029258, US8020347, US8012301, US7972546, US7966782, US7930861, US7926241, US7926233, US7926227, US7905067, US7900411, US7824589, US7818936, US7797897, US7797885, US7779579, US7770339, US7770337, US7770334, US7707783, US7703248, US7690167, US7665264, US7658038, US7596924, US7559176, US7518060, US7444788, US7444782, US7421830, US7254925, US7241484, US7146773, US7127865, US6993802, US6942915, US6889475, US6854230, US6851233, US6827995, US6826884, US6802158, US6792730, US6735916, US6695534, US6658808, US6637167, US6604328, US6595497, US6591558, US6584750, US6532707, US6477817, US6460309, US6427403, US6405509, US6387533, US6342675, US6341458, US6295778, US6256937, US6247280, US6226944, US6167669, US6105315, US6085477, US6079175, US5953880, US5735090, US2016340964, US2016002911, US2015368915, US2015354234, US2015308128, US2015275531, US2015143757, US2014137961, US2014137504, US2014099160, US2014069032, US2014026507, US2013174506, US2013104994, US2013081345, US2012266559, US2011258943, US2011203205, US2011126484, US2011113718, US2011030576, US2010325991, US2010318222, US2010251657, US2010243369, US2010212241, US2010205871, US2010132285, US2010071304, US2009320401, US2009266005, US2009217617, US2009165401, US2009139171, US2009126280, US2009044461, US2009043424, US2008222991, US2008127604, US2008127584, US2007224418, US2007210237, US2007209305, US2007209295, US2007193192, US2007193144, US2007193143, US2007175146, US2007095016, US2007094992, US2007062146, US2006277852, US2006254167, US2006096232, US2006032172, US2006005497, US2005252125, US2005224690, US2005223655, US2005223653, US2005223652, US2005210828, US2005210766, US2005210765, US2005210761, US2005210760, US2005091932, US2005056822, US2005016083, US2004255525, US2004244321, US2004229062, US2004219357, US2004177581, US2004134162, US2004128937, US2004040255, US2004031230, US2004016194, US2002189190, US2001005963, RU2507348, GB2538540, GB2365031, GB2365031, GB2345704, GB2345704, GB2287968, FR2844285, ES2244331, EP2931993, EP2275612, EP1434919, EP1226317, EP1105589, EP1081305, EP1081305, EP0840829, EP0674059, EA025336, DE20315494, DE10211032, DE10211032, DE102011002843, CN102168472, AU2009201583, AU2003200063,

Abstract:
Source: US5706620A PCT No. PCT/CA93/00226 Sec. 371 Date Nov. 22, 1995 Sec. 102(e) Date Nov. 22, 1995 PCT Filed May 27, 1993 PCT Pub. No. WO93/24714 PCT Pub. Date Dec. 9, 1993The invention is for a thermoplastic structural system, structural components therefor, and method of producing same in which the structural components are extruded from a thermoplastic material containing a reinforcing constituent flowable through an extrusion die, the structural components being configured for interlocking interconnection.

0) CN104264790A – INNER SLEEVE TYPE CONCRETE–FILLED STEEL TUBE BE...

6) Family number: 58210097 (CN104264790A) © PatBase

Title: INNER SLEEVE TYPE CONCRETE–FILLED STEEL TUBE BEAM COLUMN JOINT AND PRODUCTION METHOD THEREOF

Priority: CN201410410535 20140819

Family:

Publication number	Publication date	Application number	Application date
CN104264790 A	20150107	CN201410410535	20140819
CN104264790 B	20160511	CN201410410535	20140819

Probable Assignee: JIANGSU JIANZHU INST

Assignee(s):(std)**:** JIANGSU JIANZHU INST

Inventor(s):(std)**:** KANG WENMEI ; LIU JINGJING ; QI BAO ; XIA JUNWU ; ZHANG FENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: CN204081084 U, CN202730969 U, CN202644740 U, CN201381556 Y, CN102733490 A, CN102251587 A, CN101525904 A,

Forward Citations: CN105064512,

Abstract:
Source: CN104264790A The invention discloses an inner sleeve type concrete–filled steel tube beam column joint, and belongs to the field of construction steel structures. The inner sleeve type concrete–filled steel tube beam column joint is mainly used for a connecting joint of a concrete–filled steel tube and a steel beam. The inner sleeve type concrete–filled steel tube beam column joint comprises a steel tube column, and an inner sleeve embedded in the steel tube column, wherein the upper edge peripheries in the abutment positions of the inner sleeve and the steel tube column are welded together; and the inner sleeve and the steel tube column are welded together at the upper and lower sides of a welding line between the steel tube column and a steel beam flange, so that the inner sleeve and the steel tube column are connected as a whole. The inner sleeve type concrete–filled steel tube beam column joint not only can guarantee the reinforcement of the steel tube column in the joint, but also can realize vertical penetration of the joint of the steel tube column, and has no shield when concrete is filled in the steel tube column, so that the compactness of the concrete in the steel tube column is guaranteed.

0) WO06109901A1 – CONCRETE COMPOSITE COLUMN AND COMPOSITE PIER CO...

7) Family number: 33514935 (WO06109901A1) © PatBase

Title: CONCRETE COMPOSITE COLUMN AND COMPOSITE PIER

Priority: KR20050030070 20050411

Family:

Publication number	Publication date	Application number	Application date
KR100666703 B1	20070109	KR20050030070	20050411
KR20060107710 A	20061016	KR20050030070	20050411
WO06109901 A1	20061019	WO2005KR01219	20050427

Probable Assignee: B B M KOREA CO LTD

Assignee(s):(std)**:** B B M KOREA CO LTD ; LEE KI HONG

Assignee(s): B B M KOREA CO ; BBM KOREA CO ; BBM KOREA CO LTD

Inventor(s):(std)**:** LEE KI HONG

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Advanced/Non–invention); E01D19/02 (Core/Invention)

CPC: E01D19/02 E01D2101/268 E01D22/00

European class: E01D19/02 P01D101/26H

Classification Explorer

Cited documents: US5339594 A, KR200286012 Y1, JP9158116 A2,

Forward Citations: KR101177426, KR101007908, KR100933265, KR100864220, KR100864220, KR100786900, CN102493601,

Abstract:
Provided are a concrete–filled steel tube (CFT) column and a concrete composite pier using the same, capable of eliminating a work required to arrange reinforcements as well as remarkably improving a adhesive strength between the concrete and the steel tube, thereby maximizing a combined action of the concrete and the steel tube and improving outer appearance. The CFT column includes a steel tube; at least one armature attached to an inner surface and in a lengthwise direction of the steel tube and having a coupling plate, a web and at least one concrete–gripping hole; and concrete poured into a space defined by the steel tube and the armature.

0) US4696137A – BEAM–COLUMN JUNCTION

8) Family number: 2872985 (US4696137A) © PatBase

Title: Beam–column junction

Priority: CA19860500891 19860131 EP19860100499 19860116 LU19850085753 19850201

Family:

Publication number	Publication date	Application number	Application date
AT68228 E	19911015	AT19860100499T	19860116
CA1273811 A1	19900911	CA19860500891	19860131
DE3681800 D1	19911114	DE19863681800	19860116
EP0189785 A2	19860806	EP19860100499	19860116
EP0189785 A3	19890322	EP19860100499	19860116
EP0189785 B1	19911009	EP19860100499	19860116
LU85753 A	19860902	LU19850085753	19850201
US4696137 A	19870929	US19860823598	19860129

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** SCHLEICH JEAN BAPTISTE

Inventor(s): SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class(IPC 8–9)**:** E04B1/18 E04B1/24 E04C3/293 E04C3/34 (Advanced/Invention); E04B1/24 E04C3/29 E04C3/30 (Core/Invention)

International class(IPC 1–7)**:** E04B1/00 E04B1/18 E04B1/24 E04C3/34

CPC: E04B1/2403 E04B2001/2415 E04B2001/2448 E04B2001/2469 E04B2001/2484 E04C3/293 E04C3/34

European class: E04B1/24B E04C3/293 E04C3/34 P04B1/24B4 P04B1/24B40 P04B1/24C2 P04B1/24E

US class: 52/251 52/334 52/702 52/733 52/737.2 52/838

Classification Explorer

Cited documents: US4409765 A, US1476572 A, FR1475696 A, EP0133565 A2, EP0123642 A2, DK39263 A, DE2829864 A1, DE2658020 B2, DE2658020 A1, DE2408134 A1, CA886291 A, AU86570 A1,

Forward Citations: WO12105858, WO0015920, US9206594, US8875475, US8782991, US8733033, US8555593, US8516761, US8166717, US6679017, US2011094182, US2010281808, US2010031605, US2010005732, US2009320387, US2005066609, US2004250484, JP63308131, EP0292449, EP0290884, CN103266720,

Abstract:
Source: US4696137A A beam support joint for a column and a beam, which are each constructed from concrete and at least one metal section having a pair of flanges joined by a web and forming at least one recess of the metal section which is filled with concrete and the outer surfaces of the flanges of the metal section are not covered with concrete and are otherwise free. An upper support strap is mounted on an upper flange of the beam, and is attached to the column and the beam. The upper support strap and the webs of both the beam and the column all lie substantially in the same plane. On a flange of the column a lower support plate is advantageously welded which has a width corresponding approximately to the flange of the column. This lower support plate has at least one recess on its upper side which suitably engages at leat one projection provided on a lower flange of the beam. Alternatively the lower support plate can be dispensed with and the upper support strap can be mounted on a cover plate provided on the column with at least one tight fitting screw.

9) Family number: 40838933 (US2007266651A) © PatBase

Title: MODULAR PANEL ASSEMBLIES FOR BUILDING FOUNDATIONS

Priority: US20060504621 20060816 US20060801568P 20060518 US20070804621 20070518 US20090422680 20090413 US20070904012P 20070228

Family:

Publication number	Publication date	Application number	Application date
CA2671646 AA	20101013	CA20092671646	20090710
US2007266651 AA	20071122	US20070804621	20070518
US2009193734 AA	20090806	US20090422680	20090413
US2012240499 A9	20120927	US20090422680	20090413
US8186115 BB	20120529	US20070804621	20070518
US8307608 BB	20121113	US20090422680	20090413

Probable Assignee: BRADLEY WALTER B

Assignee(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Inventor(s):(std)**:** BRADLEY WALTER B ; HARIG CHRISTOPHER W

Agent(s): JOHN J MARSHALL C O PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; JOHN J MARSHALL PATENT DOCKETING DRINKER BIDDLE AND REATH LLP; DRINKER BIDDLE AND REATH LLP

International class (IPC 8–9): E02D27/00 E04B1/00 E04B2/38 E04B2/56 E04C2/20 E04C2/34 E04C3/04 (Advanced/Invention); E02D27/00 E04B2/56 E04C2/10 E04C3/04 (Core/Invention)

CPC: E02D27/00 E04B1/0015 B67D7/0272 E04B1/08

European class: B67D7/02E6B E02D27/00 E04B1/00B1 E04B1/08

US class: 52/106 52/126.6 52/169.6 52/169.600P 52/270 52/270P 52/284 52/309.1 52/309.100S 52/481.1 52/690 52/690S 52/782.1 52/792.1

Classification Explorer

Cited documents: US7596923 BA, US7318300 BA, US7246779 BB, US6959521 BA, US6550213 BA, US6484460 BB, US6454050 BB, US6415558 BA, US6415557 BA, US6398778 BA, US6389778 BA, US6385937 BA, US6367764 BA, US6354050 BA, US6263636 BA, US6205725 BA, US6199336 BA, US6148583 A, US6125608 A, US6120723 A, US6076320 A, US5830378 A, US5787651 A, US5592796 A, US5588271 A, US5564235 A, US5555698 A, US5487241 A, US5479749 A, US5287675 A, US4876833 A, US4706422 A, US4599835 A, US4332116 A, US4274242 A, US4235054 A, US4100705 A, US4075810 A, US4041667 A, US3611653 A, US3596424 A, US3236012 A, US3208410 A, US2006179782 AA, US2004134162 AA, US2003066249 AA, US2001047637 AA,

Forward Citations: US9657490, US9618211, US9458618, US9394714, US9090497, US8769908, US8683759, US8327597, US8327592, US2015211745, US2015093535, US2013319937, US2012317902, US2011282633, US2011179731, US2011173899, US2011072734, US2007028542, AT517545,

Abstract:
Source: US2007266651A A perimeter foundation wall is constructed from a plurality of modular wall panels. The wall panels include a generally planar exterior wall surface, a side flange on both vertically extending sides of the panel, a top cap, and a base pan. The wall may also include vertical reinforcing studs and brackets on an inner surface of the wall panels. The wall may also have leveling assemblies including threaded rods passing through the base pan.

0) CN103015534A – LATERAL CONNECTION NODE OF CONCRETE–FILLED RECT...

10) Family number: 53481676 (CN103015534A) © PatBase

Title: LATERAL CONNECTION NODE OF CONCRETE–FILLED RECTANGULAR STEEL TUBE COLUMN AND STEEL BEAMS

Priority: CN201210544026 20121214

Family:

Publication number	Publication date	Application number	Application date
CN103015534 A	20130403	CN201210544026	20121214

Probable Assignee: JIN TIANDE

Assignee(s):(std)**:** JIN TIANDE ; TONG GENSHU ; YE ZAILI

Inventor(s):(std)**:** JIN TIANDE ; TONG GENSHU ; YE ZAILI

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: WO04076761 A1, CN202925689 U, CN202139692 U, CN201901947 U, CN101967855 A, CN101949173 A,

Forward Citations: CN105002982, CN104929253, CN104775525, CN104278799, CN104196128,

Abstract:
Source: CN103015534A The invention provides a lateral connection node of a concrete–filled rectangular steel tube column and steel beams. The lateral connection node of the concrete–filled rectangular steel tube column and the steel beams comprises the concrete–filled rectangular steel tube column and the steel beams, wherein vertical connection plates are arranged on the four sides of the concrete–filled rectangular steel tube column; the vertical connection plates and the concrete–filled rectangular steel tube column are connected in a welding way; each vertical connection plate stretches out to form two side plates towards the direction of reinforcements; the side plates are located on two sides of each steel beam and arranged in a manner to be parallel with a web plate of each steel beam; a horizontal connection plate extends on the flange of an end of each steel beam close to the concrete–filled rectangular steel tube column towards the direction of the side plates; each steel beam is welded with the side plates through the horizontal connection plate; and the web plate of each steel beam is welded with the concrete–filled rectangular steel tube column through the utilization of twin fillet welding seams. With the adoption of the lateral connection node of the concrete–filled rectangular steel tube column and the steel beams, as the flange of each steel beam is widened in a node area through the horizontal connection plate, the design rule of enhancing the bearing capacity of the node higher than the bearing capacity of components is realized; the vertical connection plates of the node cause the strength of the node area to be enhanced, so that the shearing strength of the node area is easily met; in addition, the force transmission of the node is direct and no clapboard is necessarily arranged; and therefore, the construction and the manufacture are facilitated.

0) CN203947841U – JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COL...

11) Family number: 57827781 (CN203947841U) © PatBase

Title:	JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COLUMN OF CONCRETE FILLED STEEL TUBE FRAME
Priority:	CN201420374248U 20140708

Family:

Publication number	Publication date	Application number	Application date
CN203947841 U	20141119	CN201420374248U	20140708

Probable Assignee:	GANSU ELECTRIC POWER DESIGN INST
Assignee(s):(std)**:**	GANSU ELECTRIC POWER DESIGN INST
Inventor(s):(std)**:**	CHENG MING ; WANG SHUPING ; XI ZENGHONG ; YANG JUNFEN ; ZHANG GUANGPING
International class (IPC 8–9)**:**	E04H12/12 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203947841U The utility model discloses a joint of a herringbone column and a ground wire column of a concrete filled steel tube frame. The joint of the herringbone column and the ground wire column of the concrete filled steel tube frame comprises a herringbone frame with the connected top, and a top plate is arranged on the top of the herringbone frame. The joint is characterized in that the herringbone frame is composed of two concrete filled steel tubular columns, concrete is poured into steel tubes according to the structure of the concrete filled steel tubular columns, a connecting plate is arranged at the top abutting joint of the first concrete filled steel tubular column and the second concrete filled steel tubular column, a plurality of reinforcement plates are arranged on the outer walls of the upper portions of the first and second concrete filled steel tubular columns, the top plate is welded to the first concrete filled steel tubular column, the second concrete filled steel tubular column, the connecting plate and the reinforcement plates, the steel tubes are welded to the top plate, and the tops of the steel tubes are provided with flange plates used for being connected with the ground wire column. Corrosion of the inner walls of the steel tubes is prevented after the steel tubes are filled with the concrete, and component durability is improved. The steel tubes are arranged on the top plate, and the flange plates are connected with the ground wire column, so that the construction period can be shortened, and comprehensive economic benefits are improved.

0) US2006236628A – NEW STEEL STUD LOAD–BEARING AND/OR PERIMETER WA...

12) Family number: 33546647 (US2006236628A) © PatBase

Title: NEW STEEL STUD LOAD–BEARING AND/OR PERIMETER WALL SYSTEMS, A NEW COMPOSITE STEEL BEAM SYSTEM SUPPORTING CONCRETE–TOPPED FLOOR ON OPEN WEB STEEL JOISTS, A NEW VEHICLE–PROOF PERIMETER METAL STUD WALL FOR BUILDINGS, AND A NEW SHEAR–CONNECTION–READY OPEN WEB STEEL JOIST

Priority: US20050112911 20050425 US20070772177 20070630 US20090505478 20090718

Family:

Publication number	Publication date	Application number	Application date
US2006236628 AA	20061026	US20050112911	20050425
US2008000177 AA	20080103	US20070772177	20070630
US2009272063 AA	20091105	US20090505478	20090718
US7562500 BB	20090721	US20050112911	20050425

Probable Assignee: SIU WILFRED WING CHOW

Assignee(s):(std)**:** SIU WILFRED W ; SIU WILFRED WING CHOW

Inventor(s):(std)**:** SIU WILFRED W ; SIU WILFRED WING CHOW

Inventor(s): SIU WILFRED

Agent(s): DONALD V TOMKINS C O TOMKINS LAW OFFICE; DONALD V

International class (IPC 8–9): E04B1/00 E04B1/20 E04B1/38 E04C3/04 E04H12/02 (Advanced/Invention); E04B1/00 E04B1/20 E04B1/38 E04C3/04 E04H12/00 (Core/Invention)

CPC: E04B1/24 E04B5/10 E04B5/40 E04B2001/2481 E04B2001/2484 E04C3/083 E04C5/0645 E04C5/065

European class: E04B1/24 E04B5/10 E04B5/40 E04C3/08B E04C5/065 E04C5/06D P04B1/24D P04B1/24E

US class: 52/236.3 52/236.6 52/236.7 52/241 52/284 52/319 52/319P 52/650.3 52/655.1 52/690

Classification Explorer

Cited documents: US7571576 BB, US7562500 BB, US7389620 BA, US7143554 BB, US6983569 BA, US6389778 BA, US6318044 BA, US6298617 BA, US6293057 BA, US6276094 BA, US6263628 BA, US6128878 A, US6058668 A, US6050045 A, US5983577 A, US5941035 A, US5881516 A, US5822940 A, US5787665 A, US5782047 A, US5669194 A, US5544464 A, US5479749 A, US5291717 A, US5113631 A, US4894967 A, US4809476 A, US4805364 A, US4741138 A, US4653237 A, US4597233 A, US4486993 A, US4432178 A, US4295310 A, US4259822 A, US4189883 A, US4186535 A, US4182080 A, US4078347 A, US4056908 A, US3952462 A, US3945168 A, US3683580 A, US3680271 A, US3568388 A, US3307304 A, US2641449 A, US2211384 A, US2186310 A, US2009188187 AA, US2004107660 AA, US1958473 A, GB2157336 A1, CA2441737 AA, CA1251056 A1, CA1186910 A1,

Forward Citations: WO08116269, USD757521, USD674508, USD672885, USD672884, USD672883, USD672477, USD672061, USD672060, USD672059, USD672058, USD672057, USD666313, USD665926, USD665925, USD665924, USD665923, USD665922, USD665921, US9677263, US9518401, US9267527, US9243404, US9200442, US9004835, US8984831, US8950143, US8782993, US8695301, US8661754, US8636456, US8621806, US8529178, US8245480, US8230657, US8186122, US7765757, US7743446, US7681368, US2016208475, US2015167289, US2015096244, US2012247055, US2011154586, US2011113714, US2011041451, US2010275544, US2010226837, US2010192507, US2010043329, US2009193755, US2009188193, US2009188192, US2008184660, US2008110119, US2008000177, CN105297983, CN104088369, CN103410218, CN103206012, AU2008232318,

Abstract:
Source: US2006236628A This invention reveals new metal stud perimeter wall and load–bearing wall systems that support, without eccentricity, concrete–topped floors on open–web–steel–joists, deep–profiled composite metal decks and channel–shaped joists and allow upper floor framing to complete before floor concreting; a new composite steel beam for open–web–steel–joist support; a new shear–connection–ready open–web–steel joist; and a new perimeter metal stud wall system that incorporates an in–wall wheel–stopper. The new wall systems incorporate web–perforated studs, and/or web–perforated tracks doubling as concrete closures, and other

concrete closure devices. The composite beam incorporates shear connectors protruding through a special web–perforated track fitted with a load–bearing block and cutouts in the legs for open–web–steel–joist support. Unlike composite open–web–steel joists supporting simple–span metal decks, the new shear–connection–ready joist incorporates a flat–topped chord to allow continuous steel deck layout and field–installed shear connectors. The new joists are best used with medium–depth wide–fluted composite floor deck for maximum system efficiency.

13) Family number: 42111207 (US2008196341A) © PatBase

Title: MODULAR COLUMN SYSTEM USING INTERNALLY CONFINED HOLLOW COLUMN UNIT AND METHOD OF CONSTRUCTING THE SAME

Priority: US20070675583 20070215

Family:

Publication number	Publication date	Application number	Application date
US2008196341 AA	20080821	US20070675583	20070215

Probable Assignee: KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION

Assignee(s):(std)**:** UNIV KOREA IND AND ACAD COOP

Assignee(s): KOREA UNIV IND ; KOREA UNIV IND AND ACADEMY COOPERATION FOUNDATION ; KOREA UNIV IND AND ACADEMY COOPERATIONFOUNDATION ; KOREA UNIVERSITY INDUSTRY AND ACADEMY COOPERATIONFOUNDATION

Inventor(s):(std)**:** HAN SANG YUN ; HAN TAEK HEE ; KANG YOUNG JONG

Agent(s): INTELLECTUAL PROPERTY LAW GROUP LLP

International class (IPC 8–9): E02D27/00 E04B1/00 (Advanced/Invention); E02D27/00 E04B1/00 (Core/Invention)

CPC: E01D19/02 E01D2101/24 E01D2101/268 E01D2101/40 E04C3/34

European class: E01D19/02 E04C3/34 P01D101/24 P01D101/26H P01D101/40

US class: 52/292 52/745.18

Classification Explorer

Cited documents: US7243409 BB, US6123485 A, US5870789 A, US4836717 A, US4497597 A, US419998 A, US2005229532 AA,

Forward Citations: US9677273, US8484915, CN103541547, CN103541547, CN103243640, CN103243640, CN102966185, CN102966185, CN102041778, CN101936852,

Abstract:
Source: US2008196341A A modular column system and a method of constructing the same are constructed by stacking at least one precast unit between a foundation section and a coping section. The precast unit makes use of an internally confined hollow column unit fabricated in advance, and joint sections between the precast units are firmly formed. Thereby, the modular column system can realize a short construction period and economy because reinforcement bars and forms are not used, as well as high resistance to bending moment and reduction in cross section and self–weight of the precast unit, and thus the modular column system can provide easier and more economical assembly, and prevent brittle fracture of the joint section between the precast units.

0) CN102102643A – LATTICE HOLLOW–CONCRETE–FILLED STEEL TUBE TOWER...

14) Family number: 49135614 (CN102102643A) © PatBase

Title: LATTICE HOLLOW–CONCRETE–FILLED STEEL TUBE TOWER FOR WIND GENERATING SET

Priority: CN201110080251 20110331

Family:

Publication number	Publication date	Application number	Application date
CN102102643 A	20110622	CN201110080251	20110331

Probable Assignee: HARBIN INST OF TECHNOLOGY

Assignee(s):(std)**:** HARBIN INST OF TECHNOLOGY

Assignee(s): HARBIN INSTITUTE OF TECHNOLOGY

Inventor(s):(std)**:** CHANGYONG LIU ; CHENGHUA WANG ; JIE CHEN ; QINGHE WANG ; YUYIN WANG

Inventor(s): WANG CHENGHUA ; WANG QINGHE ; WANG YUYIN ; LIU CHANGYONG ; CHEN JIE

International class (IPC 8–9): F03D11/00 F03D11/04 F03D13/20 (Advanced/Invention)

CPC: Y02P70/523 Y02E10/72

European class: Y02E10/72 Y02E10/72N

Classification Explorer

Cited documents: WO09156827 A1, CN2665289 Y, CN2077469 U, CN201016232 Y, CN101225717 A,

Forward Citations: CN104929316, CN104929316, CN103061566,

Abstract:
Source: CN102102643A The invention discloses a lattice hollow–concrete–filled steel tube tower for a wind generating set, relates to a wind driven generator tower, and aims to solve the problems of limited applicable height of a steel tube tower drum and large steel consumption and high manufacturing cost of a lattice steel tube tower. In the tower, at least three hollow–concrete–filled steel tube column branch sections of the same length are connected to form a lattice hollow–concrete–filled steel tube tower section by welding by using a plurality of steel connecting rods; each hollow–concrete–filled steel tube column branch section comprises a steel tube, a concrete layer, two connecting flanges and a plurality of steel plate reinforcing ribs; end faces of the two ends of the steel tube are welded with one connecting flange; the steel plate reinforcing rib 5 is welded between an inner end face of each connecting flange 4 and a side wall on the end part of the steel tube; and the concrete layer is lined on the inner wall of the steel tube. The tower is a wind driven generator tower which has a simple structure, is convenient to produce, transport, hang and mount, has small steel consumption, saves steel, is low in manufacturing cost and has high fire resistance and shock resistance.

0) CN203654473U – CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED...

15) Family number: 56689136 (CN203654473U) © PatBase

Title: CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE COMPOSITE BEAM

Priority: CN201320778831U 20131129

Family:

Publication number	Publication date	Application number	Application date
CN203654473 U	20140618	CN201320778831U	20131129

Probable Assignee: HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s):(std)**:** HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s): SHUN STEEL MFG CO LTD HUBEI ; HUBEI HONGSHUN STEEL STRUCTURE MFG CO

Inventor(s):(std)**:** WANG SHAOZHONG ; WU XIAOYIN ; ZHOU FAN ; ZHOU PENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105569192, CN104563305, CN104294917, CN104278749,

Abstract:
Source: CN203654473U The utility model relates to a connecting joint of a rectangular concrete filled steel tubular column and a steel reinforced concrete composite beam, and belongs to the field of building structures. The connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam is composed of the rectangular concrete filled steel tubular column, the steel reinforced concrete composite beam, an H–type steel connector, beam stiffening plates and column connecting plates. The H–type steel connector is connected between the end face of the steel reinforced concrete composite beam and the corresponding segment column face of the rectangular concrete filled steel tubular column, the stretching ends of steel bars to be cast on the upper portion of the steel reinforced concrete composite beam and the stretching ends of steel bars at the bottom of a steel–reinforced concrete precast beam of the lower portion of the steel reinforced concrete composite beam are in lap joint with the outer edges of an upper flange plate and a lower flange plate of the H–type steel connector and the outer edges of an upper connecting plate and a lower connection plate of the corresponding segment of the rectangular concrete filled steel tubular column respectively, and integrated onsite cast forming of the beam, the column and the joint structure of the beam and the column is completed on site. According to the connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam, the joint mode of internal separating plate outer stretching connection is adopted, when earthquake acting force is received, plastic deformation happens to the beam ends and a joint area, plastic hinges are formed, and the connecting joint is good in force transmission clear performance and conforms to the strong column and weak beam failure mode in earthquake resistant design codes.

0) CN103088914A – NODE STRUCTURE FOR CONNECTION BETWEEN CONCRETE ...

16) Family number: 53792039 (CN103088914A) © PatBase

Title: NODE STRUCTURE FOR CONNECTION BETWEEN CONCRETE FILLED STEEL TUBE SPECIAL–SHAPED COLUMN AND STEEL GIRDER

Priority: CN201110342922 20111103

Family:

Publication number	Publication date	Application number	Application date
CN103088914 A	20130508	CN201110342922	20111103

Probable Assignee: UNIV YANGTZE

Assignee(s):(std)**:** UNIV YANGTZE ; YANGTZE UNIV

Inventor(s):(std)**:** DU GUOFENG ; MA CHAO ; SONG XIN

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2009280971 A2, CN2693848 Y, CN2391933 Y, CN101525904 A,

Forward Citations: CN104264794, CN104196128, CN103590512,

Abstract:
Source: CN103088914A The invention relates to a node structure for connection between a concrete filled steel tube special–shaped column and a steel girder. The node structure is characterized in that: a special–shaped column (1) is formed by welding a rectangular steel tube with a groove type steel tube; the inner empty shapes of both an upper reinforcing ring (2) and a lower reinforcing ring (3) are as same as the outer shape of the special–shaped column (1); the upper reinforcing ring (2) and the lower reinforcing ring (3) are hooped on the special–shaped column (1) and are connected in a surrounding welding manner; the upper end of a vertical rib plate (6) is in welded connection to the upper reinforcing ring (2) while the lower end of the vertical rib plate (6) is in welded connection to the lower reinforcing ring (3); the left side of the vertical rib plate (6) is in welded connection to a steel tube wall of the special–shaped column (1) while the right side of the vertical rib plate (6) is in welded connection to a web plate of a transversely H–shaped steel girder (4) through a splicing plate (5) and by utilizing a friction type high–strength bolt (7); the upper reinforcing ring (2) is in welded connection to an upper flange plate of the transversely H–shaped steel girder (4); the lower reinforcing ring (3) is in welded connection with the lower flange plate of the transversely H–shaped steel girder (4). The node structure for connection between the concrete filled steel tube special–shaped column and the steel girder has the characteristics of good mechanical property, great node rigidity, high bearing force, convenience in construction and low cost.

0) US2005082880A – HIGH ROOF STRUCTURE OF A VEHICLE

17) Family number: 31842700 (US2005082880A) © PatBase

Title: HIGH ROOF STRUCTURE OF A VEHICLE

Priority: EP20020761267 20020808 KR20030072729 20031017 US20010311138P 20010808 US20010312955P 20010815 US20010312946P 20010815 US20010313054P 20010816 US20010314622P 20010823 US20010318129P 20010907 US20020051612 20020116 WO2002US24994 20040120 US20020150355 20020517 WO2002US24994 20020808

Family:

Publication number	Publication date	Application number	Application date
CN100453383 C	20090121	CN200310125185	20031230
CN1608924 A	20050427	CN200310125185	20031230
DE10361717 A1	20050519	DE20031061717	20031230
DE60247963 D1	20160525	DE20026047963	20020808
EP2378506 A2	20111019	EP20110163230	20020808
EP2378506 A3	20140521	EP20110163230	20020808
IN00067DN2004 A	20050603	IN2004DN00067	20040108
IN01530DE2003 A	20050603	IN2003DE01530	20031210
IN01627DE2003 A	20050603	IN2003DE01627	20031229
IN217533 B	20080905	IN2003DE01530	20031210
IN217740 B	20080905	IN2003DE01627	20031229
IN218342 B	20080530	IN2004DN00067	20040108
JP2005119633 A2	20050512	JP20030420228	20031217
JP3823228 B2	20060920	JP20030420228	20031217
KR100923053 B1	20091022	KR20047000983	20020808
KR20040019353 A	20040305	KR20047000983	20020808
KR20050037265 A	20050421	KR20030072729	20031017
US2005082880 AA	20050421	US20030751048	20031231
US6983983 BB	20060110	US20030751048	20031231

Probable Assignee: HYUNDAI MOTOR CO

Assignee(s):(std)**:** HYUNDAI MOTOR CO LTD ; HYUNDAI MOTOR CO SEOUL SO ; LEE BUM J ; HYUNDAI MOTOR COMPANY SEOUL SO ; SAMSUNG DISPLAY CO LTD ; SAMSUNG ELECTRONICS CO LTD

Assignee(s): WANI BASHIR AHMAD PRINCIPAL RTI ; WANI BASHIR AHMAD PRINCIPAL RTI MIR SAJAD AHMAD ; SAMSUNG ELECTRONICS CO ; SAMSUNG DISPLAY CO LTD YONGIN SI ; MIR SAJAD AHMAD ; SAMSUNG DISPLAY CO ; HYUNDAI MOTOR COMPANY ; HYUNDAI MOTOR COMPANY SEOUL SOUL ; HYUNDAI MOTOR CO SEOUL SOUL ; CLAIRVOYANTE LABORATORIES ; CLAIRVOYANTE LABORATORIES INC ; HYUNDAI MOTOR CO

Inventor(s):(std)**:** BROWN ELLIOT CANDICE HELLEN ; CREDELLE THOMAS LLOYD ; HIGGINS PAUL ; LEE BUM J ; LEE BUM JAE ; JAE LEE BUM

Inventor(s): LEE BUM ; MIR SAJAD AHMAD ; WANI BASHIR AHMAD PRINCIPAL RTI ; HIGGINS PAUL SEBASTOPOL ; CREDELLE THOMAS LLOYD MORGAN HILL ; ELLIOTT CANDICE HELLEN BROWN ; ELLIOTT CANDICE HELLEN BROWN VALLEJO

Agent(s): WIDDOWSON NICHOLAS EDWARD; BOULT WADE TENNANT; MORGAN LEWIS AND BOCKIUS LLP

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

International class (IPC 8–9): B60J7/10 B60P3/34 B62D25/06 B62D29/04 G06T15/50 G09G3/20 G09G3/36 G09G5/00 G09G5/02 H04N5/202 (Advanced/Invention); G06T15/50 (Advanced/Non–invention); B60J7/08 B60P3/32 B62D25/06 B62D29/00 G06T15/50 (Core/Invention)

International class (IPC 1–7): B62D25/06 B62D29/04 G06T15/50 G09G3/20 G09G5/02

CPC:	B62D25/06 B62D29/043 G09G2340/0492 G09G2340/0457 G09G2340/0421 G09G2340/0414 G09G2340/0407 G09G2320/0276 G09G2300/0452 G09G5/02 G09G5/006 G09G5/005 G09G3/2003 G09G3/20
European class:	B62D25/06 B62D29/04B G09G3/20 G09G3/20C G09G5/00T2 G09G5/00T4 G09G5/02 S09G300/04P4 S09G320/02P2 S09G340/04C S09G340/04C2 S09G340/04C4 S09G340/04G S09G340/04P S09G5/00T4
US class:	296/201 296/210 296/26.04
Classification Explorer	
Cited documents:	WO0067196 A1, WO0021067 A1, US6188385 BA, US5696840 A, US5541653 A, US5398066 A, US5341153 A, US5161202 A, US5104177 A, US5029936 A, US4837914 A, US3971065 A, US31812901 P, US31462201 P, US31305401 P, US31295501 P, US31294601 P, US31113801 P, US29014301 P, US29008701 P, US29008601 P, US15035502, JP9254815 A2, JP8038483 A2, JP7242182, JP63240477 A2, JP63240477, JP63161023 U, JP55127664 U, JP2000033820 A2, JP1996038483, JP11020736 A2, EP0899604 A2,
Forward Citations:	US9327768, US9248864, US8820824, US8443441, US7641272, US2016039468, US2015137563, US2009206635, KR101746491, KR101332495, KR100844644, JP5498866, JP2012001142, JP2007168699, FR2919260, EP2019024, DE102015213520, CN103661619, CN102822039, CN102822039, CN101353057,

Abstract:
Source: US2005082880A A high roof structure of a vehicle includes a high roof formed from a RFP (Fiber Reinforced Plastics) with good durability, forming properties, and a reinforced structure is integrally installed using a predetermined adhering member and engaging member. No welding is needed. An indoor height of a vehicle is increased to a desired size and a desired indoor floor space index is obtained.

0) KR20040048688A – REINFORCING STRUCTURE FOR JOINT BETWEEN CONCRET...

18) Family number: 33846429 (KR20040048688A) © PatBase

Title: REINFORCING STRUCTURE FOR JOINT BETWEEN CONCRETE FILLED STEEL TUBE COLUMN AND STEEL SKELETON BEAM

Priority: KR20020076637 20021204

Family:

Publication number	Publication date	Application number	Application date
KR100716453 B1	20070510	KR20020076637	20021204
KR20040048688 A	20040610	KR20020076637	20021204

Probable Assignee: SAMSUNG CORP

Assignee(s):(std)**:** SAMSUNG C AND T CORP ; SAMSUNG CORP

Inventor(s):(std)**:** CHOI SEONG MO ; HAN HUI CHEOL ; KIM YO SUK ; OH JEONG GEUN ; KIM JIN HO ; SON SANG HYEON ; WANG IN SU ; YUM GYEONG SU

International class (IPC 8–9)**:** E04B1/30 (Advanced/Invention); E04B1/30 (Advanced/Non–invention); E04B1/30 (Core/Invention)

International class (IPC 1–7)**:** E04B1/30

Classification Explorer

Cited documents: JP9291599 A2,

Forward Citations: KR101428322, KR101159041,

Abstract:
Source: KR20040048688A PURPOSE: A reinforcing structure for a joint between a concrete filled steel tube column and a steel skeleton beam is provided to fill up a steel tube with concrete tightly, to fill up concrete easily and to realize a reasonable structure and an economical structure. CONSTITUTION: The reinforcing structure for a joint between a concrete filled steel tube column and a steel skeleton beam contains: a penetration plate(110) installed horizontally to penetrate the center of the concrete filled steel tube column; and a pair of inner plates(120), as a plate joined to both sides of the penetration plate(110), projected to both sides of the penetration plate(110) to adhere closely to the inside of the concrete filled steel tube column. The penetration plate(110) is connected to an upper flange of the steel–skeleton beam.

0) CN204252286U – RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–S...

19) Family number: 58958826 (CN204252286U) © PatBase

Title: RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–STEEL BEAM CONNECTION JOINT

Priority: CN201420622649U 20141027

Family:

Publication number	Publication date	Application number	Application date
CN204252286 U	20150408	CN201420622649U	20141027

Probable Assignee: UNIV NORTH CHINA WATER AND RESOU

Assignee(s):(std)**:** UNIV NORTH CHINA WATER AND RESOU

Assignee(s): NORTH CHINA UNIV OF WATER CONSERVANCY AND HYDROPOWER ; NORTH CHINA UNIV OF WATER RESOURCES AND ELECTRIC POWER

Inventor(s):(std)**:** HAN AIHONG ; WU ZONGLIANG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204252286U The utility model discloses a rectangular concrete–filled steel tube column–steel beam connection joint. The rectangular concrete–filled steel tube column–steel beam connection joint comprises a rectangular steel tube, a steel beam I, a steel beam II, a fixed sleeve, flange connecting pieces I, flange connecting pieces II, a web connecting piece, a damping plate, high–strength bolts I, high–strength bolts II, referencing connecting plates and high–strength bolts III, the left end of the steel beam I penetrates through the fixed sleeve and is aligned with the left end face of the fixed sleeve and connected to the fixed sleeve through the high–strength bolts III, the left end of the steel beam I and the reinforcing connecting plates are welded to the rectangular steel tube, the steel beam I is connected with the steel beam II through the flange connecting pieces I, the flange connecting pieces II and the web connecting piece, the damping plate is arranged between the steel beam I and the steel beam II, and concrete is poured in the rectangular steel tube. The rectangular concrete–filled steel tube column–steel beam connection joint is simple in structure, convenient to machine, capable of not only guaranteeing beam and column connection safety and reliability but also greatly reducing construction and installation difficulty, high in impact toughness, strong in extensional deformation capability, high in universality, convenient to replace, stable and efficient in energy–dissipating capacity, and higher in anti–seismic property.

0) US5218802A – COLUMN AND BEAM CONNECTING ASSEMBLY

20) Family number: 15135644 (US5218802A) © PatBase

Title: Column and beam connecting assembly

Priority: JP19900006711 19900116 JP19900006712 19900116

Family:

Publication number	Publication date	Application number	Application date
JP2719543 B2	19980225	JP19900006711	19900116
JP2719544 B2	19980225	JP19900006712	19900116
JP3212534 A2	19910918	JP19900006711	19900116
JP3212535 A2	19910918	JP19900006712	19900116
US5218802 A	19930615	US19910640483	19910114

Probable Assignee: HITACHI METALS LTD

Assignee(s):(std)**:** HITACHI KINZOKU KIZAI KK ; HITACHI METALS LTD ; HITACHI METALS TECHNO LTD ; SHIMIZU CONSTRUCTION CO LTD

Assignee(s): SHIMIZU CORP

Inventor(s):(std)**:** KITANO TAKASHI ; MATSUO HIDENARI ; MATSUO HIDESHIGE ; TOMINAGA HIROO ; TOMINAGA HIROOH ; YAMADA ATSUSHI ; YOSHIMURA MASAHIRO

International class (IPC 8–9): E04B1/16 E04B1/21 E04B1/30 E04B1/58 (Advanced/Invention); E04B1/20 (Core/Invention)

International class (IPC 1–7): E04B1/20 E04B1/30 E04B1/58

CPC: E04B1/215

European class: E04B1/21B

US class: 52/253 52/263 52/721 52/728 52/737.2 52/838 522/530

Classification Explorer

Cited documents: US5012622 A, US4905436 A, US4864797 A, US4722156 A, US4577449 A, US4211045 A, US3593477 A, US3354593 A, US1571092 A, JP63190839 A2, JP63190838 A2, JP62133239 A2, JP1295939 A2, EP0218313 A2,

Forward Citations: US6662506, US5553433, US2014311059, US2009038263, KR101448167, JP7034540, JP5106276, JP5014305, JP2566153, FR2841579, DE10261604,

Abstract:
Source: US5218802A A connecting assembly is disposed between a concrete column and at least one beam having upper and lower flanges. The connecting assembly has upper and lower connecting members and a tubular member disposed between the connecting members. The upper and lower connecting members are mounted on the upper and lower flanges of the beam, respectively. Each of the connecting members has at least one through–hole in which concrete of the column is filled, so that the column is partly encased by the tubular member. Accordingly, the column is connected to the beam.

0) US4779395A – COMPOSITE CONCRETE/STEEL FIREPROOF COLUMN

21) Family number: 3857806 (US4779395A) © PatBase

Title: Composite concrete/steel fireproof column

Priority: CA19860515211 19860801 EP19860111326 19860816 EP19860111326 19860816 LU19850086063 19850830

Family:

Publication number	Publication date	Application number	Application date
AT62307 E	19910415	AT19860111326T	19860816
CA1303380 A1	19920616	CA19860515211	19860801
DE3678510 D1	19910508	DE19863678510	19860816
EP0212593 A2	19870304	EP19860111326	19860816
EP0212593 A3	19890315	EP19860111326	19860816
EP0212593 B1	19910403	EP19860111326	19860816
LU86063 A	19870306	LU19850086063	19850830
US4779395 A	19881025	US19860901782	19860828

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; BAUS RAYMOND ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** JEAN BAPTISTE SCHLEICH ; RAYMOND BAUS ; SCHLEICH JEAN BAPTISTE ; BAUS RAYMOND

Inventor(s): BAUS RAYMOND B 4000 LIEGE BE ; SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class (IPC 8–9): E04C3/293 (Advanced/Invention); E04C3/29 (Core/Invention)

International class (IPC 1–7): E04C3/293 E04C3/34

CPC: E04C3/293

European class: E04C3/293

US class: 52/721.3 52/723 52/724 52/724.5 52/725 52/727 52/729.1 52/834 52/837

Classification Explorer

Cited documents: US966274 A, US926005 A, US925865 A, US916378 A, US650299 A, US596217 A, US515963 A, US4571913 A, US4261156 A, US312349 A, US2198985 A, US2065493 A, US1573735 A, US1457598 A, US1203283 A, GB8648, GB237221 A, EP0133565 A2, EP0123642 A2, DE813020 A, DE2743639 A1, CH485924 A, CH211069 A,

Forward Citations: WO9851883, US9677273, US8938882, US8484915, US8438808, US8266856, US8065848, US7930866, US7882679, US7721496, US7213379, US7107730, US6061992, US2006213138, US2003029111,

Abstract:
Source: US4779395A A fireproof construction element has a plurality of integrally interconnected and parallel profile beams each having a longitudinally extending outer flange defining an outer surface and a longitudinally extending web extending inwardly from the flange. The webs are each formed adjacent the flange with a row of at least generally longitudinally extending, elongated, and laterally throughgoing slots. The beams form a plurality of outwardly open channels laterally bounded by the flanges. Respective masses of concrete substantially fill the channels between the webs and inward of the flanges and have outer surfaces contiguous with the outer surfaces of the beam flanges. The slots can be provided in two rows with the slots of one row overlapping and staggered with the rows of the other row.

0) CN205329861U – COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GI...

22) Family number: 62704970 (CN205329861U) © PatBase

Title: COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GIRDER STEEL PUNCHING HAUNCH NODE

Priority: CN201520968653U 20151130

Family:

Publication number	Publication date	Application number	Application date
CN205329861 U	20160622	CN201520968653U	20151130

Probable Assignee: UNIV NORTH CHINA TECHNOLOGY

Assignee(s):(std)**:** NORTH CHINA UNIV OF TECH ; NORTH CHINA UNIV OF TECHNOLOGY ; UNIV NORTH CHINA TECHNOLOGY

Inventor(s):(std)**:** WANG QIANG ; ZHANG YUFEN

International class (IPC 8–9)**:** E01D101/26 E01D19/00 E04B1/58 E04B1/98 (Advanced/Invention); E01D101/26 (Advanced/Non–invention)

Classification Explorer

Abstract:
Source: CN205329861U The utility model discloses composite concrete –filled steel tube post – girder steel punching haunch node relates to the nodal connection form of a composite concrete –filled steel tube post and girder steel, belongs to building engineering and bridge engineering technical field. This node comprises composite concrete –filled steel tube post, girder steel and biography power component. The composite concrete –filled steel tube post constitute by interior steel pipe, outer steel pipe and dabbling concrete, the girder steel form by last lower flange and web, biography power component be slant armpit board. Steel beam web plate locates to have a perfect understanding in succession in the node core, steel pipe internal discontinuity including the lower flange on the girder steel, and the girder steel carries out welding reinforcement with inside and outside steel pipe intersection, simultaneously, weld ribbing's slant armpit board between girder steel and composite concrete –filled steel tube post. The utility model discloses a node construction is simple, and construction convenience has combined girder steel punching and beam –ends to add the structure measure of armpit, and it is high to possess rigidity and intensity, and the wholeness is good, passes the power route and clearly and definitely waits the advantage, can realize the rigid connection of composite concrete –filled steel tube post and girder steel.

0) US2016177534A – PRECAST INTEGRAL POST AND RETAINING WALL AND ME...

23) Family number: 58242295 (US2016177534A) © PatBase

Title: PRECAST INTEGRAL POST AND RETAINING WALL AND METHOD FOR INSTALLING SAME

Priority: US20130842807P 20130703 US20140902815 20140703 WO2014US45404 20140703

Family:

Publication number	Publication date	Application number	Application date
US2016177534 AA	20160623	US20140902815	20140703
WO15003129 A1	20150108	WO2014US45404	20140703

Probable Assignee: UTILITY CONCRETE PRODUCTS LLC

Assignee(s):(std)**:** HERATY THOMAS ; UTILITY CONCRETE PRODUCTS LLC

Inventor(s):(std)**:** HERATY THOMAS

Agent(s): PAVLIK GEORGE S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D17/20 E02D29/02 E04H12/22 (Advanced/Invention)

CPC: E02D17/20 E02D29/0266 E04H12/2215 E02D29/0225 E02D29/02

US class: 405/285 405/286

Classification Explorer

Cited documents: US8635833 BB, US5368416 A, US5233810 A, US5218797 A, US5144779 A, US5050828 A, US4911585 A, US4836718 A, US3815369 A, US2007092343 AA, US2002069602 AA,

Abstract:
Source: US2016177534A A prefabricated retaining wall structure and method of installing. The structure has a precast concrete face panel and an elongated support column permanently joined to the face panel. The face panel has a top and bottom, opposing end edges and first and second sides with a thickness therebetween. The elongated support column is secured to the face panel between the opposing end edges. The column has first and second ends and an elongated body therebetween and extends along a portion of the first side of the face panel.

0) KR20140021278A – RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HOR...

24) Family number: 55883096 (KR20140021278A) © PatBase

Title: RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HORIZONTAL WELDING DIAPHRAGM OF FLANGE PLATES AND CONNECTING BARS

Priority: KR20120087438 20120809

Family:

Publication number	Publication date	Application number	Application date
KR101402958 B1	20140602	KR20120087438	20120809
KR20140021278 A	20140220	KR20120087438	20120809

Probable Assignee: SNU R AND DB FOUNDATION

Assignee(s):(std)**:** INDUSTRIAL ACADEMIC COOPERATION GROUP SEOUL NATIONAL UNIV ; SNU R AND DB FOUNDATION

Inventor(s):(std)**:** PARK HONG GUN ; KIM CHANG SOO

International class (IPC 8–9)**:** E04B1/30 E04B1/58 E04C3/30 (Advanced/Invention)

Classification Explorer

Cited documents: KR20080037436 A, KR19990081415 A, JP3049571 B2, JP2003003568 A2,

Abstract:
Source: KR20140021278A The present invention relates to a CFT column having a diaphragm with simple structure due to horizontally welding connection reinforcing bars to flange plates and a portion for joining the same and steel beams using the same, wherein the portion is formed into a structure for rigidly joining the CFT column and the steel beams with definite performances properly using the CFT column. The CFT column according to the present invention is a CFT column having concrete filled therein, and comprises: a steel column; a pair of the flange plates corresponding to the installation directions of the steel beams, facing each other, and horizontally welded to the inner or the outer surfaces of the steel column; and the connection reinforcing bars installed to connect the pair of the flange plates each other and welded to the flange plates by the whole lengths thereof after laid on the flange plates. The structure for rigidly joining the CFT column and the steel beams according to the present invention comprises: the CFT column having the diaphragm in which the connection reinforcing bars are horizontally welded to the flange plates; the steel beams having flanges welded to the flange plates or the steel column at the same level of the flange plates of the CFT flange plates; and the filled concrete filled in the steel column.

0) CN205329848U – HALF PUNCHING HAUNCH NODE ON COMPOSITE CONCRETE...

25) Family number: 62704815 (CN205329848U) © PatBase

Title: HALF PUNCHING HAUNCH NODE ON COMPOSITE CONCRETE –FILLED STEEL TUBE POST – GIRDER STEEL

Priority: CN201520968654U 20151130

Family:

Publication number	Publication date	Application number	Application date
CN205329848 U	20160622	CN201520968654U	20151130

Probable Assignee: UNIV NORTH CHINA TECHNOLOGY

Assignee(s):(std)**:** NORTH CHINA UNIV OF TECH ; NORTH CHINA UNIV OF TECHNOLOGY ; UNIV NORTH CHINA TECHNOLOGY

Inventor(s):(std)**:** WANG QIANG ; ZHANG YUFEN

International class (IPC 8–9): E01D19/00 E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205329848U The utility model discloses half punching haunch node on the composite concrete –filled steel tube post girder steel relates to the nodal connection form of a composite concrete –filled steel tube post and girder steel, belongs to building engineering and bridge engineering technical field. This node comprises composite concrete –filled steel tube post, girder steel and biography power component. The composite concrete –filled steel tube post constitute by interior steel pipe, outer steel pipe and dabbling concrete, the girder steel form by last lower flange and web, biography power component be slant armpit board, the girder steel passes outer steel pipe and welds on interior steel pipe wall, and the girder steel carries out welding reinforcement with outer steel pipe wall intersection, simultaneously, weld ribbing's slant armpit board between girder steel and composite concrete –filled steel tube post. The utility model discloses a node construction is simple, construction convenience, owing to combined half punching on the girder steel and beam –ends to add the structure measure of armpit, it is high to possess rigidity and intensity, and anti –seismic performance is good, passes the route of doing all can and clearly and definitely waits the advantage, can realize effective transmission of doing all can between composite concrete –filled steel tube post and the girder steel.

0) US5174080A – COLUMN AND BEAM CONNECTING ASSEMBLY

26) Family number: 7480758 (US5174080A) © PatBase

Title: Column and beam connecting assembly

Priority: JP19900041821 19900222

Family:

Publication number	Publication date	Application number	Application date
JP2645365 B2	19970825	JP19900041821	19900222
JP3244725 A2	19911031	JP19900041821	19900222
US5174080 A	19921229	US19910657167	19910219

Probable Assignee: SHIMIZU KENSETSU KK

Assignee(s):(std)**:** HITACHI KINZOKU KIZAI KK ; HITACHI METALS LTD ; SHIMIZU CONSTRUCTION CO LTD

Assignee(s): HITACHI METALS TECHNO LTD ; SHIMIZU KENSETSU KK ; SHIMIZU CORP ; HITACHI KINZOKU KK ; HITACHI KIZAI KK ; HITACHI METAL LTD

Inventor(s):(std)**:** KITANO TAKASHI ; MATSUO HIDENARI ; MATSUO HIDESHIGE ; TOMINAGA HIROO ; TOMINAGA HIROOH ; YAMADA ATSUSHI ; YOSHIMURA MASAHIRO

International class (IPC 8–9)**:** E04B1/16 E04B1/30 E04B1/58 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/00 E04B1/16 E04B1/30 E04B1/58

CPC: E04B1/215

European class: E04B1/21B

US class: 52/252 522/520

Classification Explorer

Cited documents: US4905436 A, US4722156 A, US3593477 A, US3374592 A, US1625899 A, US1571092 A, US1571091 A, US1248049 A, JP63190839 A2, JP63190838 A2, JP60018785 A2, EP0218313 A2,

Forward Citations: WO0079064, US9677273, US8800229, US8635834, US8484915, US8205408, US8176706, US8146322, US8122672, US8122671, US7987638, US6662506, US6543195, US5657597, US5628156, US5259160, US2011088348, US2010043348, US2010043347, US2010043338, US2010043316, US2009038263, US2008047221, US2006112657, US2004065657, JP5148898, CN105297915,

Abstract:
Source: US5174080A A connecting assembly is disposed between a concrete column and at least one beam having upper and lower flanges. The connecting assembly has upper and lower first connecting members each having at least one through–hole through which at least one portion of the column is disposed so that both of the first connecting members are mounted on the column. Upper and lower second connecting members are mounted on the upper and lower flange portions of the beam, respectively. The upper and lower second connecting members are affixed respectively to the upper and lower first connecting members by screw engagements, whereby the column is connected to the beam.

0) CN103526950A – CONCRETE–FILLED SQUARE STEEL TUBE AND STEEL BEA...

27) Family number: 55643514 (CN103526950A) © PatBase

Title: CONCRETE–FILLED SQUARE STEEL TUBE AND STEEL BEAM SEMI–RIGID REINFORCING JOINT FOR PREVENTING PROGRESSIVE COLLAPSE

Priority: CN201310519227 20131029

Family:

Publication number	Publication date	Application number	Application date
CN103526950 A	20140122	CN201310519227	20131029

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Assignee(s): SHAN DONG UNIV OF SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** CHEN YIZHU ; LIU QING ; QIU JING ; TONG JIANHONG

International class (IPC 8–9): E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103526950A The invention discloses a concrete–filled square steel tube and steel beam semi–rigid reinforcing joint for preventing progressive collapse. The joint comprise a concrete–filled square steel tube column and an I–shaped steel beam. Internal partitions and reinforcing plates are respectively disposed inside and outside the square steel tube walls corresponding to the upper flange and the lower flange of the steel beam. A U–shaped steel connecting plate winds around the square steel tube column wall and is fixed with I–shaped steel beam webs on two sides of the column through high–strength bolts. The beam columns are connected through the U–shaped steel connecting plate and the high–strength bolts. The U–shaped steel connecting plate is also used as a vertical joint connecting plate. The internal partitions under impact load can avoid local buckling of square steel tube column walls. The reinforcing plates can increase joint end bending resistance. The joint is reasonable in structure, uncontinuous beams are integrated while column continuity is also considered, structural integrity and joint ductility are increased, dynamic effect during partial component failure is relieved, and progressive collapse preventing capability is increased.

0) KR20150001636U – JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL ...

28) Family number: 59103412 (KR20150001636U) © PatBase

Title: JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL BEAM

Priority: KR20130008644U 20131021

Family:

Publication number	Publication date	Application number	Application date
KR200477104 Y1	20150506	KR20130008644U	20131021
KR20150001636 U	20150429	KR20130008644U	20131021

Probable Assignee: IAE IAAEA IA AE

Assignee(s): IAE IAAEA IA AE ; YIBYEONGHUI

International class (IPC 8–9): E04B1/24 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: KR20130105249 A,

Abstract:
Source: KR200477104Y This is intended to reinforce the junction with the outer diaphragm and improve the way strength and stiffness of steel column joints, minimizing the length of the diaphragm protruding in the outer steel pipe, the inside concrete–filled steel tube column to be filled with concrete when the backroom It will be on a hollow steel tube columns and steel beams in the structure of the joints.Junction structure of a hollow steel tube columns and steel beams designed according to the preferred embodiment of this is a hollow steel tube columns and steel pipe poles of the first hollow shaft joint member joined to the first axis on both sides, a hollow steel tube column 1 and a second joining member joined to the second axis on both sides perpendicular to the shaft axis, comprising a hollow steel joined to the steel tube column information of the first shaft member and the second joint shaft via the joining members and, the first axis Joints material, both ends of the width direction is composed of rectangular cross–section which extends a predetermined length protrudes from the hollow steel tube so that the Pillar hollow pillar junction plate is bonded to the steel pipe columns, the columns are vertically protruding from the center junction plate and webs of steel beams It consists of a T–shape, including the joint plate coupled beam and a second axial abutment member, in the height of the pole junction plate a hollow steel pipe is spaced apart in the longitudinal direction of the column is extended to protrude at both ends of the pole junction plate bonding, and bonding plate and steel pipe columns and pillars are joined inside corners are cut in an arc shape and is characterized in that the upper and lower flange of the steel beam consists of a pair of horizontal stiffeners are bonded, respectively.

0) CN104863271A – CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CO...

29) Family number: 60198362 (CN104863271A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CONCRETE BEAM JOINT CONNECTION METHOD

Priority: CN201510288472 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104863271 A	20150826	CN201510288472	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** GU JUN ; LIU JIEPENG ; YU YU

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP4696843 B2, JP2006144427 A2, CN203866976 U, CN203640061 U, CN201507030 U, CN104499575 A, CN103821235 A,

Abstract:
Source: CN104863271A The invention belongs to the field of building structures, and particularly relates to a concrete–filled steel tube column–reinforced concrete beam joint connection method. The method is a novel connection method aiming to solve the problems that a connection joint of a concrete–filled steel tube column and a reinforced concrete beam is large in welding workload and large in construction operation difficulty. The method is characterized in that an upper flange plate, a lower flange plate, a vertical plate, a plurality of longitudinal ribs, a plurality of sleeves and a circular steel pipe are included and has the advantages that the vertical plate is narrow, the beam end rib drawing arrangement is not affected by the vertical plate; the tail ends of reinforcing steel bars are provided with the sleeves, the length of the lap joint segment is decreased, the length of the upper flange plate and the lower flange plate can be decreased, conveying is facilitated, and steel can be saved; connection among the upper flange plate, the lower flange plate, the vertical plate and column type steel flange is finished in a factory, the construction stage is free of welding work, and construction is fast and convenient to conduct.

0) KR20100125612A – CONCRETE–FILLED STEEL TUBE COMPOSITE GIRDER

30) Family number: 47725510 (KR20100125612A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COMPOSITE GIRDER

Priority: KR20090044413 20090521

Family:

Publication number	Publication date	Application number	Application date
KR101044162 B1	20110624	KR20090044413	20090521
KR20100125612 A	20101201	KR20090044413	20090521

Probable Assignee: LEE TA

Assignee(s):(std)**:** LEE TA

Inventor(s):(std)**:** LEE TA

International class (IPC 8–9): E01D2/00 E04C3/04 (Advanced/Invention)

CPC: E01D2/00 E01D2/04 E01D2101/268 E04C3/04

Classification Explorer

Cited documents: KR20060053134 A, KR20050063280 A, KR200369732 Y, KR20030069732 A, KR100379152 B1, KR100379152,

Forward Citations: CN104006283, CN104006283,

Abstract:
Source: KR20100125612A PURPOSE: A concrete–filled steel tube composite girder is provided to improve compressive strength, shearing strength, bending strength, and tensile strength and to reduce costs by improving the service life of the girder. CONSTITUTION: A concrete–filled steel tube composite girder is composed of a steel tube(100), webs(200), and a flange(300). The steel tube is filled with concrete(10). Spiral protrusions are formed inside the steel tube. The webs are longitudinally welded in the bottom of the steel tube. The flange is longitudinally welded in the bottom of the webs. Reinforced concrete with steel wires is placed in both sides of the parts in which the webs and the flange are coupled.

0) CN101818478A – CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCUL...

31) Family number: 46785759 (CN101818478A) © PatBase

Title: CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCULAR STEEL TUBULAR PIER COLUMN AND CONCRETE COVER BEAM

Priority: CN201010120563 20100309

Family:

Publication number	Publication date	Application number	Application date
CN101818478 A	20100901	CN201010120563	20100309
CN101818478 B	20120725	CN201010120563	20100309

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; HOHAI UNIVERSITY ; UNIV HOHAI ; UNIV HEHAI

Assignee(s): HEHAI UNIVERSITY

Inventor(s):(std)**:** BOHAI JI ; HAIFENG MO ; YADONG DONG ; ZHONGQIU FU

Inventor(s): JI BOHAI ; MO HAIFENG ; DONG YADONG ; FU ZHONGQIU

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Core/Invention)

Classification Explorer

Cited documents: JP2005030119 A2, JP2002097609 A2, CN2507939 Y, CN1963105 A, CN1560369 A, CN1548654 A, CN101476348 A,

Forward Citations: CN105926427, CN105803925, CN105803925, CN104404869, CN103452039, CN103452039, CN103147460,

Abstract:
Source: CN101818478A The invention discloses a connection structure for a concrete–filled circular steel tubular pier column and a concrete cover beam. The connection structure comprises a reverse T–shaped steel beam, the concrete cover beam and the concrete–filled circular steel tubular pier column, wherein the reverse T–shaped steel beam is pre–buried at the lower end of the concrete cover beam. The connection structure is characterized by also comprising a steel tubular cover plate and a riveting rib with a nut, wherein the steel tubular cover plate is welded with the upper end of the concrete–filled circular steel tubular pier column; the hole on the web plate of the reverse T–shaped steel beam is connected with the concrete; a flange plate of the T–shaped steel beam is fixedly connected with the steel tubular cover plate through the riveting rib with the nut; and the two ends of the riveting rib with the nut are embedded in the concrete cover beam and the concrete–filled circular steel tubular pier column. The connection structure needs no complex arrangement of reinforcement, and each component can be processed in the factory and assembled on site. Only welding of a triangular supporting steel plate and the steel tubular cover plate is needed on site so as to ensure small workload and definite force transferring path. The connection structure has the advantages of simple and quick construction during the implementation.

0) JP5263471A – COLUMN–BEAM JOINT STRUCTURE FOR CONCRETE–FILLED...

32) Family number: 10525918 (JP5263471A) © PatBase

Title: COLUMN–BEAM JOINT STRUCTURE FOR CONCRETE–FILLED ANGULAR STEEL PIPE COLUMN–STEEL FRAME BEAM STRUCTURE

Priority: JP19920060279 19920317

Family:

Publication number	Publication date	Application number	Application date
JP5263471 A2	19931012	JP19920060279	19920317

International class (IPC 8–9): E04B1/24 E04B1/30 E04B1/58 (Advanced/Invention); E04B1/24 E04B1/30 E04B1/58 (Core/Invention)

International class (IPC 1–7): E04B1/24 E04B1/30

Classification Explorer

Abstract:
Source: JP5263471A PURPOSE: To improve the settlement around a stair and around the outer periphery of a building and facilitate the concrete construction and the welding of a column angular joint by arranging cross vertical diaphragms over the column capital–beam faying section and column base section of a concrete–filled angular steel pipe column, and partially welding the angular joint of the steel pipe column over the whole column length. CONSTITUTION: A pair of flange skin plates 1 are arranged in parallel, and the flange side of cross vertical diaphragms 3 is welded. Web skin plates 2 are coupled between the skin plates 1 and the cross vertical diaphragms 3, and the web side of the cross vertical diaphragms 3 is welded. An angular column is welded, and concrete 5 is filled. The cross vertical diaphragms 3 are arranged over the column capital section, column base section, and beam faying section of the concrete–filled angular steel pipe column A for reinforcement. The shearing yield strength of a column and the beam faying section is increased, and the filled concrete 5 at the column capital section and column base section area and the local buckling of the steel pipe column A can be confined.

0) JP2005009172A – STRUCTURE AND METHOD FOR JOINING CONCRETE–FILLE...

33) Family number: 31584919 (JP2005009172A) © PatBase

Title: STRUCTURE AND METHOD FOR JOINING CONCRETE–FILLED SQUARE STEEL–PIPE COLUMN AND REINFORCED CONCRETE BEAM TOGETHER

Priority: JP20030174431 20030619

Family:

Publication number	Publication date	Application number	Application date
JP2005009172 A2	20050113	JP20030174431	20030619

Probable Assignee: OHKI CORP

Assignee(s):(std)**:** OHKI CORP

Inventor(s):(std)**:** ARAKAWA GEN ; HANAI NOBUAKI ; KAKEO TOSHIAKI ; NAKANE HIROSHI ; OGAWA MASA

International class (IPC 8–9): E04B1/30 (Advanced/Invention); E04B1/30 (Core/Invention)

International class (IPC 1–7): E04B1/30

Classification Explorer

Abstract:
Source: JP2005009172A PROBLEM TO BE SOLVED: To provide a joining structure and a construction method for a concrete–filled square steel–pipe column and a reinforced concrete beam, which enable the effective utilization of the total strength of a main reinforcement of the beam, and which prevent an opening leakage from being caused by leakage of concrete from a gap between a horizontal hole of the steel–pipe column and the main reinforcement of the beam, passing through the horizontal hole. SOLUTION: In the method for joining the concrete–filled square steel–pipe column and the reinforced concrete beam together, a beam reinforcement 5, which is composed of a deformed bar with a screw, is arranged in such a manner as to penetrate the whole of a beam reinforcement inserting hole 3 of opposed peripheral side face plates 2 of the square steel–pipe column 1; each anchorage fitting 6 with a female screw, which is screwed into the beam reinforcement 5, is pressure–bonded to outer surfaces of the opposed peripheral side face plates 2 outside the column 1; a diameter–enlarged flange 7 for reducing bearing pressure and preventing the leakage of the concrete from the opening is integrally provided on the side of the contact with the column 1 in the anchorage fitting 6; and the concrete 13 and the concrete 14 are placed in such a manner that the beam reinforcement 5 is embedded inside the column 1 and on the beam side of the column 1. Each of the anchorage fittings 6 with the female screw is mounted before the concrete 13 is placed.

34) Family number: 54613715 (CN203145194U) © PatBase

Title: INTERNAL DIAPHRAGM JOINT OF VARIABLE FLANGE STEEL I–BEAM AND SQUARE CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201320111675U 20130312

Family:

Publication number	Publication date	Application number	Application date
CN203145194 U	20130821	CN201320111675U	20130312

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Assignee(s): SHAN DONG UNIV OF SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** YIN YANXIA ; WANG RUIGANG ; WANG LAI

International class (IPC 8–9): E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105201103, CN104912197, CN104912196, CN104047365, CN104047364, CN104047363, CN103993670, CN103882993, CN103643743, CN103643743,

Abstract:
Source: CN203145194U The utility model discloses an internal diaphragm joint of a variable flange steel I–beam and a square concrete filled steel tubular column. The internal diaphragm joint comprises the steel I–beam and the square concrete filled steel tubular column. Internal diaphragms are welded on the square steel tubes on an upper flange and a lower flange of the steel I–beam. The flange section at the end of the steel I–beam is uniform in width, the flange section from the flange with uniform width to the joint of the square concrete filled steel tubular column is variable in width, the cross section of the flange with variable width is of a isosceles trapezoid, the inclination degrees of the slopes of the isosceles trapezoid are 1:2.5, and the horizontal width of the slopes is one tenth to one fifth of the width of the flange with uniform width. Due to the fact that the width of the flange is variable, the flange is reinforced, therefore, a plastic hinge is forced to be arranged on the beam at the position at a certain distance from the beam joint, the joint is protected, brittle failure caused by the fact that the deformation capacity of the joint worsens is avoided, the drawability of the structure is improved, and the design idea that the joint is strong is achieved.

0) CN204023800U – STEEL–CORBEL–TYPE JOINT CONNECTION STRUCTURE FO...

35) Family number: 58054515 (CN204023800U) © PatBase

Title: STEEL–CORBEL–TYPE JOINT CONNECTION STRUCTURE FOR CONCRETE–FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE BEAM

Priority: CN201420368483U 20140707

Family:

Publication number	Publication date	Application number	Application date
CN204023800 U	20141217	CN201420368483U	20140707

Probable Assignee: CHINA CONSTR STEEL STRUCTURE JIANGSU CO LTD

Assignee(s):(std)**:** CHINA CONSTR STEEL STRUCTURE JIANGSU CO LTD ; CHINA CONSTRUCTION STEEL STRUCTURE JIANGSU CO LTD

Assignee(s): STEEL CONSTRUCTION CO LTD IN JIANGSU ; CHINA CONSTRUCTION STEEL STRUCTURE JIANGSU CO

Inventor(s):(std)**:** CAO HUIFA ; DAI WENLONG ; OUYANG CHAO ; PU WEIBIN ; ZHU FUJIN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204023800U The utility model relates to a steel–corbel–type joint connection structure for a concrete–filled steel tubular column and a steel reinforced concrete beam. The steel–corbel–type joint connection structure comprises the concrete–filled steel tubular column (1), a steel corbel (2) and the steel reinforced concrete beam (3). A steel beam in the steel reinforced concrete beam (3) comprises a uniform–section section and a variable–section transition section. The outer wall of the concrete–filled steel tubular column (1) is connected with the steel corbel (2) in a constant–strength butt weld mode in a factory, and the variable–section transition section of the steel beam in the steel reinforced concrete beam (3) is connected with the uniform–section section of the steel beam in the steel reinforced concrete beam (3) in a constant–strength butt weld mode in the factory. The steel corbel (2) is connected with the variable–section transition section of the steel beam in the steel reinforced concrete beam (3) in a conventional steel beam spliced joint mode during field installation, longitudinal reinforcements in the steel reinforced concrete beam (3) are welded to the top flange and the bottom flange of the variable–section transition section of the steel beam, and then the parts are wrapped by concrete. By means of the joint connection structure, the field construction difficulty can be lowered, the welding quality of the ends of reinforcements can be improved, and the seismic fortification requirements of a joint can be met.

0) CN205134979U – RECTANGULAR CONCRETE –FILLED STEEL TUBULAR COLU...

36) Family number: 62031864 (CN205134979U) © PatBase

Title: RECTANGULAR CONCRETE –FILLED STEEL TUBULAR COLUMN (CFST) POST AND ANTI REINFORCEMENT NODE THAT COLLAPSES IN SUCCESSION OF GIRDER STEEL

Priority: CN201520861441U 20151102

Family:

Publication number	Publication date	Application number	Application date
CN205134979 U	20160406	CN201520861441U	20151102

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECH ; SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Inventor(s):(std)**:** SONG GE ; WANG JIAN ; WANG LIANG

International class (IPC 8–9): E01D19/00 E01D22/00 E04B1/30 E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205134979U The utility model discloses a rectangular concrete –filled steel tubular column (CFST) post and anti reinforcement node that collapses in succession of girder steel, it includes rectangle steel core concrete column, I shaped steel roof beam and reinforced structure, the lower flange beading is on rectangle steel pipe column wall on the I shaped steel roof beam, and steel beam web plate passes through first angle steel fixed connection with rectangle steel pipe column wall, sets up the reinforced structure in I shaped steel roof beam lower flange and support connnection department, and the reinforced structure passes through the second angle steel and centers on rectangle steel pipe column wall fixed connection with girder steel lower flange and rectangle steel pipe column wall fixed connection, second angle steel by U shaped steel layering. The utility model discloses an angle steel and U shaped steel layering have increased the drawknot power of adjacent roof beam lower flange, have strengthened the anti bucking ability of lower flange department steel pipe column wall simultaneously, and when taking place to collapse in succession, the girder steel lower flange is drawn, for the roof beam lower flange with provide extra biography power route being connected of post, has improved the ductility of node and has resisted the ability of collapsing in succession.

0) CN202990244U – DUAL–T SHAPED COMPOSITE BEAM WITH PRESTRESS CON...

37) Family number: 54097791 (CN202990244U) © PatBase

Title: DUAL–T SHAPED COMPOSITE BEAM WITH PRESTRESS CONCRETE FILLED STEEL TUBE CORE BAR

Priority: CN201220730637U 20121226

Family:

Publication number	Publication date	Application number	Application date
CN202990244 U	20130612	CN201220730637U	20121226

Probable Assignee: UNIV SOUTHEAST

Assignee(s):(std)**:** SOUTHEAST UNIV ; UNIV SOUTHEAST

Inventor(s):(std)**:** ZHANG YUFENG ; XU WENPING ; SUN XUN ; SHI XIANWANG ; LU JIANFENG ; LI JINBAO ; HUANG MING ; GUO XUN ; CHEN YOUCHUN

International class (IPC 8–9): E04C3/294 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103031926, CN103031926,

Abstract:
Source: CN202990244U The utility model discloses a dual–T shaped composite beam with a prestress concrete filled steel tube core bar. A prestress concrete filled steel tube core bar is used as a tension bottom flange, a corrugated steel plate is adopted as a web, and a high–strength concrete top flange top plate is poured, so as to form a composite structural beam. The prestress concrete filled steel tube core bar is composed of a steel pipe, intra–pipe concrete and prestress reinforcing steel bar, so that a strong tension capacity is guaranteed; and the prestress concrete filled steel tube core bar is combined with the corrugated steel web in use, so as to achieve complementary advantages, improve shearing resistance and tension capacity, and enhance span capacity of crossbeam. The composite beam disclosed by the utility model has the advantages of light weight, great span capacity, strong bearing ability, high rigidity, low construction cost and like, and can be massively produced in a prefabricated part factory; the composite beam, as a roofing beam, can construct a single–layer industrial factory building with a 30–48m ultra–large span, and, as a floor beam, can construct a multi–layer industrial factory building with a 21–30m ultra–large span, so that the composite beam not only can meet demand on large space of industrial production but also can save land.

38) Family number: 33642213 (WO06080677A1) © PatBase

Title: TSC BEAM FORMED WITH BOTTLE NECK TOP FLANGE

Priority: KR20040079745 20041006

Family:

Publication number	Publication date	Application number	Application date
KR100592398 B1	20060626	KR20040079745	20041006
KR20060030834 A	20060411	KR20040079745	20041006
WO06080677 A1	20060803	WO2005KR03260	20051001

Probable Assignee: LEE CHANG NAM

Assignee(s):(std)**:** LEE CHANG NAM

Inventor(s):(std)**:** LEE CHANG NAM

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9)**:** E04C3/20 E04C3/293 (Advanced/Invention); E04C3/20 E04C3/293 (Advanced/Non–invention); E04C3/20 E04C3/29 (Core/Invention)

CPC: E04B5/29 E04C3/293 E04C2003/0434 E04C2003/0473

European class: E04B5/29 E04C3/293 P04C3/04S2B P04C3/04S3U

Classification Explorer

Cited documents: US6543195 BB, US6058673 A, US5315804 A, KR20030086531 A, KR20030008875 A,

Forward Citations: WO11012974, WO11012974, US2010287878, KR101482977, KR101469798, KR101222206, KR101085085, KR101042496, KR101012010, KR101000269, KR100918983, KR100887389, KR100872959, KR100872959, KR100777566, KR100777565, ITVI20090198, ITUD20110048, FR2927916, DE102011010672, DE102011010672,

Abstract:
TSC beam formed with bottle neck top flange(BNTSC Beam), which attached shear connectors easily to top flange in spite of producing with a steel sheet of less than 6mm thick and secured economical efficiency, has been developed. BNTSC Beam of the present invention makes it possible for irrsquo;s the total width to be narrow, and it makes possible the size of its column attached small in Figure 1. BNSTC Beam can attach bolt+steel pipe(7) shear connectors easily and low cost instead of welding. Web(3) of BNTSC Beam(1) takes a stirrup of reinforced concrete beam role. Top flange(2) has charge of a compressive force of bending during construction period. As level part of top flange is used into projection putting up deck plate(9) and is inside of web(3), it takes effect that dwindles torsion moment twisting by eccentric load. The vertical part of top flange takes a role the inserts bolt+steel pipe base fixing nuts(8) and shear connector role and as bond stress itself. The above bolt+steel pipe keeps up width between left and right top flanges. And it prevents lateral buckling induced by compressive force of bending during construction period, takes a foothold role during working, makes it to pass the bottom reinforcing bar of slab into tenon reinforcing bar(36) through extra bolt holes(6). As top flange is formed with bottleneck, the possibility of interfacial phenomena concrete and web plates can be excluded. Bottom flange(4) is a tensile material against bending tensile strength, and Yshape projection(5) takes a role that increase cross section of tensile material by bending moment and takes a groove role welding two pieces of bilateral symmetry.

0) CN104074276A – A LINKING STRUCTURE BETWEEN CONCRETE FILLED STI...

39) Family number: 57500386 (CN104074276A) © PatBase

Title: A LINKING STRUCTURE BETWEEN CONCRETE FILLED STILL TUBULAR COLUMNS AND REINFORCED CONCRETE BEAMS AND A CONSTRUCTION METHOD

Priority: CN201310686039 20131216

Family:

Publication number	Publication date	Application number	Application date
CN104074276 A	20141001	CN201310686039	20131216

Probable Assignee: CHINA CONSTR 4TH ENG DIVISION

Assignee(s):(std)**:** CHINA CONSTR 4TH ENG DIVISION ; CHINA CONSTRUCTION FOURTH ENGINEERING DIVISION CORP LTD

Assignee(s): CHINA CONSTRUCTION FOURTH ENGINEERING DIVISION CO

Inventor(s):(std)**:** PENG ZHENFENG ; LONG MINJIAN ; HUANG TAO ; CHEN JING

International class (IPC 8–9): E04B1/58 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP6108536 A2, JP11124912 A2, CN203626061 U, CN201991083 U, CN201722786 U, CN102704575 A, CN101063319 A,

Forward Citations: CN105002930, CN105002930, CN104929314,

Abstract:
Source: CN104074276A This invention introduces a linking structure between concrete filled still tubular columns and reinforced concrete beams and a construction method. The structure includes a steel–pipe column; steel–brackets are welded at the joints between the steel–pipe column and the reinforced concrete beams; each steel–bracket is of an H–shaped structure including an upper flange and a lower flange; outer–side steel bars in each reinforced concrete beam connected with the steel–pipe column bypass the steel–pipe column to reach the other side of the steel–pipe column and connect with the outer–side steel bars in a reinforced concrete beam on another side, or are welded with the upper flange or the lower flange of the matching steel bracket; the other steel bars in each reinforce concrete beam which cannot bypass the steel–pipe column are welded with the upper flange or lower flange of the matching steel bracket. The method being adopted is the combination of factory–like machining and on–site installation. The major steel members are machined by professional factories, so that the machining accuracy is guaranteed, the consumption of material and working hours are reduced and the difficulty of on–site installation is decreased. Besides, the high mechanized construction level can prevent conflicts between different working procedures on site and reduce the site welding workload.

0) CN205558038U – COMPOUND CARRIER BAR THAT EXCELS IN OF RECTANGL...

40) Family number: 63503198 (CN205558038U) © PatBase

Title: COMPOUND CARRIER BAR THAT EXCELS IN OF RECTANGLE TOP FLANGE STEEL REINFORCED CONCRETE

Priority: CN201620293688U 20160408

Family:

Publication number	Publication date	Application number	Application date
CN205558038 U	20160907	CN201620293688U	20160408

Probable Assignee: JIANGSU JIANZHU INST

Assignee(s):(std)**:** JIANGSU JIANZHU INST

Inventor(s):(std)**:** BAO YINGJI ; HUANG YONG ; LIU HUI ; SONG SHENGZHI ; TAO XIANGLING

International class (IPC 8–9): E04C3/293 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205558038U The utility model provides a compound carrier bar that excels in of rectangle top flange steel reinforced concrete, including top flange, lower flange and compound web, the top flange includes the rectangle steel pipe, concrete –filled in the rectangle steel pipe, compound web includes the steel sheet that a plurality of pieces connected gradually, connects through circular steel tube between the adjacent steel sheet, concrete –filled in the welded connection between circular steel tube and the steel sheet, circular steel tube, compound web upper portion and top flange welded connection, compound web lower part and lower flange welded connection. This carrier bar adopts rectangle steel pipe concrete as the carrier bar top flange, effectively improves load –carrying properties, resistance to compression and the anti –bending strength of carrier bar, simultaneously, adopt the compound web of circular steel tube concrete and plain plate, can improve the overall stability ability of carrier bar on the one hand, and on the other hand can strengthen its self bending resistance, antitorque, anti deformability.

0) US4211045A – BUILDING STRUCTURE

41) Family number: 30389495 (US4211045A) © PatBase

Title: Building structure

Priority: JP19770005198 19770120 JP19770030112 19770317 JP19770066452U 19770524 US19770858198 19771207 JP19770066453U 19770524 JP19770066454U 19770524

Family:

Publication number	Publication date	Application number	Application date
JP1116813 C3	19821015	JP19770030112	19770317
JP53090612 A2	19780809	JP19770005198	19770120
JP53114214 A2	19781005	JP19770030112	19770317
JP53160206 U1	19781215	JP19770066452U	19770524
JP53160207 U1	19781215	JP19770066453U	19770524
JP53160208 U1	19781215	JP19770066454U	19770524
JP56003441 Y2	19810126	JP19770066452U	19770524
JP56019604 Y2	19810511	JP19770066453U	19770524
JP57008937 B4	19820218	JP19770030112	19770317
US4211045 A	19800708	US19770858198	19771207
US4333285 A	19820608	US19790064732	19790808

Probable Assignee: KAJIMA CORP

Assignee(s):(std)**:** KAJIMA CORP ; KAJIMA KENSETSU KK

Assignee(s): KAJIMA KENSETSU K K ; KAJIMA KENSETSU KABUSHIKI KAISHA

Inventor(s):(std)**:** HATANO HAJIME ; KATO TOMOYASU ; KATOU TOMOYASU ; KOBAYASHI MIKIO ; KOIZUMI HAJIME ; MIYAGAWA KEIZOU ; MIYAKAWA KEIZO ; MIZUKOSHI KAORU ; SAEKI TOSHIO ; TAMANAGA SHINICHI ; TOOYAMA KOUZOU ; TOYAMA KOZO

International class (IPC 8–9): E04B1/16 E04B1/21 E04B1/30 E04B1/58 E04B5/43 E04C3/293 (Advanced/Invention)

International class (IPC 1–7): E04B1/16 E04B1/30 E04B1/58 E04B5/10 E04B5/19 E04B5/36

CPC: E04B1/21 E04B5/43 E04C3/065 E04C3/293

European class: E04B1/21 E04B5/43 E04C3/06H E04C3/293

US class: 52/236.3 52/251 52/252 52/260 52/319 52/432 52/602 52/649.2 52/653.1

Classification Explorer

Cited documents: US980480 A, US947769 A, US938458 A, US863555 A, US3349539 A, US2731824 A, US1794079 A, US1757077 A, US1501288 A, US1430424 A, US1135721 A, US1031046 A, US1031044 A, JP52015117 A2, JP46005185 A2, GB135688 A, FR788513 A, FR1475696 A, FR1257858 A, AT188088 B,

Forward Citations: WO9906642, WO9722770, WO9401636, WO9102859, WO8707318, WO8200677, WO09152476, WO03046299, WO0246548, US9562355, US9540815, US9260866, US9085898, US8910450, US8752347, US8572788, US8516776, US8505599, US8484928, US8205412, US8166717, US7647742, US7143554, US7083515, US6920728, US6807790, US6676183, US6543195, US6385930, US6266938, US6009677, US5867964, US5737895, US5697196, US5586418, US5371990, US5259160, US5245806, US5218802, US5181359, US5090172, US5050358, US4372088, US4363200, US2014298749, US2014245695, US2013305652, US2013008114, US2012124937, US2011271636, US2011094182, US2011083386, US2010287878, US2009307994, US2009300861, US2009188194, US2009188191, US2009084061, US2008302057, US2005115164, US2004055246, US2003164623, US2003084629, US2003029111, US2002174608, US2002129568, RU2548627, KR101521946, JP64080637, JP6143068, JP61045042, JP6065501, JP4286239, JP3244724, JP3151429, JP2297835, JP2014181545, JP2006336293, JP1287366, JP1274240, JP1080637, FR3013064, FR2927916, FR2925088, FR2704253, FR2599070, EP0328986, EP0292449, CN105297983, CN102733603, CN102733603, CN102071747, CN101851983, AU668975,

Abstract:
Source: US4211045A A building structure including a beam of steel or rod reinforced concrete which is sheathed in a U−shaped cross section steel shell, a concrete column which is encased in a steel tube, diagonal bracings and connecting members thereof. The topside of the U−shaped steel shell is open to allow concrete to be filled therethrough. Steel rods are placed in the shell and a steel panel connecting member secures the opposed sidewalls of the shell. Steel bars extend from a floor slab into the beam shell through the aforesaid open topside, thereby rendering the beam integral with the slab. Frame−like steel members for confining reinforcing bars and/or shear connectors are disposed in the inside of the beam shell. A steel sleeve is also provided in the beam shell for defining a space for disposition of equipment. In addition, an opening is provided in the bottom wall of the beam shell so as to allow steel rods to extend from the wall into the beam shell, thereby rendering the beam integral with the wall. A column is coupled to the beam by means of ring stiffeners or gusset plates. Diagonal bracings are positioned in symmetric relation to the frame member of the beam or column, and the diagonal bracings are fastened to the frame member of the beam or column by means of long bolts extending through the frame member thereof. The tip portions of diagonal bracings are provided with anchor members which are embedded in the concrete contained in the beam shell.

0) JP2002129653A – REINFORCED CONCRETE COLUMN AND JOINT PART STRUC...

42) Family number: 23380163 (JP2002129653A) © PatBase

Title: REINFORCED CONCRETE COLUMN AND JOINT PART STRUCTURE OF THE COLUMN AND STEEL BEAM

Priority: JP20000320353 20001020

Family:

Publication number	Publication date	Application number	Application date
JP2002129653 A2	20020509	JP20000320353	20001020
JP3602429 B2	20041215	JP20000320353	20001020

Probable Assignee: TAISEI CORP

Assignee(s):(std)**:** TAISEI CORP

Inventor(s):(std)**:** ASAYAMA OSAO ; KAWABATA KAZUMI ; KOMURO TSUTOMU ; SHINNO TATSU

International class (IPC 8–9): E04B1/30 (Advanced/Invention); E04B1/30 (Core/Invention)

International class (IPC 1–7): E04B1/30

Classification Explorer

Forward Citations: CN105133793, CN103046692, CN103046692, CN102979179,

Abstract:
Source: JP2002129653A PROBLEM TO BE SOLVED: To realize higher rigidity and bearing force than a column of reinforced concrete construction, to facilitate work execution and to reduce a steel frame quantity compared with a concrete filled steel pipe column to improve economy in a reinforced concrete column formed by surrounding the outer periphery of the column of reinforced concrete construction with steel plates, and the joint part structure of the column and a steel beam.SOLUTION: The outer periphery is surrounded in square cylindrical shape by steel plates 2, and a plurality of (for instance, twelve) main reinforcements 3 are disposed inside along the circumference. A hoop reinforcement 5 is spirally disposed at the main reinforcements 3. One or more (for instance, one) main reinforcement 4 is disposed at each of four corner parts, and concrete 6 is placed to constitute the reinforced concrete column 1. A horizontal stiffener extending outward from the steel plate 2 is integrally provided at the steel plate 2, at a connecting position to the steel beam and in a position facing the upper and lower part flange of the steel beam, and the horizontal stiffener and the upper and lower part flanges of the steel beam are jointed to each other.

0) KR101577019B – DIAPHRAM AND REINFORCEMENT STRUCTURE OF THE CON...

43) Family number: 61103271 (KR101577019B) © PatBase

Title: DIAPHRAM AND REINFORCEMENT STRUCTURE OF THE CONCRETE FILLED STEEL TUBLAR COMUMN, AND THE MANUFACTURING METHOD OF IT

Priority: KR20140084778 20140707

Family:

Publication number	Publication date	Application number	Application date
KR101577019 B1	20151211	KR20140084778	20140707

Probable Assignee: CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s):(std)**:** CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s): PARTNERS ARCHITECTS LTD CM ; CM PARTNERS ARCHITECTURE FIRM CO

Inventor(s):(std)**:** CHUN KEUM SOK ; LIU WON SOCK

International class (IPC 8–9): E04B1/30 E04C3/30 E04C5/01 (Advanced/Invention)

CPC: E04C3/36 E04B1/2403 E04B1/30 E04B1/585 E04C5/01

Classification Explorer

Cited documents: KR101261208 B1, KR101254983 B1, JP9291599, JP5214736,

Abstract:
Source: KR101577019B The present invention relates to a diaphragm installation structure disposed on a concrete filled steel tube (CFT) column for moment connection to a horizontal member such as a steel beam or the like; and a CFT column reinforcement structure to efficiently handle a bending moment stress caused by a horizontal weight. The diaphragm and horizontal stress reinforcement structure of a CFT column comprises: an outer steel pipe forming an outer skin of the CFT column, and restraining concrete filled therein; an inner steel pipe installed in an outer steel pipe separated from an inner surface of the outer steel pipe to reinforce hardness of the CFT column; and an upper and a lower diaphragm whose inside is attached to the inner steel pipe whose outside is exposed to the outside of the outer steel pipe to be attached to an upper and a lower flange of a steel beam. The inner steel pipe has an upper and a lower length extended from the upper and the lower diaphragm to a reinforcement range of a bending moment of the CFT column caused by a horizontal weight.

0) CN104314185A – CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND...

44) Family number: 58385497 (CN104314185A) © PatBase

Title: CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND STEEL BEAM JOINT CONNECTING STRUCTURE

Priority: CN201410637964 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314185 A	20150128	CN201410637964	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105040834,

Abstract:
Source: CN104314185A The invention discloses a concrete filled square steel tubular column and steel beam joint connecting structure, and belongs to the technical field of building structure engineering. The joint connecting structure comprises a concrete filled square steel tube, an H–shaped steel beam, two L–shaped plates and a supporting plate positioned below the H–shaped steel beam, the two L–shaped plates are symmetrically positioned on two sides of a web plate of the H–shaped steel beam, one outer L surface of each L–shaped plate is welded on the square steel tube, the other outer L surface of each L–shaped plate is connected with the web plate of the H–shaped steel beam in a bolted manner, one end of the supporting plate is a U–shaped inserting end, the square steel tube is provided with a jack matched with the inserting end, the inserting end is inserted into the jack and welded on the square steel tube, a vertical reinforcing plate is arranged at the bottom of the supporting plate, and the top of the supporting plate is connected with a lower flange plate of the H–shaped steel beam in a bolted manner. The joint connecting structure is higher in stability, and connectors are convenient to manufacture.

0) WO13168049A1 – MODULAR BUILDING SYSTEM SYSTEME DE CONSTRUCTIO...

45) Family number: 55155997 (WO13168049A1) © PatBase

Title: MODULAR BUILDING SYSTEM

Priority: ZA20120003277 20120507

Family:

Publication number	Publication date	Application number	Application date
WO13168049 A1	20131114	WO2013IB53415	20130430

Probable Assignee: BACON BRIAN

Assignee(s):(std)**:** BACON BRIAN

Inventor(s):(std)**:** PAIZEE BASILE

Agent(s): CREASE VANESSA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04C2/26 E04C3/34 (Advanced/Invention)

CPC: E04C3/34 E04C2002/3488

Classification Explorer

Cited documents: US5706620 A, US4239176 A, US2142523 A, GB2180860 A1,

Abstract:
A building structure is disclosed which comprises a hollow column (10) including planks (12.1, 12.2, 12.3) and a building panel (18). The panel comprises vertical and horizontal beams (20.1, 20.2) which form a frame which has cladding sheets (40, 42) secured to it. Components of the column (12.1, 14, 12.3) overlap with components (22.1, 30) of the building panel to permit the column and the panel to be secured together.

0) WO9834869A1 – ELEVATOR, SPECIALLY FOR LINKING DIFFERENT STORI...

46) Family number: 18993653 (WO9834869A1) © PatBase

Title: ELEVATOR, SPECIALLY FOR LINKING DIFFERENT STORIES IN BUILDINGS, AND METHOD FOR ITS PRODUCTION

Priority: DE19971004814 19970208 DE19971004814 19970208 DE19981005189 19980209 DE19971020763 19970517 DE19971020763 19970517 DE19971051831 19971122 WO1998DE00330 19980206 WO1998DE00331 19980206 DE19981005230 19980209 DE19981080100 19980206 DE19981080101 19980206 DE19985004314 19980206 DE19985006531 19980206

Family:

Publication number	Publication date	Application number	Application date
AT218500 E	20020615	AT19980909343T	19980206
AT228965 E	20021215	AT19980909342T	19980206
AU199863916 A1	19980826	AU19980063916	19980206
AU199863917 A1	19980826	AU19980063917	19980206
DE19805189 A1	19980813	DE19981005189	19980209
DE19805230 A1	19980813	DE19981005230	19980209
DE19880100 D2	20000330	DE19981080100	19980206
DE19880101 D2	20000316	DE19981080101	19980206
DE59804314 D1	20020711	DE19985004314	19980206
DE59806531 D1	20030116	DE19985006531	19980206
EP0958225 A1	19991124	EP19980909343	19980206
EP0958225 B1	20020605	EP19980909343	19980206
EP0958230 A1	19991124	EP19980909342	19980206
EP0958230 B1	20021204	EP19980909342	19980206
WO9834869 A1	19980813	WO1998DE00331	19980206
WO9834872 A1	19980813	WO1998DE00330	19980206

Probable Assignee: THIELOW FRANK 88285 BODNEGG DE

Assignee(s):(std)**:** FRANK THIELOW ; HERRMANN JOHANNES ; THIELOW FRANK

Assignee(s): THIELOW FRANK 88285 BODNEGG DE

Inventor(s):(std)**:** FRANK THIELOW ; THIELOW FRANK ; THIELOW FRANK W ; HERRMANN JOHANNES

Inventor(s): THIELOW FRANK 88285 BODNEGG DE

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): B66B7/02 B66F7/02 E04C3/32 E04C3/34 (Advanced/Invention); B66B7/02 B66F7/00 E04C3/30 (Core/Invention)

International class (IPC 1–7): B66B7/02 B66B9/02 B66F11/04 B66F7/02 B66F7/14 E04C3/30 E04H12/02 F16S3/04

CPC: B66F7/025 E04C3/32 E04C3/34

European class: B66F7/02B E04C3/32 E04C3/34

Classification Explorer

Cited documents: US5522671 A, US5066834 A, US4251993 A, US3963056 A, FR2188489 A5, EP0413393 A1, EP0309328 A1, DE4430034 A1, DE3634061 A1, DE3034907 A1, DE2658639 A1, CH630809 A3, CH630809,

Forward Citations: WO08031375, WO07048807, US8042452, DE102008029360, DE102005050990, DE102005050990, DE102005006920, DE10021884,

Abstract:
Disclosed is an elevator, specially for linking different stories in a building, which can be produced economically and with little effort. According to the invention, this is done in that at least a bearing column (1) comprises a shaped body (3) which at least partially consists of a flowable, hardenable material.

0) TW295126Y – JOINT APPARATUS FOR BEAM/COLUMN

47) Family number: 34338807 (TW295126Y) © PatBase

Title:	JOINT APPARATUS FOR BEAM/COLUMN
Priority:	TW19960204600U 19960328

Family:

Publication number	Publication date	Application number	Application date
TW295126 Y	19970101	TW19960204600U	19960328

Probable Assignee:	TSAI KE CHIUANTW
Assignee(s):(std):	TSAI KE CHIUAN ; YU RUEI TZUO
Assignee(s):	TSAI KE CHIUANTW
Inventor(s):(std):	TSAI KE CHIUAN ; YU RUEI TZUO
International class (IPC 8–9):	E04B1/24 (Advanced/Invention); E04B1/24 (Core/Non–invention)
International class (IPC 1–7):	E04B1/24

Classification Explorer

Abstract:
Source: TW295126Y The creation of devices and construction beams engaging a manner suitable for the bonding of steel beams in general construction and the use of a hybrid structure of reinforced concrete columns and steel beams engagement of use. The apparatus generally comprises a two–piece outer explicit transverse bulkheads, box beams rendezvous unit consists of four steel plates and consisting of a number of bonding shear plate components. This means that after the first rendezvous section steel beams and shear and transverse bulkhead adapter plate by welding combination is complete, then the beams, columns and member engagement. Column member can contact the steel columns, concrete filled steel tube column of the situation within–reinforced concrete columns or. If the engagement with the steel columns, places connected by welding steel column and transverse bulkheads. If the steel ribs of concrete columns, you can configure the appropriate cross the bulkhead reinforcement column of openings to make it through; In this case, box–section steel beams composed of the intersection can be provided in the beams and columns of reinforced concrete columns The other construction templates and functions required stirrups intersection portion. Joining it with steel beams, the use of shear bolts or mating adapter plate web girder of welded joints, and the like can be taken bolts, welding or mixed bolts and welding steel beams are three ways to engage the outer flange and the crossbeam engaging Nobuyuki board. Wherein the transverse bulkhead with steel beams at different heights but it engages the flap can pass the beam end moment to the column, shear bonding plate shear beam it can be transmitted to the column.

0) JP2017014713A – EXISTING CONCRETE STRUCTURE REINFORCEMENT STRUC...

48) Family number: 61846119 (JP2017014713A) © PatBase

Title: EXISTING CONCRETE STRUCTURE REINFORCEMENT STRUCTURE

Priority: JP20150129583 20150629

Family:

Publication number	Publication date	Application number	Application date
JP2017014713 A2	20170119	JP20150129583	20150629
JP5869717 B1	20160224	JP20150129583	20150629

Probable Assignee: SHINNIHON CORP

Assignee(s):(std): MAKITANI EIJI ; SHINNIHON CORP

Assignee(s): MAKIDANI EIJI

Inventor(s):(std): MAKITANI EIJI

International class (IPC 8–9): E04G23/02 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014136924 A2, JP2014136924, JP201126786, JP2011026786 A2, JP2008240368 A2, JP2008240368,

Forward Citations: JP6095187,

Abstract:
Source: JP2017014713A PROBLEM TO BE SOLVED: To provide an existing concrete structure reinforcement structure and an existing concrete structure reinforcement method, easy in assembly and installation with a simple structure, and capable of improving earthquake–resistant performance in an earthquake.SOLUTION: An existing concrete structure reinforcement structure is composed of a horizontal reinforcement frame of horizontally extending to an existing concrete column or an existing concrete beam 3 and connecting a cross–sectional L–shaped member 5 in a rectangular shape, a vertical reinforcement frame for connecting–fixing upper–lower end parts of a web part to a horizontal part of the horizontal reinforcement frame and composed of a cross–sectional T–shaped member arranged so as to vertically extend the web part and a flange part, a fiber sheet 14 wound on/fixed to the outer periphery of the horizontal reinforcement frame and the vertical reinforcement frame and concrete filled–solidified in a cavity of the horizontal reinforcement frame and the vertical reinforcement frame wound with the existing concrete column or the existing concrete beam 3 and the fiber sheet 14 and integrated with an existing concrete structure.SELECTED DRAWING: Figure 1

0) KR20150137181A – REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE ...

49) Family number: 61034203 (KR20150137181A) © PatBase

Title: REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE

Priority: KR20140064354 20140528

Family:

Publication number	Publication date	Application number	Application date
KR101636473 B1	20160706	KR20140064354	20140528
KR20150137181 A	20151209	KR20140064354	20140528

Probable Assignee: SAMSUNG EVERLAND INC

Assignee(s):(std)**:** SAMSUNG C AND T CORP ; SAMSUNG EVERLAND INC

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** SHINTANI KOHEI ; SHIN DONG SUNG ; PARK HAN NA ; LEE SEUNG JE ; LEE GYOU BOK ; KIM YONG KU ; KIM KYUNG WON ; KIM BYEONG JUN ; JUNG JAE EUN ; CHONG CHAE KWANG

International class (IPC 8–9): E04B1/30 E04C3/34 E04C5/16 (Advanced/Invention)

CPC: E04C3/36 E04B1/185 E04B1/30 E04C5/06 E04C5/18

Classification Explorer

Cited documents: KR20130105176 A, KR20130105176, KR20130102027 A, KR20130102027, KR20050054407 A, KR20050054407, JP2006118162 A2, JP2006118162,

Forward Citations: KR101720122,

Abstract:
Source: KR20150137181A The present invention provides an improved concrete–filled column comprising: an angular plate column (100) having an internal space (110) filled with concrete; a central member (200) installed in the internal space (110) in the longitudinal direction of the plate column (100); and a corner reinforcing member (300) having a corner of the plate column (100) to resist the lateral pressure caused by concrete with which the internal space (110) is filled. The central member (200) includes multiple L–shaped steels (210) formed in the edge of the internal space (110) and a connecting member (220) whose both ends are combined with a flange of the L–shaped steel (210). The present invention has an effect of ensuring the structural stability of a large–caliber concrete–filled column.

0) CN105951991A – PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM ...

50) Family number: 63590326 (CN105951991A) © PatBase

Title:	PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM
Priority:	CN201610397779 20160607

Family:

Publication number	Publication date	Application number	Application date
CN105951991 A	20160921	CN201610397779	20160607

Probable Assignee:	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):(std):	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):	SHANDONG ZHONGTONG STEEL STRUCTURE ENGINEERING CO ; SHANDONG STEEL CONSTRUCTION CO LTD
Inventor(s):(std):	HU SHUQING ; MA GUORUN ; WANG PEIJUN ; YUAN JIANCHENG ; ZHANG LULU
International class (IPC 8–9):	E04B1/14 E04B1/30 E04B1/343 E04B2/56 E04C3/08 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105951991A A prefabricated steel structure framework system comprises stand columns, a steel beam and a shear wall slab. Each stand column comprises a pipe column formed by welding peripheral steel plates, a concrete–filled layer and reinforcing ribs, wherein the pipe column is filled with concrete to form the concrete–filled layer, and the reinforcing ribs are arranged on the inner walls of the peripheral steel plates. The tops of the stand columns are connected with the two ends of the steel beam through friction type high–strength bolts, the cross section of the steel beam is in an H shape, the steel beam comprises an upper flange plate, a lower flange plate and a web for connecting the upper flange plate and the lower flange plate, the web is provided with holes, and a pipeline is arranged through the holes in the web. The shear wall slab is hinged to the outer sides of the peripheral steel plates of the pipe columns and provided with inclined long–strip holes. Hinging is adopted for framework beam–column joints, vertically–distributed force and horizontally–distributed force in the framework shear wall structure system are separated, stress is definite, the energy dissipation performance of the joints is improved, the deformation of the joints is improved, and too early fracture damage of the joints is avoided.

- **search:** SS5 FT=steel and plate and construction (Results 66402)
- **search:** SS6 FT=steel and plate and construction and fill* and concrete (Results 3523)
- **search:** SS7 FT=steel and plate and construction and fill* and concrete and column (Results 639)
- **search:** SS8 FT=steel plate and construction (Results 16822)
- **search:** SS9 FT=steel plate construction (Results 298)
- List: SS9 1–50 (FT=steel plate construction) (Results 298)

0) US5575092A – DRAGLINE BUCKET

1) Family number: 8607826 (US5575092A) © PatBase

Title: Dragline bucket

Priority: CA19952152252 19950620 ZA19940004425 19940621

Family:

Publication number	Publication date	Application number	Application date
AU199521751 A1	19960201	AU19950021751	19950619
AU698077 B2	19981022	AU19950021751	19950619
CA2152252 AA	19951222	CA19952152252	19950620
CA2152252 C	20010828	CA19952152252	19950620
US5575092 A	19961119	US19950492569	19950620
ZA9505038 A	19960208	ZA19950005038	19950619

Probable Assignee: CATERPILLAR COMMERCIAL SARL

Assignee(s):(std): REENEN STEEL PROPRIETARY LIMIT ; RYTON LIMITED ; RYTON LTD ; WRIGHT EQUIPMENT CO PROPR ; WRIGHT EQUIPMENT COMPANY PROPR

Assignee(s): VAN REENEN STEEL PROPRIETARY LIMITED ; VAN REENEN STEEL (PROPRIETARY) LTD ; WRIGHT EQUIPMENT CO (PROPRIETARY) LTD ; SMIT ANDRIES JACOBUS ; WRIGHT EQUIPMENT COMPANY PROPRIETARY LIMITED ; CATERPILLAR COMMERCIAL SARL ; VAN REENEN STEEL LTD ; WRIGHT EQUIPMENT CO LTD ; VAN REENEN STEEL PROPRIETARY LTD ; WRIGHT EQUIPMENT CO PROPRIETARY LTD

Inventor(s):(std): SMIT ANDRIES J ; SMIT ANDRIES JACOBUS

Inventor(s): ANDRIES JACOBUS SMIT

Agent(s): PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; SMART AND BIGGAR

International class (IPC 8–9): E02F3/40 E02F3/60 E02F9/28 (Advanced/Invention); E02F9/28 (Advanced/Non–invention); E02F3/46 (Core/Invention); E02F9/28 (Core/Non–invention)

International class (IPC 1–7): E02F3/14 E02F3/40 E02F3/46

CPC: E02F3/60 E02F9/2883

European class: E02F3/60 E02F9/28F

US class: 37/397 37/398 37/399 373/980 D15/032 D15/32

Classification Explorer

Cited documents: US5343641 A, US4902473 A, US3597865 A, US3181257 A, US2895239 A, US2689418 A, US2492905 A, US1979738 A, US1852671 A,

Forward Citations: WO08034171, USD676465, USD676067, USD676066, USD676065, USD501662, USD491198, US8572870, US8250785, US7774959, US7152349, US6990760, US6834449, US6826466, US6071068, US5944471, US5832638, US2014305011, US2011088290, US2010269378, US2010005689, US2009235560, US2009183397, US2007006492, US2003191570, AU783577, AU755123, AU738969,

Abstract:
Source: US5575092A The dragline bucket has a basket (12) with an open from end and an open top defined by bottom, side and rear walls (14, 16, 18). Cheek plate structures (44) of fabricated steel plate construction are carried by the side walls at the front end of the basket and themselves carry drag attachment points (46). There is a lip plate assembly (52) of fabricated steel plate construction at the front of the bottom wall (14) and carrying attachment points for excavating teeth. An arch (38) of hollow, fabricated steel plate construction which spans over the front end of the basket and carries dump rope attachment points. The cheek plate structures, the lip plate assembly and the arch are connected to one another to form a ring of continuous, fabricated steel plate construction at the front end of the basket.

0) US2006021523A – PRESS, PARTICULARLY A MULTILEVEL PRESS

2) Family number: 32575641 (US2006021523A) © PatBase

Title: PRESS, PARTICULARLY A MULTILEVEL PRESS

Priority: CA20052511317 20050704 CA20052511317 20050704 DE200410032259 20040703

Family:

Publication number	Publication date	Application number	Application date
CA2511317 AA	20060103	CA20052511317	20050704
CA2511317 C	20091013	CA20052511317	20050704
DE102004032259 A1	20060126	DE200410032259	20040703
DE102004032259 B4	20060511	DE200410032259	20040703
US2006021523 AA	20060202	US20050170785	20050629
US7343853 BB	20080318	US20050170785	20050629

Probable Assignee: SIEMPELKAMP MASCH U ANLAGENBAU GMBH AND CO KG

Assignee(s):(std)**:** SIEMPELKAMP MASCH U ANLA ; SIEMPELKAMP MASCH AND ANLAGENBAU

Assignee(s): SIEMPELKAMP MASCH U ANLAGENBAU GMBH AND CO KG ; SIEMPELKAMP MASCHINEN UND ANLAGENBAU GMBH AND CO K ; SIEMPELKAMP MASCHINEN UND ANLAGENBAU GMBH AND CO KG ; WOLLNY KLAUS ; SCHMITZ CHRISTOPH ; SCHUERMANN KLAUS ; SIEMPELKAMP MASCH

Inventor(s):(std)**:** SCHMITZ CHRISTOPH ; SCHUERMANN KLAUS ; SCHURMANN KLAUS ; WOLLNY KLAUS

Agent(s): BORDEN LADNER GERVAIS LLP; THE FIRM OF KARL F ROSS; FIRM OF KARL F ROSS; WILFORD ANDREW; ANDREW

International class (IPC 8–9)**:** B27D3/02 B27N3/20 B27N3/26 B30B15/04 B30B15/26 B30B7/02 (Advanced/Invention); B27N3/20 (Advanced/Non–invention); B27D3/00 B27N3/08 B30B15/04 B30B15/26 B30B7/00 (Core/Invention)

CPC: B27N3/20 B30B7/02 B30B15/04

European class: B27N3/20 B30B15/04 B30B7/02

US class: 100/194 100/199 100/269.17 100/324 100/43

Classification Explorer

Cited documents: US6851358 BB, US6101861 A, US5634398 A, US5611271 A, US4963221 A, US4222724 A, US3742537 A, US3479856 A, DE7229308 U, DE4408101 C2, DE19500983 C1, DE10241119 A1,

Forward Citations: WO12163766, WO10000837, TWI480151, EP2527136, EP2141006, DE102010053680,

Abstract:
Source: US2006021523A A press, especially a multilevel press, has a press stand of one or more press frames whose head and foot pieces are of cast iron and whose vertical uprights or tension shanks are of steel plate construction and formed with T or hammerheads bearing on the head piece or foot piece.

0) DE4330289A1 – LINING–PANEL FASTENING, AND USE AND PROCESS FOR...

3) Family number: 11430045 (DE4330289A1) © PatBase

Title: Lining–panel fastening, and use and process for fastening lining panels

Priority: DE19934330289 19930907

Family:

Publication number	Publication date	Application number	Application date
DE4330289 A1	19950309	DE19934330289	19930907

Probable Assignee: KALENBORN KALPROTECT DR MAURIT

Assignee(s):(std)**:** KALENBORN KALPROTECT DR MAURIT

Assignee(s): KALENBORN KALPROTECT DR MAURITZ GMBH AND CO KG 535 ; KALENBORN KALPROTECT DR MAURITZ GMBH AND CO KG 53560 VETTELSCHOS DE

Inventor(s):(std)**:** HECKEN WALTER

Inventor(s): HECKEN WALTER 53578 WINDHAGEN DE

International class (IPC 8–9): F16B37/06 (Advanced/Invention); F16B37/04 (Core/Invention)

International class (IPC 1–7): F16B5/02 F16B5/06 F16S1/02

CPC: F16B37/06 F16B37/065

European class: F16B37/06 F16B37/06B2

Classification Explorer

Forward Citations: DE102011018665,

Abstract:
Source: DE4330289A1 The invention relates to a lining–panel fastening for fastening panels exposed to a high degree of wear on substructures or basic structures, in particular consisting of sheet steel, and is distinguished by retaining brackets (4) which are welded onto the sheet–steel structure and against which the lining panels (1) are fastened.

0) US2010175316A – METHOD AND APPARATUS FOR A SPRAY SYSTEM

4) Family number: 45960535 (US2010175316A) © PatBase

Title: METHOD AND APPARATUS FOR A SPRAY SYSTEM

Priority: US20090321125 20090115 US20130138687 20131223 US20160012986 20160202 US20160013009 20160202

Family:

Publication number	Publication date	Application number	Application date
US2010175316 AA	20100715	US20090321125	20090115
US2014130405 AA	20140515	US20130138687	20131223
US2016165874 AA	20160616	US20160012986	20160202
US2016165875 AA	20160616	US20160013009	20160202
US9277741 BB	20160308	US20090321125	20090115
US9578869 BB	20170228	US20130138687	20131223

Probable Assignee: KUBACAK JOHNNY LEE

Assignee(s):(std)**:** KUBACAK JOHNNY LEE

Inventor(s):(std)**:** KUBACAK JOHNNY LEE

Agent(s): LAW OFFICES OF CHRISTOPHER L MAKAY; CHRISTOPHER L

International class (IPC 8–9)**:** A01G25/09 A01M21/04 A01M7/00 B05B1/00 B05B15/06 B05B15/08 B05B17/00 B05B17/06 B05B5/00 (Advanced/Invention); B05B1/14 B05B15/06 E01H11/00 (Advanced/Non–invention); B05B1/00 B05B15/00 B05B5/00 (Core/Invention)

CPC: A01M7/0082 A01M21/043 B05B15/08 A01M7/006 B05B1/14 B05B17/0607 B05B15/061 A01M7/005 B05B17/0646 E01H11/00

European class: A01M21/04B A01M7/00D2 B05B17/06B L05B1/14 L05B15/06A L05B15/08

US class: 1/1 239/1 239/102.1 239/164 239/172 239/288.3 239/391 239/589 239/690.1 248/75 47/1.5 47/15

Classification Explorer

Cited documents: US7168633 BB, US5284297 A, US5215255 A, US5167369 A, US5007585 A, US4315602 A, US4252274 A, US3994310 A, US3917167 A, US3831848 A, US3826431 A, US378672 A, US3579970 A, US3565341 A, US3369754 A, US3285516 A, US3117725 A, US3072615 A, US2995307 A, US2974875 A, US2899138 A, US2738941 A, US2722453 A, US2655405 A, US2654524 A, US2596390 A, US2590400 A, US2548209 A, US2518952 A, US2432309 A, US2003159651 AA, US1102354 A, GB895023 A, GB567218 A, DE535493 A, CA508283 A,

Forward Citations: US2015208574, EP2910113, CN104584987, CN104472317,

Abstract:
Source: US2010175316A An improvement to a roadside sprayer fixates spray nozzles on a registration plate. The registration plate may include integral tabs depending on the application. Inclination of the tabs is adjustable to place streams and droplets in a desired swath coverage. With the nozzles rigidly mounted onto the plate, the entire plate is nutated. The use of the registration plate in a spray unit creates a uniform nutation among the nozzles, thereby reducing variability in droplet placement, and providing a more predictable spray from the nozzles. In other embodiments, the spray unit is utilized in a spray system adaptable to service vehicles, and may be utilized in conjunction with a vegetation engagement device, such as a cutter to engage multiple zones of a roadway right–of–way. Additionally, an improved spray unit includes an electromagnetic field and an attractor to generate plate motion.

0) DE9313516U1 – AUSKLEIDUNGSPLATTENBEFESTIGUNG LINER PLATE FIXI...

5) Family number: 17707866 (DE9313516U1) © PatBase

Title: Auskleidungsplattenbefestigung Liner plate fixing (Machine translation)

Priority: DE19930013516U 19930907

Family:

Publication number	Publication date	Application number	Application date
DE9313516 U1	19950112	DE19930013516U	19930907

Probable Assignee: KALENBORN KALPROTECT DR MAURIT

Assignee(s):(std)**:** KALENBORN KALPROTECT DR MAURIT

Assignee(s): KALENBORN KALPROTECT DR MAURITZ GMBH AND CO KG 535 ; KALENBORN KALPROTECT DR MAURITZ GMBH AND CO KG 53560 VETTELSCHOS DE

International class (IPC 8–9): F27D1/14 (Advanced/Invention); F27D1/14 (Core/Invention)

International class (IPC 1–7): F16B5/02 F16B5/06 F16S1/02

CPC: F27D1/145

European class: F27D1/14C

Classification Explorer

Forward Citations: EP1061305,

Abstract:
Source: DE9313516U1 (Claim 1) 1. Auskleidungsplattenbefestigung fuer hohem Verschleiss ausgesetzte Platten an Unter–oder Grundkonstruktionen, insbesondere aus Stahlblech, gekennzeichnet durch an die Stahlblechkonstruktion angeschweisste Haltebuegel (4), gegen die die Auskleidungsplatten (1) befestigbar sind.

Machine translation: (Claim 1) 1 Liner plate attachment for high wear plates exposed to sub–base or structures, in particular steel sheet, characterized by welded to the steel plate construction Haltebuegel (4), against which the lining plates (1) are attached.

0) US2007172641A – SANDWICH PLATE–LIKE CONSTRUCTION

6) Family number: 31148618 (US2007172641A) © PatBase

Title: SANDWICH PLATE–LIKE CONSTRUCTION

Priority: DK20030000584 20030414 EP20040720849 20040316 WO2004DK00170 20040316

Family:

Publication number	Publication date	Application number	Application date
CA2522185 AA	20051013	CA20042522185	20040316
CA2522185 C	20120814	CA20042522185	20040316
DE602004048101 D1	20151126	DE200460048101T	20040316
DK1623080 T3	20160125	DK20040720849T	20040316
EP1623080 A1	20060208	EP20040720849	20040316
EP1623080 B1	20151021	EP20040720849	20040316
US2007172641 AA	20070726	US20040553444	20040316
US7776432 BB	20100817	US20040553444	20040316
WO04090252 A1	20041021	WO2004DK00170	20040316
ZA200509140 A	20070328	ZA20050009140	20040316

Probable Assignee: SERWIN HOLDINGS APS

Assignee(s):(std)**:** BUITELAAR PETER ; SERWIN BO ; SERWIN HOLDING APS

Assignee(s): SERWIN HOLDINGS APS

Inventor(s):(std)**:** BO SERWIN ; BUITELAAR PETER ; PETER BUITELAAR ; SERWIN BO

Agent(s): MARKS AND CLERK; TELLEFSEN JENS J; ROBERTS MLOTKOWSKI AND HOBBES; DAVID S; ROBERTS MLOTKOWSKI SAFRAN AND COLE PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B32B13/02 B32B15/04 B32B18/00 B32B27/32 B32B27/38 B32B5/16 B32B7/08 E01D19/12 E04B5/40 E04C2/26 (Advanced/Invention); B32B13/00 B32B15/04 B32B18/00 B32B27/32 B32B27/38 B32B5/16 B32B7/08 E01D19/12 E04B5/32 E04C2/26 (Core/Invention); E04B E04C (Subclass/Invention)

International class (IPC 1–7): E04B5/40 E04C2/26

CPC: Y10T428/12007 Y10T428/25 Y10T428/251 Y10T428/252 Y10T428/259 Y10T428/26 E04C2/26 E01D19/125 E01D2101/268 E04B5/40 Y10T428/24994 Y10T428/31511 Y10T428/31529 Y10T428/31678 Y10T428/31815 Y10T428/249923 Y10T428/249932

European class: E01D19/12B E04B5/40 E04C2/26 P01D101/26H

US class: 156/242 156/242S 156/276 156/276S 428/220 428/223 428/294.7 428/297.4 428/323 428/323P 428/324 428/325 428/331 428/332 428/413 428/413S 428/418 428/457 428/489 428/539.5 428/545 428/688 428/703 428/703S

Classification Explorer

Cited documents: WO9733054 A1, US4979992 A, US4513040 A, US3774359 A, JP6167094 A2, GB1588899 A, FR2817576 A1, DK200300584 A5, DE2405155 A1, DE1800858 A1, CH646930,

Forward Citations: US8079840, US2009278026, US2009232659,

Abstract:
Source: US2007172641A Sandwich plate–like construction and method for making such a construction, wherein the construction comprises a steel plate, a contact layer and an inorganic layer, said inorganic layer at least comprises ultra fine particles and a binder. This type of construction is especially suitable as bridge decks, on oil platforms, ship decks, windmill foundations or towers, outdoor furniture, balconies and other tough and exposed

applications.

0) US5230151A – HEAVY DUTY SHEAR HEAD AND MOUNTING SUPPORT

7) Family number: 11235208 (US5230151A) © PatBase

Title: Heavy duty shear head and mounting support

Priority: US19920842239 19920226

Family:

Publication number	Publication date	Application number	Application date
US5230151 A	19930727	US19920842239	19920226

Probable Assignee: N P K CONSTRUCTION EQUIPMENT I

Assignee(s):(std)**:** N P K CONSTRUCTION EQUIPMENT I

Assignee(s): N P K CONSTRUCTION EQUIPMENT INC ; NPK CONSTRUCTION EQUIPMENT INC ; NPK CONSTRUCTION EQUIPMENT INC A CORP OF OHIO

Inventor(s):(std)**:** KUNZMAN KEVIN M ; TRUELSCH ROBERT L

International class (IPC 8–9)**:** B23D17/00 E02F3/96 (Advanced/Invention); B23D17/00 E02F3/04 (Core/Invention)

International class (IPC 1–7)**:** B26B1/00 B26B15/00 B26B3/00 B66C1/00

CPC: B23D17/00 E02F3/965

European class: B23D17/00 E02F3/96F

US class: 30/131 30/134 30/228 301/340 414/740

Classification Explorer

Cited documents: US4908946 A, US4776524 A, US4776093 A, US4771540 A, US4719975 A, US4686767 A, US4670983 A, US4669187 A, US4616417 A, US4558515 A, US4543719 A, US4519135 A, US4450625 A, US4403431 A,

Forward Citations: WO9637337, WO9611057, USD752114, USD748694, USD687470, USD687077, US9333570, US8800902, US8650759, US8327547, US8146256, US8104384, US7578461, US7487930, US7284718, US7240869, US7216575, US7051912, US7025240, US6926217, US6892918, US6840078, US6839969, US6438924, US6119970, US6047475, US5894666, US5873168, US5704560, US5542180, US5531007, US5474242, US5375329, US5291657, US2015053450, US2013320122, US2011225829, US2009090009, US2008263870, US2008072434, US2007145171, US2007001041, US2006006261, US2006006260, US2006005395, US2005262700, US2005145084, US2005091852, US2004094009, US2002162435, GB2378914, GB2378914, EP0737107, AU653907, AU2005269936,

Abstract:
Source: US5230151A A heavy duty shear attachable to the boom of a mobile machine, such as a backhoe, comprises a support structure of welded steel plate construction, and a shear head of steel plate construction mounted on the support structure and having pivotally interconnected upper and lower jaw members. The upper and lower jaw members carry removable shearing blade inserts which are dimensionally identical, and the jaw members are pivotally interconnected by a joint assembly which facilitates disassembly thereof for maintenance purposes.

0) US5529419A – HIGH VISIBILITY COUPLER FOR FRONT END LOADER

8) Family number: 13331753 (US5529419A) © PatBase

Title: HIGH VISIBILITY COUPLER FOR FRONT END LOADER

Priority: CA19952143085 19950221 US19940280338 19940725 US19960593136 19960201

Family:

Publication number	Publication date	Application number	Application date
CA2143085 AA	19960126	CA19952143085	19950221
US5529419 A	19960625	US19940280338	19940725
US5692850 A	19971202	US19960593136	19960201

Probable Assignee: JRB ATTACHMENTS LLC

Assignee(s):(std): JRB CO INC

Assignee(s): JRB ATTACHMENTS LLC ; JRB COMPANY INC ; ANTARES CAPITAL AGENT AS CORP ; ANTARES CAPITAL CORP ; ATTACHMENT TECHNOLOGIES INC ; BANK OF AMERICA NA COLLATERAL AGENT AS ; GEBAUER THOMAS E ; CRENLO CAB PRODUCTS INC ; EMCOR ENCLOSURES INC ; GENESIS ATTACHMENTS LLC ; PALADIN BRANDS GROUP INC ; REGIMENT CAPITAL SPECIAL SITUATIONS FUND V LP COLL ; KPS CAPITAL FINANCE MANAGEMENT LLC ; PNC BANK NATIONAL ASSOCIATION COLLATERAL AGENT AS ; REGIMENT CAPITAL SPECIAL SITUATIONS FUND V LP COLLATERAL AGENT AS ; PENGO CORP

Inventor(s):(std): GEBAUER THOMAS E ; KIMBLE ALLEN E

Agent(s): SIM AND MCBURNEY

International class (IPC 8–9): B66F9/12 E02F3/36 E02F3/80 (Advanced/Invention); B66F9/12 E02F3/36 (Core/Invention)

International class (IPC 1–7): A01B51/00 B66F11/00 E02F3/80 E02F9/00

CPC: Y10T403/18 E02F3/3631 B66F9/12 E02F3/3636 E02F3/3663

European class: B66F9/12 E02F3/36C2J E02F3/36C2K E02F3/36C2V

US class: 172/273 37/468 403/24

Classification Explorer

Cited documents: US5562397 A, US5529419 A, US5338148 A, US5310275 A, US5141385 A, US4850789 A, US4708579 A, US4625988 A, US4068959 A, US3760883 A, JP58013835 A2, JP57137533 A2, EP0278571 A1,

Forward Citations: WO16153360, WO12068267, WO12068267, WO0075437, US9228314, US9217235, US9121162, US9051716, US8974137, US8869437, US8833480, US8800179, US8684623, US8490304, US8240970, US8117773, US7984575, US7882898, US7836616, US7814689, US7686532, US7494314, US7337564, US7225566, US7182546, US7089692, US6991398, US6886279, US6860706, US6609587, US6088938, US5915837, US5802753, US5732488, US5692850, US2016289057, US2012237292, US2011020061, US2010104359, US2009304486, US2008141566, US2008101907, US2007245603, US2007140788, US2005045348, US2005005479, US2004247382, US2004146389, KR101725778, GB2333760, GB2333760, FR2774406, EP1484451, AU2004200972,

Abstract:
Source: US5529419A A high visibility coupler for front end loader implements that is selectively mountable to the extendable arms of a front end loader and is attachable to implements, such as a fork. The structure of the coupler is such that it has a plurality of parallel lift ribs, that are perpendicularly interconnected by cross ribs to form an open lattice type structure, thereby allowing the operator of the front end loader to easily see and manipulate the fork or other attachment, so that the object to be picked up can be easily and safely engaged.

0) US2010104359A – DUAL CYLINDER DUAL PICK–UP COUPLER

9) Family number: 44939257 (US2010104359A) © PatBase

Title: DUAL CYLINDER DUAL PICK–UP COUPLER

Priority: US20080109089P 20081028 US20090603109 20091021 US20120400409 20120220 US20130946322 20130719

Family:

Publication number	Publication date	Application number	Application date
CA2683424 AA	20100428	CA20092683424	20091023
CA2683424 C	20161220	CA20092683424	20091023
US2010104359 AA	20100429	US20090603109	20091021
US2012210613 AA	20120823	US20120400409	20120220
US2013302082 AA	20131114	US20130946322	20130719
US8117773 BB	20120221	US20090603109	20091021
US8490304 BB	20130723	US20120400409	20120220
US8800179 BB	20140812	US20130946322	20130719

Probable Assignee: PALADIN BRANDS GROUP INC

Assignee(s):(std): SEDA ANTHONY ; JRB ATTACHMENTS LLC ; PALADIN BRANDS GROUP INC ; SIKORSKI ROBERT

Assignee(s): PNC BANK NATIONAL ASSOCIATION COLLATERAL AGENT AS ; REGIMENT CAPITAL SPECIAL SITUATIONS FUND V LP COLLATERAL AGENT AS ; PENGO CORP ; PALADIN BRANDS GROUP INC320 – 2211 YORK ROADOAK BROOKIL60523US ; JRB ATTACHMENTS LLC5825 COUNCIL STREET NECEDAR RAPIDSIA52402US ; REGIMENT CAPITAL SPECIAL SITUATIONS FUND V LP COLL ; KPS CAPITAL FINANCE MANAGEMENT LLC ; ATTACHMENT TECHNOLOGIES INC ; ATTACHMENT TECHNOLOGIES INC5825 COUNCIL STREET NECEDAR RAPIDSIA52402US ; BANK OF AMERICA NA COLLATERAL AGENT AS ; CRENLO CAB PRODUCTS INC ; EMCOR ENCLOSURES INC ; GENESIS ATTACHMENTS LLC

Inventor(s):(std): SEDA ANTHONY ; SEDA ANTHONY G ; SIKORSKI ROBERT ; SIKORSKI ROBERT J

Inventor(s): SIKORSKI ROBERTUS ; SEDA ANTHONYUS

Agent(s): SIM AND MCBURNEY; FAY SHARPE LLP

International class (IPC 8–9): B25G3/28 E02F3/36 E02F3/80 E02F3/96 E02F9/00 (Advanced/Invention); B25G3/00 E02F3/04 E02F3/36 E02F3/76 E02F9/00 (Core/Invention)

CPC: E02F3/3631

European class: E02F3/36C2J

US class: 37/403 37/468 37/468P 403/33 403/359.5 403/359.500P 414/723 414/723S

Classification Explorer

Cited documents: US8490304 BB, US8117773 BB, US7836616 BB, US7337564 BB, US7225566 BA, US7182546 BA, US7014385 BB, US6991398 BB, US6899509 BA, US6886279 BB, US6860706 BB, US6386822 BA, US6227792 BA, US6196595 BA, US5865594 A, US5820332 A, US5732488 A, US5692850 A, US5590483 A, US5529419 A, US5415235 A, US5310275 A, US5088882 A, US5049027 A, US5010962 A, US4963071 A, US4812103 A, US4708579 A, US4586867 A, US4243356 A, US4208163 A, US3760883 A, US3705656 A, US3272264 A, US3243066 A, US2008141566 AA,

Forward Citations: WO13053282, WO12129139, USD645063, USD643051, US9121162, US8800179, US8490304, US2016362145, CN103276763,

Abstract:
Source: US2010104359A A coupler for a front–end loader or other loader includes a body comprising a front region, a rear region, an upper region, a lower region, left and right lateral sides, a tilt actuator pin–on location, and left and right arm pin–on locations. Left and right laterally spaced–apart inner rib mounts are provided on the body and are adapted to mate respectively with left and right ribs of a first type of attachment receiver structure. Left and right inner locking regions are defined by the body and are vertically aligned with the left and right inner rib mounts, respectively. Left and right laterally spaced–apart outer rib mounts provided on the body and are adapted to mate respectively with left and right ribs of a second type of attachment receiver structure. Left and

right outer locking regions are defined by the body and are vertically aligned with the left and right outer rib mounts, respectively. A lock system is connected to the body and includes: (i) a first actuator operatively connected to left and right first lock plungers and adapted to move the left and right first lock plungers between locked and unlocked positions; and, (ii) a second actuator operatively connected to left and right second lock plungers and adapted to move the left and right second lock plungers between locked and unlocked positions.

10) Family number: 50516177 (CN202117300U) © PatBase

Title: Reusable movable steel plate construction platform

Priority: CN201120102185U 20110408

Family:

Publication number	Publication date	Application number	Application date
CN202117300 U	20120118	CN201120102185U	20110408

Probable Assignee: XIAOYANG SUN

Assignee(s):(std)**:** XIAOYANG SUN

Assignee(s): SUN XIAOYANG

Inventor(s):(std)**:** SI CHEN ; XIAOBO WANG ; XIAOYANG SUN

Inventor(s): SUN XIAOYANG ; WANG XIAOBO ; CHEN SI

International class (IPC 8–9): E04G3/28 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN202117300U A reusable movable steel plate construction platform is applicable to structural construction of lift wells in building construction. The reusable movable steel plate construction platform is formed through welding support and ring–pull of a platform steel plate, main joist channel steels, subordinate joist steel pipes, and vertical and slant channel steels. The platform has a size slightly lower than a size of the lift wells, is fixed through support of lower floor slabs and friction between the platform and walls of the lift wells, and can be lifted up and down along the lift wells through dragging. The reusable movable steel plate construction platform is simple in structure, is easy to assemble and disassemble, and reusable.

0) US4351623A – UNDERWATER STORAGE OF OIL

11) Family number: 1442668 (US4351623A) © PatBase

Title: UNDERWATER STORAGE OF OIL

Priority: US19800158071 19800610

Family:

Publication number	Publication date	Application number	Application date
AU198171226 A1	19811217	AU19810071226	19810601
AU523898 B2	19820819	AU19810071226	19810601
BE889138 A1	19811209	BE19810205034	19810609
BR8103642 A	19820302	BR19810003642	19810609
DE3122994 A1	19820318	DE19813122994	19810610
DK233881 A	19811211	DK19810002338	19810527
ES503303 A1	19820401	ES19810503303	19810609
ES8203455 A1	19820701	ES19810503303	19810609
FI811782 A	19811211	FI19810001782	19810609
FI811782 L	19811211	FI19810001782	19810609
FR2483895 A1	19811211	FR19810011410	19810610
GB2078283 A1	19820106	GB19810015208	19810518
GB2078283 B2	19840426	GB19810015208	19810518
IT8148628 A0	19810608	IT19810048628	19810608
JP57077486 A2	19820514	JP19810088347	19810610
KR830006082 A	19830917	KR19810002000	19810603
NL8102766 A	19820104	NL19810002766	19810609
NO811948 A	19811211	NO19810001948	19810609
SE8103610 A	19811211	SE19810003610D	19810609
SE8103610 L	19811211	SE19810003610	19810609
US4351623 A	19820928	US19800158071	19800610

Probable Assignee: RAYMOND INT BUILDERS

Assignee(s):(std)**:** RAYMOND INT BUILDERS ; RAYMOND INT BUILDERS INC ; RAYMOND INTERNAT BUILDERS INC

Assignee(s): RAYMOND INTERNATIONAL BUILDERS ; RAYMOND INTERNATIONAL BUILDERS INC ; RAYMOND INTERNATIONAL BUILDERS INC TE HOUSTON TEXAS VER ST V AM ; REIMONDO INTERN BIRUDAAZU INC ; RAYMOND INT BUILDERS INC A CORP OF NJ ; RAYMOND INT BUILDERS INC TE HOUSTON TEXAS VER ST V AM ; RAYMOND INT

Inventor(s):(std)**:** COLLINS H ; COLLINS H TH ; COLLINS H THOMAS ; COLLINS HOMER THOMAS ; HAINZ EDWARD JOHN ; HEINZ EDWARD J ; HEINZ EDWARD JOHN ; EDWARD JOHN HEINZ ; HOOMAA TOOMASU KORINZU ; HEINZ E J ; EDOWAADO JON HEINTSU ; EDOWAADO JIYON HEINTSU ; COLLINS H T

Inventor(s): EJ HEINZ ; HOMER THOMAS COLLINS ; EDWARD JOHN HEINZ ET HOMER THOMAS COLLINS ; H T COLLINS ; JOHN HEINZ EDWARD ; THOMAS COLLINS HOMER ; HT COLLINS ; E J HEINZ

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD

International class (IPC 8–9): B65D88/78 B65G5/00 E02B17/00 E02B17/02 E21B43/36 (Advanced/Invention); B65G5/00 (Advanced/Non–invention); B65D88/00 B65G5/00 E02B17/00 E21B43/34 (Core/Invention)

International class (IPC 1–7): B65D6/00 B65D88/78 B65G3/02 B65G5/00 E02B17/00 E02B17/02 E21B43/01 E21B43/1 E21F

CPC: B65D88/78 E02B17/02 E21B43/36

European class: B65D88/78 E02B17/02 E21B43/36

US class: 114/256 210/522 405/210 405/59

Classification Explorer

Cited documents: US3943724 A, US3893918 A, US3762548 A, US3753494 A, US3752318 A, US3703467 A, US3695047 A, US3686886 A, US3630161 A, US3545215 A, US3408971 A, US3322087 A, US3146458 A, US3145539 A, US2631558 A, US2383840 A, GB1544710 A, GB1482638 A,

Forward Citations: WO8806561, US9435179, US8292546, US6718900, US4662386, US2011013989, US2008047705, GB2226963, GB2226963, GB2209364, GB2209364, FR2776274, AU614953,

Abstract:
Source: US4351623A An offshore oil storage facility on a sea bed which can withstand the effects of waves, tides and oil transfer even though it is of lightweight steel construction. The oil in the tank floats on a layer of water and standpipes extend up from the water layer to a location under the sea surface. Oil containment casings in the form of tubular shells surround the upper ends of the standpipes and extend above the sea surface. Differential pressure sensors arranged to sense differential pressure across the tank walls are used to control the pumping of fluids into and out from the tank to minimize such pressure differentials.

0) IN00386CH2010A – ELECTRIC ARC FURNACE

12) Family number: 49411934 (IN00386CH2010A) © PatBase

Title: ELECTRIC ARC FURNACE

Family:

Publication number	Publication date	Application number	Application date
IN00386CH2010 A	20110819	IN2010CH00386	20100215
IN269275 B	20151016	IN2010CH00386	20100215

Probable Assignee: SMS SIEMAG AG

Assignee(s): SMS SIEMAG AG

Inventor(s): ARORA ATUL ; ERTL MARKUS

International class (IPC 8–9): C21C5/52 (Advanced/Invention)

International class (IPC 1–7): C21C5/52

Classification Explorer

Abstract:
Source: IN00386CH2010A 1. Electric arc furnace 2.1 The invention is directed to an electric arc furnace having a lower furnace vessel, an upper furnace vessel, and a furnace roof (2) which receives the electrodes and by which the upper furnace vessel can be closed, and a frame (3) which is movable horizontally on rails (6) and on which the furnace vessel is arranged. 2.2 According to the invention, the furnace roof (2) with the associated system components and the electrode support arm system (5) are arranged in a stationary manner, the entire furnace vessel comprising the lower furnace vessel and the upper furnace vessel is arranged on the frame (3) and is movable along with the latter out of the position below the furnace roof (2), wherein the railway (6) for the frame (3) is constructed in such a way that during the movement along the railway (6) the furnace executes inclinations which initially bring it into an inclination on the deslagging side and, as the movement continues, through a horizontal position into an inclination on the tapping side, wherein the central axis of inclination or center axis of the frame only moves horizontally during the relative movement relative to the furnace roof.

0) US2004031839A – CLIP APPLICATOR TOOL

13) Family number: 53089570 (US2004031839A) © PatBase

Title: CLIP APPLICATOR TOOL

Priority: US20020223057 20020816 WO2003US25480 20030814

Family:

Publication number	Publication date	Application number	Application date
AU2003258239 AA	20040303	AU20030258239	20030814
AU2003258239 AH	20040303	AU20030258239	20030814
US2004031839 AA	20040219	US20020223057	20020816
WO04016398 A2	20040226	WO2003US25480	20030814
WO04016398 A3	20040902	WO2003US25480	20030814

Probable Assignee: FTS COMPUTERTECHNIK GESMGH

Assignee(s):(std): STANLEY FASTENING SYS LP

Assignee(s): STANLEY FASTENING SYSTEMS L P ; STANLEY FASTENING SYSTEMS LP ; FTS COMPUTERTECHNIK GESMGH

Inventor(s):(std): PRUYNE THOMAS

Inventor(s): THOMAS PRUYNE

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B25B27/14 H01R43/042 (Advanced/Invention); B25B27/14 H01R43/04 (Core/Invention)

International class (IPC 1–7): B25B27/14 B25C1/04 H01R43/042

CPC: E04G21/122 B25B27/146 H01R43/0427

European class: B25B27/14C H01R43/042E

US class: 227/130 227/130P

Classification Explorer

Cited documents: US6317970 BA, US5661899 A, US5181450 A, US4763562 A, US4098171 A, US3653117 A, US3641656 A, US3526944 A, US2969545 A, US2002195761 AA, EP0805278 A1, DE1260396 B,

Forward Citations: WO10141072, US8316763, US7503473, US2010307351, US2007257079, CN102458816,

Abstract:
Source: US2004031839A A power tool for driving fasteners is provided that includes rear housing and forward head portions with a piston in the rear housing and a fastener driver in the head portion. The rear housing preferably includes a cap member and a housing member with movement of a fluid admission valve split between both to keep size of the cap member to a minimum. Further, guide surfaces for the fluid admission valve member can be integrated into the cap and housing members to avoid having a separate valve body therefor. The forward head portion has light weight outer walls and at least one high strength bearing insert for taking the high loads generated by the tool drive assembly including the driver thereof. In one preferred form, the tool employs both the above−described rear cylinder and forward head portions to provide a balanced, light weight hand−held tool that is ergonomical to use.

0) CN204357194U – COLOR STEEL PLATE CONSTRUCTION GUARDRAIL

14) Family number: 59365648 (CN204357194U) © PatBase

Title:	COLOR STEEL PLATE CONSTRUCTION GUARDRAIL
Priority:	CN201420700014U 20141120

Family:

Publication number	Publication date	Application number	Application date
CN204357194 U	20150527	CN201420700014U	20141120

Probable Assignee:	GAO YUANQIN
Assignee(s):(std)**:**	GAO YUANQIN
Assignee(s):	HIGH WON BIN
Inventor(s):(std)**:**	GAO YUANQIN
International class (IPC 8–9):	E04H17/16 E04H17/20 E04H17/22 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204357194U The utility model discloses a color steel plate construction guardrail comprising color steel plates and supports. A groove is arranged in the front end face of each support, and groove walls of each groove are slopes; the ends of the two adjacent color steel plates are all located in the grooves; a left pressing piece and a right pressing piece are arranged in each groove, each pressing piece is composed of a flange and an embedded portion, the lateral surface and the back of each embedded portion are a slope and a plane respectively, and the embedded portions are matched with the ends of the color steel plates in shape and press the ends of the color steel plates into the grooves; a screw is arranged on each support and penetrates the center of the groove, a screw–in block is in screw joint with the end of each screw, the front end of each screw–in block is a conical surface, and the left and right pressing pieces are pressed by the screw–in block; legs are arranged at the bottoms of the supports. The color steel plate construction guardrail has the advantages that the color steel plates on two sides are connected together in order through the supports, the structure is simpler, mounting and dismounting are facilitated, the construction period is short, and the color steel plates are reusable so as to lower construction cost.

0) CN204435153U – ASSEMBLED STEEL PLATE CONSTRUCTION ROAD

15) Family number: 59660404 (CN204435153U) © PatBase

Title: ASSEMBLED STEEL PLATE CONSTRUCTION ROAD

Priority: CN201520021942U 20150114

Family:

Publication number	Publication date	Application number	Application date
CN204435153 U	20150701	CN201520021942U	20150114

Probable Assignee: CHINA CONSTR 8TH ENG DIVISION

Assignee(s):(std)**:** CHINA CONSTR 8TH ENG DIVISION ; 1ST CONSTR CO LTD CHINA CONSTR 8TH ENG BUREAU

Assignee(s): BUILT IN FIRST EIGHT INNINGS CONSTRUCTION CO ; CHINA CONSTRUCTION EIGHTH ENGINEERING BUREAU LTD ; FIRST CONSTRUCTION CO ; CHINA CONSTRUCTION EIGHTH ENGINEERING DIVISION CO

Inventor(s):(std)**:** DENG FULI ; DUAN CHONGBAO ; HAN TINGFU ; HAN TONG ; HAN XU ; HE JUN ; HOU JIE ; LI AIGUO ; LI WEI ; LI ZHONG ; NING WENZHONG ; WANG HONG ; WANG YIFAN ; XIA SHIFENG ; YU KE ; ZHANG HAI ; ZHANG SHUJIAN

International class (IPC 8–9): E01C3/04 E01C9/08 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105525547,

Abstract:
Source: CN204435153U The utility model relates to an assembled steel plate construction road which comprises a lime earth base layer at the bottom, a cement stabilized macadam compacted bearing layer laid on the lime earth base layer, a coarse sand leveling layer laid on the cement stabilized macadam compacted bearing layer and an assembled steel plate arranged on the coarse sand leveling layer. The assembled steel plate construction road has the benefits as follows: the construction road has outstanding heavy−load bearing capacity in pressure−resistant calculation and actual use and can bear a load of 200 tons without deformation; the road adopts the assembled type and can be mounted and dismounted quickly under the condition of reasonable procedure arrangement; the steel plate which is 25 mm thick is used as the raw material of the surface layer and can be reused for more than 10 times, and the steel residual value is high. The requirements for green construction, material saving, energy saving and environmental protection are met, the energy consumption is reduced, waste residue earth is reduced, and an active role in reducing environmental pollution is played.

0) US2534311A – METALLIC PLATE CONSTRUCTION

16) Family number: 22390428 (US2534311A) © PatBase

Title: METALLIC PLATE CONSTRUCTION

Priority: US19450625416 19451029

Family:

Publication number	Publication date	Application number	Application date
US2534311 A	19501219	US19450625416	19451029

Probable Assignee: SMITH ALBERT A

Assignee(s):(std)**:** SMITH ALBERT A

Inventor(s):(std)**:** SMITH ALBERT A

International class (IPC 8–9)**:** B63B3/00 (Advanced/Invention); B63B3/00 (Core/Invention)

International class (IPC 1–7)**:** B23K5/04

CPC: Y10T403/26 Y10T403/477 Y10T403/52 Y10T403/5766 B63B11/00

European class: B63B3/00 L63B701/02

US class: 114/79R 114/86 403/270 403/288 403/310 403/40

Classification Explorer

Cited documents: US2073278 A,

Forward Citations: US4386354, US3168425,

Abstract:
Source: US2534311A (Claim 1) 1. A metallic plate assembly adapted for use in construction of ships, buildings, tanks and the like, comprising adjacent courses of structural plates, seam straps with edge recesses positioned between said courses with each strap recess receiving a course edge and caulked thereto to form a water–tight but slidable joint, and transverse support ribs rigidly secured to said straps and the intervening courses. 5

0) US2008307929A – MANUAL TONG

17) Family number: 32678658 (US2008307929A) © PatBase

Title: MANUAL TONG

Priority: AU20040904554 20040813 AU20050270669 20050815 WO2005AU01224 20050815

Family:

Publication number	Publication date	Application number	Application date
AU2005270669 AA	20060216	AU20050270669	20050815
AU2005270669 BB	20110217	AU20050270669	20050815
CN100562406 C	20091125	CN200580027571	20050815
CN101010171 A	20070801	CN200580027571	20050815
US2008307929 AA	20081218	US20050573648	20050815
US7721628 BB	20100525	US20050573648	20050815
WO06015454 A1	20060216	WO2005AU01224	20050815

Probable Assignee: DRILLROC PNEUMATIC PTY LTD

Assignee(s):(std)**:** DANIEL LORGER ; DRILLROC PNEUMATIC PTY LTD ; LORGER DANIEL PAUL ; LORGER TONY ; TONY LORGER ; SPARROC DRILLCO SERVICES PTY L

Assignee(s): LORGER TONY MR ; SPARROC DRILLCO SERVICES PTY LTD ; LORGER TONY LORGER DANIEL PAUL

Inventor(s):(std)**:** DANIEL PAUL LORGER ; LORGER DANIEL PAUL ; LORGER TONY ; PAUL LORGERIL DANIEL ; PAUL LORGERIL TONY LORGERIL DA ; TONY LORGER ; TONY LORGERIL

Inventor(s): LORGERIL DANIEL PAUL ; LORGERIL TONY ; LORGERIL TONY LORGERIL DANIEL PAUL

Agent(s): LORGER TONY; SHOEMAKER AND MATTARE LTD; SHOEMAKER AND MATTARE

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B25B13/00 B25B13/28 B25B13/48 B25B13/50 B25B13/52 E21B12/00 E21B19/16 E21B23/00 (Advanced/Invention); B25B13/00 E21B12/00 E21B19/00 E21B23/00 (Core/Invention)

International class (IPC 1–7): B25B13/28 B25B13/48 B25B13/50 E21B12/00 E21B19/16 E21B23/00

CPC: B25B13/5016 B25B13/52 E21B19/161

European class: B25B13/50B2 B25B13/52 E21B19/16B

US class: 81/57.33 81/90.3 81/90.7 81/91.2

Classification Explorer

Cited documents: US6978701 BA, US5957010 A, US3695125 A, US257344 A, US2423326 A, US1662413 A, US1626238 A, SU1416660 T, GB207359 A, GB191122563 A, DE29905913 U1, DE29905913,

Forward Citations: WO15138070, USD742707, USD739192, US9434055, US9309729, US9205539, US9068399, US9021923, US2014290445, US2014109376, US2013161025, KR200451588, CN105980110, CN104875155, CN103510888, CN102825568, CN102672650,

Abstract:
Source: US2008307929A A manually or mechanically/hydraulically operable tong of light weight and high load capacity by means of a multi–layer interlocking construction achieved by cutting the shapes from plate steel by known means, assembling the plate sections in suitable order, and retained with each other by cylindrical steel pins (8) forming a multi hinged tool capable of engaging the job circumference on two or more points equally via replaceable jaw dies (15) retained radially and axially.

0) US5063694A – LIGHTWEIGHT EXCAVATOR DIPPER WITH REPLACEABLE T...

18) Family number: 3558717 (US5063694A) © PatBase

Title: LIGHTWEIGHT EXCAVATOR DIPPER WITH REPLACEABLE TOP AND BOTTOM SECTIONS

Priority: CA19912056880 19911203 US19910651163 19910206

Family:

Publication number	Publication date	Application number	Application date
AU199186082 A1	19920813	AU19910086082	19911024
AU636515 B2	19930429	AU19910086082	19911024
CA2056880 AA	19920807	CA19912056880	19911203
CA2056880 C	20010529	CA19912056880	19911203
US5063694 A	19911112	US19910651163	19910206
ZA9108687 A	19920826	ZA19910008687	19911031

Probable Assignee: ARCH COAL INC

Assignee(s):(std): ATLANTIC RICHFIELD CO

Assignee(s): ATLANTIC RICHFIELD CO A CORP OF DE ; ATLANTIC RICHFIELD COMPANY ; MCCREARY ROBERT A JR ; PNC BANK NATIONAL ASSOCIATION ; WILMINGTON TRUST NATIONAL ASSOCIATION IN ITS CAPACITY ADMINISTRATIVE AGENT AND COLLATERAL AGENT FOR SECURED PARTIES AS ; ARCH COAL INC

Inventor(s):(std): MCCREARY JR ROBERT A ; MCCREARY ROBERT A JR ; ROBERT A MCCREARY JR

Inventor(s): MCCREARY ROBERT A

Agent(s): PHILLIPS ORMONDE FITZPATRICK; OSLER HOSKIN AND HARCOURT LLP

International class (IPC 8–9): E02F3/40 (Advanced/Invention); E02F3/40 (Core/Invention)

International class (IPC 1–7): E02F3/28 E02F3/30 E02F3/40 E02F5/02

CPC: Y10S37/903 E02F3/40

European class: E02F3/40

US class: 37/103 37/118A 37/443 37/444 37/903 37/DIG.12 414/726

Classification Explorer

Cited documents: WO9005813 A1, US4939855 A, US4691455 A, US4550512 A, US4457085 A, US4081919 A, US3921316 A, US3854608 A, US3773196 A, US3767070 A, US3341041 A, US3307277 A, US3070246 A, US1813110 A,

Forward Citations: WO15198248, WO15008293, US8069593, US6434862, US5815958, US2014230293, US2010215777, US2009183398, GB2447087, AU762904,

Abstract:
Source: US5063694A An excavating dipper for use with power shovels, draglines and the like is fabricated from steel plate and is formed to have a separable bottom body member, which may be replaced when worn. The dipper is of lightweight steel plate construction fabricated into substantially all welded top and bottom body members. The plate members forming the side and bottom walls of the bottom body member are reinforced by longitudinal and transverse girth ribs.

0) US2016169583A – STEAM CONDENSATION TOWER FOR A GRANULATION INST...

19) Family number: 58242719 (US2016169583A) © PatBase

Title: STEAM CONDENSATION TOWER FOR A GRANULATION INSTALLATION

Priority: EP20140735535 20140627 LU20130092235 20130701 WO2014EP63712 20140627

Family:

Publication number	Publication date	Application number	Application date
CA2916647 AA	20151222	CA20142916647	20140627
CN105378117 A	20160302	CN201480037828	20140627
DE602014004244 D1	20161124	DE201460004244T	20140627
EA201600080 A1	20160630	EA20160000080	20140627
EP3017071 A1	20160511	EP20140735535	20140627
EP3017071 B1	20161012	EP20140735535	20140627
IN201617000073 A	20160831	IN201617000073	20160101
JP2016530472 T2	20160929	JP20160522538T	20140627
KR20160025618 A	20160308	KR20167002610	20140627
LU92235 A1	20150102	LU20130092235	20130701
TR201620365 T4	20170123	TR20160020365T	20140627
TW201512409 A	20150401	TW20140122439	20140630
US2016169583 AA	20160616	US20140902836	20140627
WO15000808 A1	20150108	WO2014EP63712	20140627
ZA201509311 A	20161130	ZA20150009311	20151222

Probable Assignee: PAUL WURTH SA

Assignee(s):(std): WURTH PAUL SA

Assignee(s): SCHWEITZER MARC ; PAUL WURTH S A ; KAPPES HORST ; MATHIEU TOMMY ; PAUL WURTH SA

Inventor(s):(std): KAPPES HORST ; SCHWEITZER MARC ; MATHIEU TOMMY

Inventor(s): TOMMY MATHIEU ; MARC SCHWEITZER ; HORST KAPPES

Agent(s): RIDOUT AND MAYBEE LLP; OFFICE FREYLINGER SA; OFFICE FREYLINGER; FULYA SUEMERALP; KIHN PIERRE ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B01D53/50 B01D53/52 C12B C21B3/04 C21B3/08 C21B7/10 C21B9/10 F27D F27D15/00 F27D15/02 (Advanced/Invention); B01D53/50 B01D53/52 (Advanced/Non–invention)

CPC: C21B3/04 C21B7/10 F27D15/0286 C21B3/08

US class: 266/207

Classification Explorer

Cited documents: WO12079797 A1, US9085809 BB, US2016169584 AA, EP0573769 A1, CN102534073 A,

Forward Citations: US2016169584,

Abstract:
Source: US2016169583A The present invention concerns a granulation installation (10) for granulating molten material produced in a metallurgical plant. The installation comprises a.o. a steam condensation tower (30) with a steam condensing system and an evacuation device (60) for selectively evacuating gas and steam from said tower, condensing excessive steam and evacuating gas to the atmosphere, said evacuation device (60) having an inlet (62) arranged to communicate with said upper zone (44) of said condensation tower (30) above the

water−spraying device (40) and an outlet arranged to evacuate and condensate steam and evacuate gas from said condensation tower (30).

0) US2016169584A – STEAM CONDENSATION SYSTEM FOR A GRANULATION INS...

20) Family number: 58242720 (US2016169584A) © PatBase

Title: STEAM CONDENSATION SYSTEM FOR A GRANULATION INSTALLATION

Priority: EP20140734793 20140627 LU20130092236 20130701 WO2014EP63713 20140627

Family:

Publication number	Publication date	Application number	Application date
CA2916571 AA	20151222	CA20142916571	20140627
CN105358717 A	20160224	CN201480037830	20140627
DE602014003887 D1	20161103	DE201460003887T	20140627
EA201600079 A1	20160630	EA20160000079	20140627
EP3017070 A1	20160511	EP20140734793	20140627
EP3017070 B1	20160921	EP20140734793	20140627
ES2607816 T3	20170404	ES20140734793T	20140627
IN201617000072 A	20160831	IN201617000072	20160101
JP2016528461 T2	20160915	JP20160522539T	20140627
KR20160027131 A	20160309	KR20167002691	20140627
LU92236 A1	20150102	LU20130092236	20130701
PL3017070 T3	20170331	PL20140734793T	20140627
TR201618722 T4	20170123	TR20160018722T	20140627
TW201512410 A	20150401	TW20140122636	20140701
US2016169584 AA	20160616	US20140902838	20140627
WO15000809 A1	20150108	WO2014EP63713	20140627
ZA201509312 A	20161130	ZA20150009312	20151222

Probable Assignee: PAUL WURTH SA

Assignee(s):(std)**:** WURTH PAUL SA

Assignee(s): SCHWEITZER MARC ; PAUL WURTH S A ; KAPPES HORST ; MATHIEU TOMMY ; PAUL WURTH SA

Inventor(s):(std)**:** KAPPES HORST ; SCHWEITZER MARC ; MATHIEU TOMMY

Inventor(s): TOMMY MATHIEU ; MARC SCHWEITZER ; HORST KAPPES

Agent(s): RIDOUT AND MAYBEE LLP; OFFICE FREYLINGER SA; OFFICE FREYLINGER; CARPINTERO MARIO; FULYA SUEMERALP; KIHN PIERRE ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B01D53/50 B01D53/52 C12B C21B3/08 C21B7/10 C21B9/16 F27D F27D15/02 F27D17/00 (Advanced/Invention); B01D53/50 B01D53/52 (Advanced/Non–invention)

CPC: Y02P10/265 Y02P10/283 C21B7/10 F27D15/0286 C21B3/08

US class: 266/207

Classification Explorer

Cited documents: WO12079797 A1, US9085809 BB, US2016169583 AA, JP6079131 A2, EP0573769 A1, CN302534073 S, CN103060497 A, CN102268494 A,

Forward Citations: WO17093347, US2016169583,

Abstract:
Source: US2016169584A The present invention concerns a granulation installation (10) for granulating molten

material produced in a metallurgical plant. The installation comprises a water injection device (20), for injecting granulation water into a flow of molten material (14) to granulate the molten material, a granulation tank (18) for collecting the granulation water and the granulated material. The installation further comprises a steam collecting hood that includes an evacuation device for evacuating steam from said hood, condensing said steam and evacuating said condensed steam to the atmosphere.

0) US3896569A – EARTH WORKING IMPLEMENT AND TOOTH ASSEMBLY THER...

21) Family number: 1156268 (US3896569A) © PatBase

Title: Earth working implement and tooth assembly therefor

Priority: US19740459401 19740409

Family:

Publication number	Publication date	Application number	Application date
AU197474236 A1	19760415	AU19740074236	19741011
CA1022587 A1	19771213	CA19740211169	19741010
DE2452649 A1	19751023	DE19742452649	19741106
DE2452649 B2	19770428	DE19742452649	19741106
DE2452649 C3	19771215	DE19742452649	19741106
DE2462382 A1	19770407	DE19742462382	19741106
FR2267422 A1	19751107	FR19750000335	19750107
GB1451729 A	19761006	GB19740051622	19741128
IN144051 A	19780318	IN1974CA02405	19741102
JP50136905 A2	19751030	JP19740141114	19741205
JP52048402 B4	19771209	JP19740141114	19741205
JP924629 C3	19780922	JP19740141114	19741205
NO140606 B	19790625	NO19750001164	19750404
NO140606 C	19791003	NO19750001164	19750404
NO751164 A	19751010	NO19750001164	19750404
OA5003 A	19801231	OA19750055501	19750516
PH10762 A	19770902	PH19750017004	19750402
SE407600 B	19790402	SE19750004020	19750408
SE407600 C	19790712	SE19750004020	19750408
SE7504020 A	19751010	SE19750004020D	19750408
US3896569 A	19750729	US19740459401	19740409
ZA7406585 A	19751126	ZA19740006585	19741016
ZM4175 A	19760521	ZM19750000041	19750409

Probable Assignee: MARION POWER SHOVEL CO

Assignee(s):(std)**:** DRESSER IND ; MARION POWER SHOVEL CIE INC ; MARION POWER SHOVEL CO ; MARION POWER SHOVEL COMP INC

Assignee(s): MARION POWER SHOVEL COMPANY INC ; MARION POWER SHOVEL CY INC US ; THOMPSON GEORGE J ; MARION POWER SHOVEL CO INC ; DRESSER INDUSTRIES INC ; INDRESCO INC ; DALRYMPLE THOMAS H

Inventor(s):(std)**:** DAILRYMPIE T ; DAIRYMPLE T ; DALRYMPLE T ; DALRYMPLE T H ; DALRYMPLE THOMAS H ; DALRYMPLE THOMAS T ; THOMPSON G ; THOMPSON G J ; THOMPSON GEORGE J ; THOMPSON GOERGE J ; THONPSON GEORGE J

Inventor(s): G J THOMPSON ; GEORGE J THOMPSON AND THOMAS H DALRYMPLE ; GOERGE J THOMPSON ; H DALRYMPLE THOMAS ; J THONPSON GEORGE ; MARION OHIO ; T H DALRYMPLE ; THOMAS H DALRYMPLE

International class (IPC 8–9): E02F3/40 E02F9/28 (Advanced/Invention); E02F3/40 E02F9/28 (Core/Invention)

International class (IPC 1–7): E02D E02F3/28 E02F3/40 E02F3/81 E02F9/28 E21D

CPC: E02F3/40 E02F9/2825

European class: E02F3/40 E02F9/28A2B

US class: 37/456 414/722

Classification Explorer

Cited documents:	US3621594 A, US2284178 A, US2055265 A, US1992501 A, US1920873 A, US1716432 A, US1210366 A,
Forward Citations:	WO9308339, WO13044297, USRE42629, US9404240, US7793444, US7596895, US7036249, US7032334, US6799387, US6757995, US6574892, US6502336, US6467204, US6467203, US5901480, US5653048, US5553408, US5172501, US4729180, US4271614, US2007204490, US2007022640, US2005274047, US2005229442, JP62133219, EP2589714,

Abstract:
Source: US3896569A An implement suitable for use with an earth moving, excavating or mining machine generally comprising a body including a wall provided with a forwardly and transversely disposed lip portion, means for attaching the body to the machine, the lip portion of the body wall having a plurality of transversely spaced ribs, each of the ribs having forwardly and rearwardly disposed pin receiving openings, a pair of base plates mounted on the sides of each of the ribs, each of the base plates having pin receiving openings registered with the openings in an adjoining rib, a plurality of tooth points each having a rearwardly opening socket receiving the forward end of a set of rib and adjoining base plates for mounting the tooth point thereon, each of the tooth points having side walls with openings registered with a set of openings in the adjoining set of base plates and rib on which the tooth point is mounted, and pins disposed in the registered openings for securing the base plates on the ribs and the tooth points on adjoining rib and base plate sets.

0) GB290793A – IMPROVEMENTS IN OR CONNECTED WITH PURIFIERS FOR...

22) Family number: 18495635 (GB290793A) © PatBase

Title: Improvements in or connected with purifiers for use in the manufacture of gas

Priority: GB19270008986 19270401

Family:

Publication number	Publication date	Application number	Application date
GB290793 A	19280524	GB19270008986	19270401

Probable Assignee: ROBERT LAURENCE CHAMBERS

Assignee(s):(std): ROBERT LAURENCE CHAMBERS ; WHESSOE FOUNDRY AND ENGINEERIN

Assignee(s): WHESSOE FOUNDRY AND ENGINEERING CO LTD ; THE WHESSOE FOUNDRY AND ENGINEERING COMPANY LIMITED

International class (IPC 8–9)**:** C10K1/22 (Advanced/Invention); C10K1/00 (Core/Invention)

International class (IPC 1–7)**:** C10K1/22

CPC: C10K1/22

European class: C10K1/22

Classification Explorer

Abstract:
Source: GB290793A Purifiers.–The cover C of a purifier A is raised by a hand–operated lifting tackle e.g. of the davit or runway type and is supported in its raised position over the purifier by pivoted or auxiliary supports 6, whilst the charged is renewed. Guys 3, struts and c. may be provided to restrain the cover from tilting. One set of removable davits may be used for a battery of purifiers or one set of tackle used with the davits provided for each purifier. The covers which may be domed for circular purifiers may comprise steel plates with radial rafters on the top face and eccentric purlins on the underface.

0) GB470797A – IMPROVEMENTS IN AND RELATING TO THE UTILISATION...

23) Family number: 19034978 (GB470797A) © PatBase

Title: IMPROVEMENTS IN AND RELATING TO THE UTILISATION OF CERTAIN WASTE PRODUCTS ARISING INTHE MANUFACTURE OF BEET SUGAR

Priority: GB19360005404 19360222

Family:

Publication number	Publication date	Application number	Application date
GB470797 A	19370823	GB19360005404	19360222

Probable Assignee: KARL HAMPEL

Assignee(s):(std)**:** EDWARD WILLIAM JAMES ; KARL HAMPEL

International class (IPC 8–9)**:** A23K1/10 (Advanced/Invention); A23K1/10 (Core/Invention)

International class (IPC 1–7)**:** A23K1/14

CPC: A23K10/26

European class: A23K1/10C

Classification Explorer

Forward Citations: WO07085467, US2010178403,

Abstract:
Source: GB470797A Cattle food is made by mixing the residual vegetable matter or pulp of beet with a proportion of the lime sludge of beet sugar manufacture, and drying the mixture. Bone flour, rock phosphate, and salt may be added. Plain or molassed pulp may be used. Lime sludge and molasses may be agitated and mixed in a tank and then sprayed over the pulp, or a layer of sludge carried by a conveyer, may be mixed by rakes with pulp moving in the same direction as that of the conveyer. According to the Provisional Specification, sulphur dioxide may be used for bleaching purposes in cases where an increased amount of sludge is used.

0) GB732317A – IMPROVEMENTS IN SINGLE STAGE CASED SCREW PROPEL...

24) Family number: 19796362 (GB732317A) © PatBase

Title: Improvements in single stage cased screw propeller fans and the like

Priority: 19520722

Family:

Publication number	Publication date	Application number	Application date
GB732317 A	19550622	GB19530020107	19530720

Probable Assignee: EDWIN STANLEY WAITE TAYLOR

Assignee(s):(std)**:** EDWIN STANLEY WAITE TAYLOR ; MACARD SCREWS LTD

Assignee(s): MACARD SCREWS LIMITED

International class (IPC 8–9)**:** F04D19/02 (Advanced/Invention); F04D19/00 (Core/Invention)

International class (IPC 1–7)**:** F04D29/38

CPC: F04D19/028

European class: F04D19/02G

Classification Explorer

Abstract:
Source: GB732317A 732,317. Axial–flow fans c. MACARD SCREWS, Ltd., and TAYLOR, E. S. W. July 20, 1953 [July 22, 1952], No. 20107/53. Drawings to Specification. Class 110 (1). In a single–stage cased axial–flow fan, blower or pump, the mean flow coefficient (i.e. the ratio between the mean axial velocity of the fluid and the peripheral speed of the impeller) exceeds 0.5. For maximum efficiency, it varies between 0.6 and 1.2. In the three cases where guide vanes are provided at the outlet only, at both inlet and outlet, and at the inlet only, the mean geometric pitch coefficient (i.e. the mean geomteric pitch of the impeller blades, divided by the circumference of the impeller periphery) exceeds 0.8, 0.6 and 0.4 respectively, and for maximum efficiency is in the ranges 1.0 to 2.9, 0.6 to 1.3, and 0.4 to 1.0 respectively. The impeller blades, and guide vanes may be of adjustable pitch.

0) DE1991840U – MOTORISCH BETRIEBENE BLECH–, PROFILSTAHLSCHERE ...

25) Family number: 21258388 (DE1991840U) © PatBase

Title: MOTORISCH BETRIEBENE BLECH–, PROFILSTAHLSCHERE OD. DGL. MOTOR DRIVEN PLATE, ANGLE SHEAR OD. DGL. (Machine translation)

Priority: DE1968M062277U 19680510

Family:

Publication number	Publication date	Application number	Application date
DE1991840 U	19680814	DE1968M062277U	19680510

Probable Assignee: MUHR AND BENDER

Assignee(s):(std)**:** MUHR AND BENDER

Assignee(s): MUHR UND BENDER

International class (IPC 1–7)**:** B23D31/00

Abstract:
Source: DE1991840U (Claim 1) 1. Moto,risch betriebene" beispielsweise in Stahl– plattenkonstruktion ausgefuelirte Blech–, Profilstahlschere od.dgl. mit einem angetriebenen, in einer Vertikalebene arbeitenden Scherenschlitten einerseits sowi emit einem, von einer vom stufenfoermigen Scherenschlitten aus abgeleiteten Antriebsbewegung getriebenen und in einer geneigten Ebene zum Scherens,chlitten arbeitenden Profilschlitten anderseits, wobei sowohl der Scheren– als auchder Profilschlitten an den stirnseitigen Schmalseiten seitlich an fuehrungsleistenartigen Wi

Machine translation: (claim 1) 1 Moto–driven "for example, in steel–plate construction ausgefuelirte sheet metal, steel worker or the like. With a driven, in a vertical plane working shears slide one hand sowi emit one of a dated stufenfoermigen shears slide from secondary drive motion–driven and in a plane inclined to the shearing, chlitten working profile slide on the other hand, where both the scissor as auchder profile slide to the front narrow sides laterally on fuehrungsleistenartigen Wi

0) US1933743A – HEATING FURNACE AND METHOD OF FORMING THE SAME ...

26) Family number: 22991811 (US1933743A) © PatBase

Title:	HEATING FURNACE AND METHOD OF FORMING THE SAME
Priority:	US19310507866 19310110

Family:

Publication number	Publication date	Application number	Application date
US1933743 A	19331107	US19310507866	19310110

Probable Assignee:	PENNSYLVANIA ENGINEERING WORKS
Assignee(s):(std):	PENNSYLVANIA ENGINEERING WORKS
Inventor(s):(std):	LOCKHART CARL B ; ALLEN LEE E
International class (IPC 8–9):	F24H3/00 F24H9/18 (Advanced/Invention); F24H3/00 F24H9/18 (Core/Invention)
International class (IPC 1–7):	F24H3/02
CPC:	F24H3/008 F24H9/189
European class:	F24H3/00 F24H9/18B4
US class:	126/151 126/99R

Classification Explorer

Forward Citations: US2549093,

Abstract:
Source: US1933743A We claim: 1, The method of forming a structure which comprises forming at metal sheet of a width and length suliicient to produce the furnace structure, cutting the sheet irom each of the vertical edges back towerri the center of the sheet for a psedetermined LiiStZ11'lCGi circling the sheet into D. substantially cylindrical form, joining the meeting edges of the sheet above the out to provide ei permanent scam, and bending outwardly and modifications the contemplation thescope of the sheet steel fs,':'19.ee the portions of the sheet below the out to provide spaced apart Wings, the wings being spread to' conform to the width of the metal front plate with which the structure is adapted to be used, then securing' ev curved plate across the gap between the wings and intermecllate the top and the bottom of 'thc wings and suhstaiitially iiush with the interior of the cyiinciriezzl walls to form a, p€Lrti.tion defining a ire door and en ssh door. ' 2. The method of forming a sheet steel furnace structure which comprises forming a metal sheet cf a width and 1C!1gth`S`L1ITlClSl1t to proS0 Q95 N0 U15 IIC! duct: the furnace structure, cutting the sheet" from each of the vertical edges back toward the center of thesheet for a. predetermined dis– fm tance, circling the sheet into a substantially cylindrical form, joining the meeting edges of the sheet above the cut to provide a permanent seam, and bending the portions of the sheet below the cut outwardly to provide spaced apart wings, the wings being spread to conform to the width of the metal front plate with which the structure is adapted to be used, the Wings being flared outwardly to this width, then securing a curved plate across the gap between the wings and intermediate the top and the bottom of the wings and substantially nush with the interior of the cylindrical Walls to form a partition defining a fire door and an ash door. 3. A furnace shell of the class described comprising an integral body having a completely cylindrical upper portion formed from sheet metal, said body having integral forwardly extending wings below such cylindrical upper portion, and a plate having upwardly turned fiance at the outer edge thereof spanning the distance between the wings at the upper ends of said wings and having its ends welded to the wings and its inner edge welded to the lower portion of said cornpletely cylindrical upper portion of the body, said wings being dared outwardly, and a front plate bolted to the wings, one of said wings having a laterally onset pocket therein, and a grate operating rod extending through the front plate into the shell. said rod having a laterally offset portion received Within said pocket. 5. A furnace structure comprising a front plate, an integral sheet metal casing of greater height than the front plate having a continuously cylindrical Lipper part, a generally cylindrical lower part with outwardly turned wings which extend substantially the full height of the front plate, the outer ends of the wings being joined to the upper plate and being separated a distance at least as great as the distance between the wings at their inner ends where they join the cylindrical lower part of the body, the distance between the wings at the inner ends being approximately the same as the maximum width of the grate which the cylindrical lower part of the body will accommodate. 5. A furnace structure comprising a front plate, an integral sheet metal casing of greater height than the front plate having a continuously cylindrical upper part, a generally cylindrical lower part with outwardly turned wings which extend substantially the full height of the front plate, the outer ends of the wings being joined to the upper plate. the wings diverging outwardly from the cylindrical body to the front plate, the separation between the wings at their point oi' juncture with the cylindrical body being substantially the same as the diameter of the grate which the cylindrical lower part of the casing will accommodate and less than the maximum diameter of such lower part of the body. 6. A furnace structure comprising a front plate, an integral sheet metal casing of greater height than the front plate having a continuously cylindrical upper part, a generally cylindrical lower part with outwardly turned wings which extend substantially the full height of the front plate, the outer ends of the wings

being jonied to the upper plate and being separated a distance at least as great as the distance between the wings at their inner ends where they join the cylindrical lower part of the body, the distance between the wings at the inner ends being approximately the same as the maximum width of the grate which the cylindrical lower part of the body will accommodate, said wings having outwardly turned nanges at their outer ends, the furnace having a. sheet metal casing which laps behind said flanges, and means for securing the sheet metal casing to the iianges. 7. A heating furnace of the type having a nre box with a fire door andan ash door, comprising a front plate having »a door opening near the top thereof and a door opening near the bottom thereof, a nre box comprising a sheet metal cylinder having a continuous upper portion and having a pocket structure below such upper portion, said pocket comprising integral wings projecting outwardly from the metal cylinder at opposite sides of the center line of the cylinder and of a height substantially coextensive with the front plate, the outer edges of the wings being connected to the front plate, the separation of the wings at their point of juncture with the cylindrical body being slightly less than the width of the front plate and the internal diameter of the cylinder, and a grate within the cylinder the diameter of which is substantially the same as the distance between said wings at their point of juncture with the cylindrical body. ` S. A heating furnace of the type having a nre box with a fire door and an ash door, comprising a front plate having a door opening near the top thereof and a door opening near the bottom thereof, a fire box comprising a sheet metal cylinder having a continuous upper portion and having a pocket structure below such upper portion, said pocket comprising integral wings projecting outwardly from the rnetal cylinder at opposite sides of the center line of the cylinder and of a height substantially coextensive with the front plate, the outer edges of the wings being connected to the front plate, the separation of the wings at their point of juncture with the cylindrical lcody being slightly less than the width of the front plate and the internal diameter of the cylinder, a grate within the cylinder the diameter of which is substantially the same as the distance between said wings at their point of juncture with the cylindrical body, and a partition cornprising a curved plate extending around between the wings intermediate the top and bottom thereof and forming an opening through the casing which registers with the nre door and the ash door of the front plate. 9. The method oi' making furnaces of a range of sizes, which comprises forming front plates of uniform dimension for furnaces of a number of different sizes, forming a plurality ol' cylindrical nre boxes of different diameters and providing outwardly projecting spaced apart wings on such cylindrical fire boxes with the :ninirninn separation between the wings of any one size as great as the diaineter of the grate which the :Hre box will hold and less than the internal diameter of the cylindrical casing, and bending thc wings to make the spacing between the outer edges thereof correspond to the width of the front plate and securing the outer edges of the wings to thc marginal portions of the front plate. ' CARL E. LOCKHART

0) JP2003147859A – STEEL PLATE CONSTRUCTION FOR SC METHOD, AND SC ...

27) Family number: 28654836 (JP2003147859A) © PatBase

Title: STEEL PLATE CONSTRUCTION FOR SC METHOD, AND SC METHOD USING THEREOF

Priority: JP20010351895 20011116

Family:

Publication number	Publication date	Application number	Application date
JP2003147859 A2	20030521	JP20010351895	20011116

Probable Assignee: TOSHIBA PLANT KENSETSU CO LTD

Assignee(s):(std)**:** TOSHIBA PLANT KENSETSU CO LTD

Inventor(s):(std)**:** MATSUZAKI HIROMITSU

International class (IPC 8–9)**:** E04B1/30 E04B1/48 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/30 E04B1/48

Classification Explorer

Abstract:
Source: JP2003147859A PROBLEM TO BE SOLVED: To easily joint a suspending member for suspending equipment or the like to a steel plate to be used for SC method for installing a compound structural body of a steel plate–concrete.SOLUTION: This steel plate construction is equipped with a steel plate 1 having a through hole 2 and a bar–shaped insert connector 3 having a threaded portion 4, the insert connector 3 is fixed to the steel plate 1, and its thread portion 4 is exposed to the surface of the steel plate 1. A suspending member 9 can be coupled to the thread portion 4 in a freely detachable manner through a screwing pieces such as bolts or the like.

0) US3553847A – FLUIDIZED BED REACTOR

28) Family number: 323301 (US3553847A) © PatBase

Title: FLUIDIZED BED REACTOR

Priority: US19680758207 19680909

Family:

Publication number	Publication date	Application number	Application date
DE1945505 A1	19700319	DE19691945505	19690909
GB1275143 A	19720524	GB19690042206	19690825
JP48024153 B4	19730719	JP19690071556	19690909
US3553847 A	19710112	US19680758207	19680909

Probable Assignee: FULLER CO

Assignee(s):(std): FULLER CO

Assignee(s): FULLER COMPANY ; SECURITY PACIFIC BUSINESS CREDIT INC ; SECURITY PACIFIC BUSINESS CREDIT INC A CORP OF DE ; BARCLAYS AMERICAN BUSINESS CREDIT INC ; BARCLAYS AMERICAN BUSINESS CREDIT INC 111 FOUNDERS

Inventor(s):(std): KOREN WILLIAM ; KRAMER WALTER W ; W KRAMER WALTER

Inventor(s): WALTER W KRAMER ; WILLIAM KOREN

International class (IPC 8–9): B01J8/44 F27B15/10 (Advanced/Invention); B01J8/24 F27B15/00 (Core/Invention)

International class (IPC 1–7): B01J8/44 F26B17/10 F26B3/08

CPC: B01J8/44

European class: B01J8/44

US class: 34/570 34/584 422/143

Classification Explorer

Forward Citations: WO15153270, US5372791, US4946655, US4627175, US4292023, US4171945, US3661177, FR2172256, FR2172256, EP0462515, CN104941536,

Abstract:
Source: US3553847A ABSTRACT OF THE DISCLOSURE A fluid bed reactor–gas distribution grid of steel plate construction having an upper plate and a lower plate spaced therefrom wherein the lower plate includes a radial–ly outwardly extending peripheral ring portion clamped between the reactor base plate and windbox grid support ring and having a floating non–heat conductive seal between the grid ring portion and reactor base plate so as to not only provide a three–way seal between the atmosphère, reactor bed chamber and windbox, but to also al–low the lower grid plate to expand, and the upper grid plate being provided with means for allowing it to expand relative to the lower grid plate and connecting grid side wall, and wherein the lower grid plate is in direct heat transfer relation with the grid support ring to provide means for transferring heat from high bed temperature to the outer windbox shell, and the exterior dimension of the grid being such as to provide a clearance between the grid side wall and adjacent reactor refractory which clearance is loosely packed with insulation material to further assist the seal and to protect the reactor base ring from the det–rimental effect of high bed températures.

0) FR2374479A – PLAQUE RENFORCEE NOTAMMENT POUR UN REGARD DE TR...

29) Family number: 3614186 (FR2374479A) © PatBase

Title: PLAQUE RENFORCEE NOTAMMENT POUR UN REGARD DE TROTTOIR FOOT–WAY MANHOLE COVER FOR STIFFENED STEEL PLATE CONSTRUCTION – HAS HORIZONTAL TOP AND BOTTOM PLATES FIXED APART BY LONGITUDINAL Z=SECTIONS AND U=SECTIONS

Priority: FR19760037696 19761215

Family:

Publication number	Publication date	Application number	Application date
FR2374479 A1	19780713	FR19760037696	19761215
FR2374479 B3	19790824	FR19760037696	19761215

Probable Assignee: SAMBRE AND MEUSE USINES

Assignee(s):(std)**:** SAMBRE AND MEUSE USINES

Assignee(s): SAMBRE MEUSE USINES ACIERIES

International class (IPC 8–9): E02D29/14 (Advanced/Invention); E02D29/14 (Core/Invention)

International class (IPC 1–7): E02D29/14

CPC: E02D29/14

European class: E02D29/14

Classification Explorer

Abstract:
Source: FR2374479A Plaque renforcee pour l'obturation d'une ouverture comportant deux toles 1 et 2 reliees par des nervures 3 et 4 assurant de plus une rigidification de la plaque Application aux plaques de trottoir pour en permettre une realisation legere, economique, et de grande resistance. The manhole cover is for use in footways and is of a cellular stiffened steel plate construction. In detail the cover may comprise horizontal top (1) and bottom plates (2) with an infill of parallel interspaced 'Z' (3) and channel sections (4). The construction combines light weight with high strength characteristics. The cover may be rectangular in plan with the infill sections (3, 4) aligning parallel to a major size, extending over the length of the plates (1, 2), and locating at equal transverse intervals. The interior (3) and exterior (4) infill sections may be of 'Z' and channel section respectively and may be fixed to the plates by welding (5, 6) or bolting or combinations. The external 'U' sections (4) may be installed with the webs (W) innermost.

0) IN00184KO2007A – A HIGH CAPACITY TORPEDO LADLE CAR FOR TRANSPORT...

30) Family number: 42115011 (IN00184KO2007A) © PatBase

Title: A HIGH CAPACITY TORPEDO LADLE CAR FOR TRANSPORTATION OF HOT METAL FROM BLAST FURNACE TO LD FURNACE FLOOR

Family:

Publication number	Publication date	Application number	Application date
IN00184KO2007 A	20080822	IN2007KO00184	20070206
IN247681 B	20110506	IN2007KO00184	20070206

Probable Assignee: TATA STEEL LTD

Assignee(s): TATA STEEL LTD

Inventor(s): NAIR K P G ; SINGH AVTAR

International class (IPC 1–7): C21C1/00

Abstract:
Source: IN00184KO2007A This invention relates to a high capacity Torpedo Ladle car for transportation of hot metal from blast furnace to LD furnace floor comprising of a torpedo shaped vessel (V) of a upper car and an undercarriage, the upper car consisting of a rotatable and tiltable torpedo shaped vessel (V) with pouring spout (39) and closing covers (41), two hardened races (42) provided at both the ends of the vessel, four sets of roller assemblies consisting of plurality of rollers (44) with cage and girth gear (59), two driving pinion shafts (55) driven by motor (M), gear boxes (46) and protection covers (11) for the races and drives, the vessel being supported pair wise on a roller support (7) with spherical seat (3) underneath; the undercarriage consisting of upper bolster fitted with the centre buffer coupler (48) being supported on two lower bolsters (9) through spherical seats (2, 3, 4), each lower bolster being supported on two bogies assemblies (1), each bogie consisting of bogie frame (91), one spherical seat (92), two wheels (W) on both sides, axle sets (93) and plurality of springs (95); and a tilting drive assembly mounted on the roller support consisting of two each of motors, brake drum (47), flexible coupling, electro hydraulic thruster brake (96) planetary gear box (46) with toothed coupling and pinion mounted on pinion shaft driving the girth gear to rotate and tilt the vessel for pouring out hot metal to deliver into two shorter capacity charging ladle and finally to transporting to LD converter via desulphurisation/deslagging station.

0) US4593629A – SOLID FUEL STOKER

31) Family number: 4868388 (US4593629A) © PatBase

Title: Solid fuel stoker

Priority: DK19820005443 19821208 DK19840003644 19840726 WO1983DK00114 19831207

Family:

Publication number	Publication date	Application number	Application date
DK364484 A	19840726	DK19840003644	19840726
DK364484 A0	19840726	DK19840003644	19840726
EP0128162 A1	19841219	EP19830903785	19831207
FI843091 A	19840806	FI19840003091	19840806
FI843091 A0	19840806	FI19840003091	19840806
NO843081 A	19840731	NO19840003081	19840731
US4593629 A	19860610	US19840638968	19840731
WO8402385 A1	19840621	WO1983DK00114	19831207

Probable Assignee: DAN TRIM APS MASKINFAB

Assignee(s):(std)**:** DAN TRIM APS MASKINFAB ; MASKINFABRIKKEN DAN TRIM APS

Inventor(s):(std)**:** GUNDGAARD PEDERSEN MARIANNE ; MICHAEL VAUGHAN ; PEDERSEN MARIANNE GUNDGAARD ; VAUGHAN MICHAEL ; PEDERSEN MARIANNE G ; PEDERSEN MARIANNA GUNDGAARD

Designated states: AT BE CH DE DK FI FR GB LI LU NL NO SE US

International class (IPC 8–9)**:** F23J1/06 F23K3/14 F23K3/16 (Advanced/Invention); F23J1/06 F23K3/00 (Core/Invention); F23K (Subclass/Invention)

International class (IPC 1–7)**:** F23J1/02 F23K3/16

CPC: F23B3/00 F23J1/06 F23K3/14

European class: F23B3/00 F23J1/06 F23K3/14

US class: 110/110 110/172

Classification Explorer

Cited documents: WO8301672 A1, US737306 A, US454037 A, US454037, US4444127 A, US2510240 A, US2250181 A, US1315158 A, US1315158, SE109115 C1, SE109115 C, DE3016531 C2,

Forward Citations: WO9216791, WO8801361, WO0125697, WO0075563, US8317886, US7976593, US7793601, US7621227, US6120567, US5285738, US5133266, US5070798, US5010831, US4971599, US2009205545, US2009000195, US2007157858, US2007137538, US2006107595, US2004107638, EP2402651, EP2400217,

Abstract:
Source: US4593629A PCT No. PCT/DK83/00114 Sec. 371 Date Jul. 31, 1984 Sec. 102(e) Date Jul. 31, 1984 PCT Filed Dec. 7, 1983 PCT Pub. No. WO84/02385 PCT Pub. Date Jun. 21, 1984.A tunnel shaped stoker hearth comprises a lower U–shaped portion (42) made conventionally as a double walled steel construction having injection holes (46) for combustion air in the inner wall thereof, and a top portion (48), which is made of a ceramic material, whereby, in operation, the top portion of the tunnel hearth is kept red or white glowing for effective combustion of the fuel and the gases as escaping therefrom.

32) Family number: 51331096 (US2013264754A) © PatBase

Title: STEAM CONDENSATION TOWER FOR A GRANULATION INSTALLATION

Priority: LU20100091765 20101214 WO2011EP67176 20110930

Family:

Publication number	Publication date	Application number	Application date
BR112013014355 A2	20160927	BR20131114355	20110930
CN102534073 A	20120704	CN201110294883	20110930
CN102534073 B	20150204	CN201110294883	20110930
IN04633DN2013 A	20141128	IN2013DN04633	20130524
LU91765 A1	20120615	LU20100091765	20101214
RU2013132347 A	20150120	RU20130132347	20110930
RU2575893 C2	20160220	RU20130132347	20110930
UA107526 C2	20150112	UA20130008667	20110930
US2013264754 AA	20131010	US20110993762	20110930
US9085809 BB	20150721	US20110993762	20110930
WO12079797 A1	20120621	WO2011EP67176	20110930

Probable Assignee: WURTH PAUL SA

Assignee(s):(std)**:** GREIVELDINGER BOB ; WURTH PAUL SA

Assignee(s): PAUL WURTH S A ; PAUL WURTH SA

Inventor(s):(std)**:** BOB GREIVELDINGER ; GREIVELDINGER BOB

Agent(s): CANTOR COLBURN LLP; LAMBERT ROMAIN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): C04B5/02 C21B3/06 C21B3/08 F27B1/10 F27D15/02 F28B3/04 (Advanced/Invention); F27D15/00 (Core/Invention)

CPC: F28B3/04 C21B3/06 F27B1/10 C21B3/08 F27D15/02 F27D15/0286

European class: C21B3/08 F27B1/10 F27D15/02 F27D15/02C

US class: 1/1 165/110 266/160 425/7

Classification Explorer

Cited documents: WO04048617 A1, US6000242 A, US5540895 A, US5248420 A, US4204855 A, US3912487 A, US2007107466 AA, SU600110 T, RU2091152, LU91424 A, KR20100093819 A, KR20040009257 A, DE3619857 A1, DE10216415 A1, CN2775048 Y, CN201520769 U, CN201198478 Y, CN101660014 A, CN101265039 A,

Forward Citations: WO17093347, WO15000809, WO15000808, US2016169584, US2016169583, LU92236, LU92235, CN105378117, CN103060498, CN103060498, CN103060496, CN103060494, CN103060494,

Abstract:
Source: US2013264754A A granulation installation for a melt produced in a metallurgical plant, especially for blast furnace slag having a water injection device for quenching and thereby granulating the melt and a granulation tank for collecting water and granulates a steam condensation tower is located above the granulation tank for collecting steam generated in the tank, where the tower has a steam condensing system with a water−spraying device and a water−collecting device below the water−spraying device, and the tower is equipped with a stack for selectively evacuating excessive steam to the atmosphere, the stack having an inlet communicating with the lower zone of the condensation tower and an outlet arranged to evacuate steam to the atmosphere above the condensation tower, the stack being equipped with an obturator device for selective evacuation of steam through the stack, where the installation according to the invention may process an increase of 60 percent of slag, e.g. around +5 t/min of slag in a system having a condensation capacity designed to handle a maximum slag flow rate of 8 t/min,

without any risk of steam backflow in the granulation area.

0) CN202683421U – ADHESIVE INJECTION PRESSURE TANK FOR PERFUSION ...

33) Family number: 52892870 (CN202683421U) © PatBase

Title: ADHESIVE INJECTION PRESSURE TANK FOR PERFUSION PASTING STEEL PLATE CONSTRUCTION

Priority: CN201220293135U 20120621

Family:

Publication number	Publication date	Application number	Application date
CN202683421 U	20130123	CN201220293135U	20120621

Probable Assignee: CCCC FIRST HIGHWAY CONSULTANTS

Assignee(s):(std)**:** CCCC FIRST HIGHWAY CONSULTANTS ; CCCC FIRST HIGHWAY CONSULTANTS CO LTD

Assignee(s): CCCC FIRST HIGHWAY CONSULTANTS CO

Inventor(s):(std)**:** NIU HONG ; YANG DONGSHENG ; ZHAN ANG ; ZHOU JIANG

International class (IPC 8–9): B05C11/10 B05C5/02 E01D22/00 (Advanced/Invention)

Classification Explorer

Forward Citations: CN102688839,

Abstract:
Source: CN202683421U The utility model relates to an adhesive injection pressure tank for perfusion pasting steel plate construction. A great amount of structural adhesive is left in the conventional pressure tank, the volume of the residual structural adhesive in the pressure tank is difficult to judge during the adhesive injection process, and the structural adhesive is slowly added into the pressure tank during the adhesive injection process. A pressure tank body is a transparent glass reinforced plastic tank body, a sealing ring is arranged on a tank opening, and a sealing cover covers the sealing ring; a sealing washer is arranged on an edge between the sealing ring and the sealing cover, and bolt holes are correspondingly formed in each of the sealing ring and the sealing cover which are fastened with each other through bolts; a compression tube is arranged on the upper part of the side wall of a pressure tank body and has a large internal diameter; and an adhesive discharge tube is arranged on the lower part of the side wall of the pressure tank body and has a small internal diameter. The pressure tank body is the transparent glass reinforced plastic tank body. The adhesive injection pressure tank has good sealing performance, the volume of the residual structural adhesive in the pressure tank can be clearly observed, the time for adding the adhesive is short, and the volume of the residual structural adhesive in the adhesive injection pressure tank can be greatly reduced.

0) US2013307218A – PROJECTILE CONTAINMENT SYSTEM

34) Family number: 55190245 (US2013307218A) © PatBase

Title: PROJECTILE CONTAINMENT SYSTEM

Priority: US20120475511 20120518 US20130951864 20130726

Family:

Publication number	Publication date	Application number	Application date
US2013307218 AA	20131121	US20120475511	20120518
US2015028546 AA	20150129	US20130951864	20130726
US8827274 BB	20140909	US20120475511	20120518
US9146083 BB	20150929	US20130951864	20130726

Probable Assignee: BULLET TRAP USA LLC

Assignee(s):(std)**:** BULLET TRAP LLC ; BULLET TRAP USA LLC ; LAMOTHE RICHARD P

Inventor(s):(std)**:** LAMOTHE RICHARD P

Agent(s): MCCORMICK PAULDING AND HUBER LLP

International class (IPC 8–9)**:** F41J13/00 (Advanced/Invention)

CPC: F41J13/00

US class: 1/1 273/410

Classification Explorer

Cited documents: US8827274 BB, US8602418 BA, US8469364 BB, US8128094 BB, US7793937 BB, US7275748 BB, US5822936 A, US5749177 A, US5718434 A, US5535662 A, US5486008 A, US5456155 A, US5400692 A, US5040802 A, US4821620 A, US2012126480 AA, US2010276889 AA, US2007102883 AA, US1992001 A,

Forward Citations: US9146083, US2015028546,

Abstract:
Source: US2013307218A Steel plates loosely mounted in frame, with neoprene pads between the frame and plates to better absorb the noise and impact from projectiles. The plates are inclined having laterally projecting tabs in openings defined by parallel steel side–walls. A containment chamber communicates with downstream ends of inclined plates by a transition area downstream of the inclined plates. Chamber has projectile impact boundary defined by laterally extending vanes or strips of hardened steel. End portions of vanes fit loosely in openings defined by the chamber side–walls. The vanes have beveled edges that abut one another so movement of adjacent vanes occurs in response to one of these vanes being struck by a projectile. Vanes are biased inwardly toward normal, or rest positions, but can move outwardly when impacted by a projectile. The number of vanes selected to establish angles of incidence for adjacent vanes less than 12 degrees in chamber.

0) US2014174080A – HYBRID TRIGENERATION SYSTEM BASED MICROGRID COM...

35) Family number: 56489638 (US2014174080A) © PatBase

Title: HYBRID TRIGENERATION SYSTEM BASED MICROGRID COMBINED COOLING, HEAT AND POWER PROVIDING HEATING, COOLING, ELECTRICAL GENERATION AND ENERGY STORAGE USING AN INTEGRATED AUTOMATION SYSTEM FOR MONITOR, ANALYSIS AND CONTROL

Priority: US20120727108P 20121115 US20130081271 20131115 US20130859377P 20130729 US20130877467P 20130913 US20130886213P 20131003 US20130896039P 20131026 WO2013US70313 20131115 WO2014US36410 20140501 US20150613994 20150204 US20140267580 20140501 US20140926372P 20140112 US20140954178P 20140317 US20140972365P 20140330 US20140010784P 20140611

Family:

Publication number	Publication date	Application number	Application date
AU2015203118 AA	20150709	AU20150203118	20150611
CA2891435 AA	20151211	CA20152891435	20150514
CA2930794 AA	20160513	CA20132930794	20131115
CN104919144 A	20150916	CN201380070520	20131115
CN105257425 A	20160120	CN201510589238	20150611
EP2920432 A2	20150923	EP20130799442	20131115
EP2955372 A2	20151216	EP20150275151	20150610
EP2955372 A3	20160629	EP20150275151	20150610
HK1218148 A1	20170203	HK20160106103	20160530
JP2016000995 A2	20160107	JP20150116207	20150609
JP2016503477 A2	20160204	JP20150542822	20131115
JP2016503477 T2	20160204	JP20150542822T	20131115
US2014174080 AA	20140626	US20130081271	20131115
US2015143806 AA	20150528	US20150613994	20150204
US2015196002 AA	20150716	US20140267580	20140501
US9624913 BB	20170418	US20130081271	20131115
WO14078659 A2	20140522	WO2013US70313	20131115
WO14078659 A3	20150702	WO2013US70313	20131115
WO15105523 A1	20150716	WO2014US36410	20140501

Probable Assignee: FRIESTH KEVIN LEE

Assignee(s):(std)**:** FRIESTH KEVIN ; FRIESTH KEVIN LEE ; KEVIN LEE FRIESTH

Inventor(s):(std)**:** FRIESTH KEVIN ; FRIESTH KEVIN LEE ; KEVIN LEE FRIESTH

Agent(s): SPRUSON AND FERGUSON; BORDEN LADNER GERVAIS LLP; POTTER CLARKSON LLP; HIROE AND ASSOCIATES PATENT PROFESSIONAL CORP; BRIAN J; JESSICA L; BRICK GENTRY PC; LAURENZO BRIAN J

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** A01G31/02 A01G7/04 B29C45/17 C04B7/36 C10B53/00 C10B57/00 C10B57/10 C12M1/00 C12M1/34 C12M1/36 C12P7/06 C12P7/10 C21C5/52 C21D1/32 C22C33/08 C25C3/06 D01F9/12 D01F9/32 F01K13/00 F01K13/02 F01K23/10 F01K25/00 F01K25/10 F01K27/02 F01K3/00 F01K3/02 F01K3/12 F02C1/05 F02G1/043 F02G1/044 F02G1/053 F02G1/055 F02G1/057 F02G5/02 F03D7/04 F03D9/18 F03G4/00 F03G6/00 F03G6/06 F03G7/00 F03G7/04 F03G7/10 F22B1/00 F24J2/00 F24J2/12 F24J3/00 F25B15/00 F25B27/00 F25B27/02 F25B9/14 F28D20/00 H01M8/00 H01M8/04 H01M8/0662 H02J3/28 H02J3/38 H02K7/18 H02S10/10 H02S40/22 H05B37/02 (Advanced/Invention); F01K F02C F03G F22B F28D H02K (Subclass/Invention)

CPC: F03G7/04 F02G1/043 A01G31/02 A01G7/045 H05B37/0245 C12M21/02 C12M21/04 C12M41/06 C12M41/12 C12M41/48 C12M43/00 Y02P20/59 F24J2/07 F24J2/14 F24J2/18 F24J2/461 F24J2/5241 F24J2/541 F24J2002/5462 F28D20/0039 Y02P60/12 F03G7/10 Y02E10/41 Y02E10/45 Y02E10/47 Y02E20/14 Y02E60/142 Y02E70/30 Y02T10/166 A01G1/001 A01G31/00 F03G6/064 F22B1/006 F28D20/00 F28D20/003 F28D2020/0082 F28D2020/0086 Y02E10/52 Y02E50/16 Y02E50/17 Y02P10/138 Y02P60/216 F01K3/02 F01K3/12 F01K23/10 F03G6/067 F03G6/068 F03G6/00 F01K3/00 F01K13/00 F01K13/02 F01K25/00 Y02B10/20 Y02E10/46 Y02P80/15 Y02P80/24 Y02P10/32 Y02P80/25 A01K63/04

US class: 126/694 220/592.2 315/297 47/58.1LS 47/62R 60/516 60/517 60/641.1 60/698 62/331

Classification Explorer

Cited documents: WO11077248 A2, WO11011831 A1, WO10142004 A2, WO10092584 A1, WO10010540 A1, WO09156085 A2, WO07025145 A2, WO04032610 A2, US7877999 BB, US4903503 A, US4642988 A, US4455841 A, US4455826 A, US4094148 A, US3841097 A, US2012100062 AA, US2011131880 AA, US2010218423 AA, US2009313994 AA, US2008194003 AA, US2006130487 AA, GB1530126 A, EP2455591 A2, EP2335813 A1, EP0084815 A2,

Forward Citations: WO16022591, WO16003928, WO15192875, WO15192874, US9481519, US9366182, US9194627, US2016146061, US2016040560, US2015339266, US2015323972, US2015247111, US2015168062, US2015159552, US2014025230, RU2610649, CN106351765,

Abstract:
Source: US2014174080A Provided is a consumer to industrial scale energy trigeneration process based microgrid combined cooling, heat and power. The present invention includes conversion, processing, extraction and/or storage systems for electrical, chemical and thermal energy. The invention provides a quintessential renewable energy ecosystem incorporating vital energy generation, thermal heating and cooling processes with integrated components installed to encompass a distributed renewable energy generation, energy storage and integrated automation system. The automation system of the invention provides the ability to view, monitor, analyze, control and interact with system components.

0) TW201716671A – SAFETY EQUIPMENT FOR STEEL PLATE CONSTRUCTION

36) Family number: 65687491 (TW201716671A) © PatBase

Title:	SAFETY EQUIPMENT FOR STEEL PLATE CONSTRUCTION
Priority:	TW20150137487 20151113

Family:

Publication number	Publication date	Application number	Application date
TW201716671 A	20170516	TW20150137487	20151113

Probable Assignee:	CHIA CHI ENGINERING CO LTD
Assignee(s):	CHIA CHI ENGINERING CO LTD
Inventor(s):	SU MAO HSUAN
International class (IPC 8–9):	E04G21/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: TW201716671A This invention relates to a safety equipment for steel plate construction, which includes a tightwire rack and a positioning base provided on the beam. Said tightwire rack has a base for connecting with the positioning base, and the tightwire rack and the beam are perpendicular to each other by using the positioning base. Said tightwire rack includes a hollow rod with low weight for easily be moved, and inside the top of the rod of the tightwire rack is provided a fixed pulley. Said rod has an arc−shape groove for pass through a tightwire and to let the tightwire be placed on the surface of the fixed pulley for ensuring the tightwire rack will not be rubbed by the tightwire, and then covered a cap on the top of the rod of the tightwire rack for a user can hook a retractable safety rope onto the tightwire. When under the construction, the most lateral of the roof beam can set with two tightwire rack and the roof center or other appropriate place can set with a third tightwire rack, and then provided with a fourth moveable tightwire rack moved by user for cooperating with to the construct progress, to ensure the safety of the user who constructs the steel plate in high place.

37) Family number: 125070 (US3700169A) © PatBase

Title: PROCESS AND APPRATUS FOR THE PRODUCTION OF HYDROELECTRIC PULSED LIQUIDS JETS

Priority: CA19710181941 19711019 US19700082319 19701020 US19720246078 19720420

Family:

Publication number	Publication date	Application number	Application date
AT311909 B	19731210	AT19710009037	19711019
AT318521 B	19741025	AT19720009430	19711019
AU197134733 A1	19730503	AU19710034733	19711015
BE774217 A2	19720214	BE19710774217	19711020
CA939015 A1	19731225	CA19710125505	19711019
CA951749 A1	19740723	CA19710181941	19711019
CA951749 A2	19740723	CA19710181941	19711019
CH553338 A	19740830	CH19710015221	19711018
DE2152003 A1	19720427	DE19712152003	19711019
ES396189 A1	19750201	ES19710396189	19711020
FR2111566 A5	19720602	FR19710037601	19711020
GB1335630 A	19731031	GB19710048476	19711019
NL7114384 A	19720424	NL19710014384	19711019
US3700169 A	19721024	US19700082319	19701020
US3796463 A	19740312	US19720246078	19720420

Probable Assignee: ENVIRONMENT ONE CORP

Assignee(s):(std)**:** ENVIRONMENT ONE CORP

Assignee(s): ENVIRONMENT ONE CORP 2773 BALLTOWN ROAD SCHENECTADY NEW YORK 12309 V S A ; ENVIRONMENT ONE CORP US ; WALTER W AKER ; THEODORE T NAYDAN ; NAYDAN THEODORE T ; AKER WALTER W

Inventor(s):(std)**:** AKER W W ; NAYDAN T T ; T NAYDAN THEODORE ; W AKER WALTER ; NAYDAN T ; AKER W ; ING WALTER W AKER ; ING THEODORE T NAYDAN ; NAYDAN THEODORE T ; AKER WALTER W

Inventor(s): AKER W US ; W W AKER ; T T NAYDAN ; WALTER W AKER ; THEODORE T NAYDAN ; NAYDAN T US

International class (IPC 8–9): B02C19/18 B05B12/06 B21D26/12 B26F3/00 E21B7/18 E21C37/16 E21D9/10 F04F11/00 F04F99/00 G10K15/06 H02N11/00 (Advanced/Invention); B02C19/00 B05B12/00 B21D26/00 B26F3/00 E21B7/18 E21C37/00 E21D9/10 F04F99/00 G10K15/04 H02N11/00 (Core/Invention)

International class (IPC 1–7): B02C19/18 B05B1/00 B05B1/08 B05B17/04 B06B1/02 B21D26/06 E21B7/18 E21C25/60 E21C27/20 E21C37/00 E21C37/12 E21C37/20 F04F1/06 F04F1/16 F15B21/12 F42D1/00 G10K10/00 H01T3/00 H02N H05H1/00

CPC: B02C19/18 B02C2019/183 B05B12/06 B21D26/12 B26F3/004 E21B7/18 E21C37/16 E21D9/1066 F04F99/00 G10K15/06 H02N11/006

European class: B02C19/18 B05B12/06 B21D26/12 B26F3/00C E21B7/18 E21C37/16 E21D9/10G F04F99/00 G10K15/06 H02N11/00C L02C19/18B

US class: 239/102 239/102.2 239/4 299/1.4 299/14 299/17

Classification Explorer

Cited documents: US910500 A, US3521820 A, US3400892 A, US3373752 A, US3306665 A, US3281860 A, US3114654 A, US2881092 A, US2512743 A, US1554723 A, US1284398 A,

Forward Citations: WO9601361, WO9013830, WO11037546, WO06054079, US9416594, US9394776, US9190190, US9056346, US9016359, US9010458, US8667824, US8596349, US8448883, US8220537, US8186808, US8109345, US7063141, US6164388, US5896938, US5810988, US5560543, US5301169, US5123433, US4793734,

US4753549, US4702418, US4081200, US4004737, US3941312, US3900162, US3876251, US3848118, US3826537, US3826536, US2014060804, US2012132466, US2012111080, US2009294121, US2009189956, US2009179093, US2008245568, US2008187418, US2004140097, EP3047913, EP1010466, EP1010466, EA10696, EA012897, EA010696, CN102463282, CN102463282, AU2015202626,

Abstract:
Source: US3700169A Process and apparatus for producing high energy pulsed liquid jets by the discharge of electrical energy through a relatively incompressible liquid in an essentially closed chamber having a shaped outlet nozzle.

0) US4028568A – AC GENERATOR FOR VEHICLES

38) Family number: 1403743 (US4028568A) © PatBase

Title: AC Generator for vehicles

Priority: JP19740124470 19741030

Family:

Publication number	Publication date	Application number	Application date
JP51050404 A2	19760504	JP19740124470	19741030
US4028568 A	19770607	US19750626991	19751029

Probable Assignee: HITACHI LTD

Assignee(s):(std)**:** HITACHI LTD

Inventor(s):(std)**:** OHUCHI YASUSHI ; OOCHI YASUSHI ; TATEMI SHIGEO ; TATSUMI HIDEO

International class (IPC 8–9)**:** H02K1/18 H02K5/00 H02K5/04 (Advanced/Invention)

International class (IPC 1–7)**:** H02K15/16 H02K5/00

CPC: H02K1/185 H02K5/00 H02K5/04

European class: H02K1/18B H02K5/00 H02K5/04

US class: 310/168 310/263 310/410 310/42 310/68R 310/91

Classification Explorer

Cited documents: US3705994 A, US3656017 A, US3626219 A, US3501660 A, US3321654 A, US3305740 A, US3300666 A, US3215878 A, US2423750 A, US2235807 A, US1816859 A, US1490205 A, JP47004406 B4, JP38025519 Y1,

Forward Citations: WO06035126, US9225219, US7591638, US6841906, US5705870, US4908541, US4891567, US4859894, US4585967, US4584495, US4377762, US4360749, US4286186, US2010176684, US2005214140, US2004189121, JP56071049, JP55148956, JP52147709, FR2439499, FR2439498, FR2439496, EP0281811,

Abstract:
Source: US4028568A An ac generator for a vehicle in which a stator frame having a stator core fixed thereto and supporting a rotary shaft therein is composed of a pair of end covers of steel plate and a cylindrical casing of steel plate, and the end covers, cylindrical casing and stator core are integrally connected together by welding so as to ensure a high mechanical strength.

0) US4355588A – TRANSPLANTING MACHINE

39) Family number: 1418141 (US4355588A) © PatBase

Title: TRANSPLANTING MACHINE

Priority: CA19810375040 19810409 EP19810103278 19810430 US19800150486 19800516

Family:

Publication number	Publication date	Application number	Application date
AR227185 A1	19820930	AR19810285145	19810429
AT14267 E	19850815	AT19810103278T	19810430
AU198169505 A1	19811119	AU19810069505	19810414
AU544278 B2	19850523	AU19810069505	19810414
BR8102940 A	19820202	BR19810002940	19810512
CA1141596 A1	19830222	CA19810375040	19810409
DE3171381 D1	19850822	DE19813171381	19810430
EP0040337 A2	19811125	EP19810103278	19810430
EP0040337 A3	19821006	EP19810103278	19810430
EP0040337 B1	19850717	EP19810103278	19810430
IL62680 A0	19810629	IL19810062680	19810417
IL62680 A1	19840629	IL19810062680	19810417
JP57022604 A2	19820205	JP19810073359	19810515
US4355588 A	19821026	US19800150486	19800516

Probable Assignee: BUT ANTLE INC

Assignee(s):(std)**:** BUT ANTLE INC

Assignee(s): CASTLE AND COOKE INC ; CASTLE AND COOKE INC (C AND C) ; CASTLE AND COOKE INC C AND C ; CASTLE AND OOKE INC ; CASTLE AND OOKE INC (SEE DOCUMENT FOR SUBSIDIARIES ; CASTLE AND OOKE INC (SEE DOCUMENT FOR SUBSIDIARIES) ; TECHNICULTURE INC ; CROCKER NATIONAL BANK AS COLLATERAL AGENT FOR SAID ; FIRST NATIONAL BANK OF BOSTON ; CASTLE AND OOKE INC SEE DOCUMENT FOR SUBSIDIARIES ; CROCKER NATIONAL BANK COLLATERAL AGENT FOR SAID CO ; TECHNICULTURE INC A CORP OF CALIFORNIA ; DIAZ INFANTE JAVIER ; HALL DAVID J ; CROCKER NATIONAL BANK COLLATERAL AGENT FOR SAID COMPANIES (SEE DOCUMENT) AS ; CROCKER NATIONAL BANK COLLATERAL AGENT FOR SAID COMPANIES SEE DOCUMENT AS ; ARMSTRONG ERROL C ; BUD ANTLE INC

Inventor(s):(std)**:** ARMSTRONG E ; ARMSTRONG E C ; ARMSTRONG ERROL C ; ARMSTRONG ERROL CLYDE ; DIAZ INFANTE J ; DIAZ INFANTE JAVIER ; HALL D ; HALL D J ; HALL DAVID J ; HALL DAVID JOHN ; EROORU KURAIDO AAMUSUTORONGU ; DEEBITSUDO JON HOORU ; DEEBITSUDO JIYON HOORU ; JIYABIERU DEIAZUUINFUANTO

Inventor(s): JAVIER DIAZ INFANTE ; ERROL CLYDE ARMSTRONG ; DAVID JOHN HALL ; J DIAZ INFANTE ; DJ HALL ; E C ARMSTRONG ; EC ARMSTRONG ; D J HALL

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; FETHERSTONHAUGH AND CO; REINHOLD COHN AND PARTNERS

Designated states: AT BE CH DE FR GB IT LI LU NL SE

International class (IPC 8–9): A01C11/02 (Advanced/Invention); A01C11/02 (Core/Invention)

International class (IPC 1–7): A01C11/00 A01C11/02 A01C5/04 A01C5/06 A01G9/02

CPC: Y10S111/914 A01C11/02

European class: A01C11/02

US class: 111/105 111/109 111/3 111/914

Classification Explorer

Cited documents:

US570905 A, US4215513 A, US4104975 A, US4091751 A, US3906875 A, US3456607 A, US3286858 A, US3128833 A, US3023717 A, US2887075 A, US2831442 A, US1888143 A, US1073702 A, US1026492 A, SU496008 T, JPS356053 B1, JP35006053 B1, GB627358 A, FR2312935 A1, FR2307455 A1, FR1136675 A, FR1091998 A, DE829241 A, DE468367 A, DE2854923 A1, DE2638846 A1, DE2013629 A1, DD112199 Z,

Forward Citations: WO04107843, WO04107843, US7874375, US7472659, US7404364, US7263936, US7249565, US7197992, US6997120, US5577453, US5365693, US5320649, US5160235, US4869637, US4788920, US4750439, US2010083886, US2007272133, US2007131152, US2006123755, US2006118015, US2004244660, NL2006289, EP2491778,

Abstract:
Source: US4355588A A machine for transplanting soil plugs with great uniformity and a minimum of manual labor comprising a conveyor having a plurality of soil plug gripping mechanisms mounted thereto, a furrow opening device, and a furrow closing device. The furrow closing device of the present invention is preferably defined by portions of a bed shaper that operates to form the soil into a trapezoidal planting bed. In addition to the normal function of shaping the bed, the bed shaper establishes a ground level with respect to which the plugs are planted, while the rear portions of the bed shaper act to close the furrow, and include adjustable tabs that may be set to control the timing of the closure relative to the plug positioning. Each plug gripping assembly preferably comprises a center opening clip having opposed resilient fingers. The conveyor path is characterized by a lower horizontal path portion that maintains the plugs at the proper planting depth for a significant interval so that the soil may be properly closed around the plugs before the plugs are released.

0) US6173973B – FORESTRY MACHINE SWING–HOUSE LEVELING MECHANISM...

40) Family number: 14946482 (US6173973B) © PatBase

Title: Forestry machine swing–house leveling mechanism

Priority: CA19992276515 19990625 US19980092207P 19980709 US19990332292 19990611

Family:

Publication number	Publication date	Application number	Application date
AU199936854 A1	20000203	AU19990036854	19990629
AU199936854 A5	20000203	AU19990036854	19990629
AU746994 B2	20020509	AU19990036854	19990629
CA2276515 AA	20000109	CA19992276515	19990625
CA2276515 C	20070619	CA19992276515	19990625
NZ336661 A	20001027	NZ19990336661	19990708
US6173973 BA	20010116	US19990332292	19990611

Probable Assignee: TIMBERJACK INC

Assignee(s):(std)**:** TIMBERJACK INC

Assignee(s): ROBINSON TERRANCE

Inventor(s):(std)**:** ROBINSON TERRANCE ; ROBINSON TERRENCE

Inventor(s): TERRENCE ROBINSON

Agent(s): PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; MCCARTHY TETRAULT LLP

International class (IPC 8–9): A01G23/08 A01G23/081 B60G17/00 B60P1/16 B60P1/18 B62D33/063 B62D33/08 E02F9/02 G05D9/00 G05D9/04 (Advanced/Invention)

International class (IPC 1–7): A01G23/08 A01G23/081 B60G17/00 B60P1/16 B60P1/18 B62D33/08 B62D55/084 G05D9/00 G05D9/04

CPC: B60G2204/162 B60G2300/08 B60G2300/09 B60G2300/32 B60G2800/019 B62D33/063 E02F9/028

European class: B62D33/063 E02F9/02L L60G204/162 L60G300/08 L60G300/09 L60G300/32 L60G800/019

US class: 144/34.1 144/4.1 180/41 280/6.154 414/687

Classification Explorer

Cited documents: US4800936 A, US4763742 A, US4708577 A, US4679803 A, US4650017 A, US4565486 A, US4326571 A, US4256279 A, US3689090 A, US3670834 A, US3658286 A, US3658146 A, US3527435 A, US3233909 A, US3218015 A, US3184867 A, US2523734 A, US2227762 A,

Forward Citations: WO15094072, WO09025831, WO07139878, USD462701, USD455763, USD451933, US9345204, US8862340, US8430621, US8180532, US8028783, US7832740, US7798260, US7699081, US7461712, US7438143, US7325634, US7258393, US7237584, US7204378, US7174932, US7083013, US6923453, US6609581, US6343799, US6241263, US2015367901, US2015314719, US2012073843, US2009314566, US2009157265, US2009118913, US2009115148, US2009060685, US2009050379, US2008087469, US2008087468, US2008041805, US2007289754, US2007107803, US2006289205, US2006162975, US2005011585, US2004221921, US2004168842, US2004051260, US2004033124, KR101100260, KR101032728, JP2014194115, EP2072690, EP2058438, EP2055509, EP1889537, DE102011009310, CN102458968, CN102458968, CN102133907, AU2007267958,

Abstract:
Source: US6173973B A swing–to–tree feller buncher has its boom swing–house assembly adjustably supported from its track carriage frame by a leveling mechanism which includes a front link, a rear link, and a pair of laterally spaced apart hydraulic cylinders. Both links are fixed to the frame toward the front of the carriage and the front link is shorter than the rear link. The upper ends of the hydraulic cylinders connect to the turntable support of the swing–house assembly at a position forward of the rear link and extend rearwardly to connect at their lower ends to the frame of the carriage at a position which is rearward of the rear link. The turntable support is also pivotable from side to side relative to the carriage about a minor axis. Simultaneous extensions and retractions of the

cylinders cause the turntable support to move and tilt longitudinally, about a lateral axis relative to the carriage, and differential extensions of the cylinders cause the turntable support to tilt sideways about a minor, generally longitudinal, axis of the turntable support. The swing–house assembly can also be tilted rearward so as to reduce the overall height of the machine and enable leveling on a downhill slope.

0) US6503112B – CATENARY ANCHOR LEG MOORING BUOY

41) Family number: 15250734 (US6503112B) © PatBase

Title: Catenary anchor leg mooring buoy

Priority: GB19990012366 19990527 WO2000GB02021 20000526

Family:

Publication number	Publication date	Application number	Application date
AU200049380 A5	20001218	AU20000049380D	20000526
EP1180083 A1	20020220	EP20000931426	20000526
GB200012960 A0	20000719	GB20000012960	20000526
GB2350342 A1	20001129	GB20000012960	20000526
GB2350342 B2	20020612	GB20000012960	20000526
GB9912366 A0	19990728	GB19990012366	19990527
NO20015789 A	20020125	NO20010005789	20011127
NO20015789 A0	20011127	NO20010005789	20011127
US6503112 BA	20030107	US20020979835	20020308
WO0073133 A1	20001207	WO2000GB02021	20000526

Probable Assignee: TRIDENT OFFSHORE LTD

Assignee(s):(std)**:** CHADWICK SAMUEL ANDREW ; CUTHILL DUNCAN ; KOBIELA MARTIN LEON ; TRIDENT OFFSHORE LIMITED ; TRIDENT OFFSHORE LTD

Inventor(s):(std)**:** CHADWICK SAMUEL A ; CHADWICK SAMUEL ANDREW ; CUTHILL DUNCAN ; KOBIELA MARIN LEON ; KOBIELA MARTIN L ; KOBIELA MARTIN LEON

Inventor(s): MARTIN LEON KOBIELA ; SAMUEL ANDREW CHADWICK ; DUNCAN CUTHILL

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

International class (IPC 8–9): B63B22/02 B63B22/04 B63B3/08 (Advanced/Invention); B63B22/00 B63B3/00 (Core/Invention)

International class (IPC 1–7): B63B B63B22/02

CPC: B63B3/08 B63B22/026 B63B22/04

European class: B63B22/02B6 B63B22/04 B63B3/08

US class: 441/3

Classification Explorer

Cited documents: US5651709 A, US4449946 A, US4254522 A, US3786525 A, US3541622 A, GB2292360 A1, FR2029884 A5,

Forward Citations: WO14016508, WO12151644, US9334025, US9045199, US2010279561, FR2993855, EP1506920, EP1506920,

Abstract:
Source: US6503112B A catenary anchor leg mooring (CALM) buoy of modular construction comprises an open framework and at least one replaceable buoyancy module. The buoyancy module is mounted to the framework. The CALM buoy also comprises mooring means and fluid application means which are rotatably mounted to the framework via a two–armed turntable. The framework may comprise elongate frame members. Preferably a plurality of buoyancy modules are provided, each detachably mounted in a symmetric configuration within the framework.

0) US4191216A – FABRICATED ORIFICE FITTING MECHANISM FOR PIPELI...

42) Family number: 1554935 (US4191216A) © PatBase

Title: FABRICATED ORIFICE FITTING MECHANISM FOR PIPELINES

Priority: CA19790326402 19790426 US19780923023 19780710 US19790074239 19790910

Family:

Publication number	Publication date	Application number	Application date
CA1126985 A1	19820706	CA19790326402	19790426
DE2925139 A1	19800124	DE19792925139	19790622
DE2925139 C2	19860227	DE19792925139	19790622
FR2431121 A1	19800208	FR19790017718	19790709
FR2431121 B1	19851115	FR19790017718	19790709
GB2024668 A1	19800116	GB19790023762	19790706
GB2024668 B2	19820922	GB19790023762	19790706
IT1122101 A	19860423	IT19790024236	19790710
IT7924236 A0	19790710	IT19790024236	19790710
JP1618176 C3	19910912	JP19790073927	19790612
JP2035192 B4	19900808	JP19790073927	19790612
JP55014386 A2	19800131	JP19790073927	19790612
MX148791 A	19830617	MX19790178334	19790703
US4191216 A	19800304	US19780923023	19780710
US4286364 A	19810901	US19790074239	19790910

Probable Assignee: DANIEL IND INC

Assignee(s):(std)**:** CONNOLLY WALTER L ; DANIEL IND INC

Assignee(s): DANIEL INDUSTRIES INC ; DANIEL INDUSTRIES INC HOUSTON TEX US

Inventor(s):(std)**:** CONNOLLY WALTER L ; UORUTAA ERU KONARII

Inventor(s): WALTER L CONNOLLY ; WALTER LCONNOLLY ; CONNOLLY WALTER L MORAGE CALIF US ; L CONNOLLY WALTER

Agent(s): MEREDITH AND FINLAYSON

International class(IPC 8–9)**:** F16K27/10 F16K3/20 F16L41/00 F16L41/16 F16L55/00 G01F1/36 G01F1/42 G01F15/18 (Advanced/Invention); F16K27/00 F16K3/02 F16L41/00 F16L41/08 F16L55/00 G01F1/34 G01F15/00 (Core/Invention)

International class(IPC 1–7)**:** B05B12/00 B21D51/16 B23K31/00 F15D1/02 F16D1/00 F16K27/10 F16L55/00 F17D1/04 G01F1/36 G01F1/42 G01L

CPC: Y10T29/49425 Y10T137/6065 G01F1/42 F16K3/20 F16K27/105 F16L41/008 F16L41/16

European class: F16K27/10C F16K3/20 F16L41/00J F16L41/16 G01F1/42

US class: 137/315.27 138/44 138/45 138/94 228/182 251/329 251/367 29/157.1R 29/890.131

Classification Explorer

Cited documents: US3905082 A, US3809114 A, US3638908 A, US3348804 A, US3331118 A, US3260503 A, US3239921 A, US3123090 A, US3013770 A, US3000083 A, US2993502 A, US2982514 A, US2964063 A, US2904306 A, US2868495 A, US2720379 A, US2688987 A, US2664098 A, US2448071 A, US2359741 A, US2217216 A, US2065628 A, US2034418 A, US1996192 A, IT423277 A, FR2369483 A1, FR1219303 A, DE948658 A, DE2363484 A1, DE2253261 A1,

Forward Citations: US8167268, US7837176, US7104572, US7104572, US7104521, US7104521, US7063107, US6983759, US6871666, US5421274, US5327938, US5305796, US4506991, US4493558, US4422339, US2010229988, US2005258389, US2005258388, US2005258387, US2005022867, EP0156271, EP0107328,

Abstract:
Source: US4191216A An orifice fitting mechanism for pipeline flow measurement systems includes a fabricated

body structure that is so fabricated that internal and external body plate connection welds may be effectively utilized in order that the body structure will have sufficient structural integrity to withstand the forces of high pressure service. Internal and external welding of the body plates is enhanced through the provision of internal hub rings that define portions of the internal through conduit structure of the body and also define a properly oriented transverse opening that effectively receives an orifice plate carrier assembly in sealed relation therein. The hub rings also provide for close positioning of pressure tap passages as desired for accurate flow measurement. A replaceable valve support mechanism is employed allowing the slide valve system of the orifice fitting to be field replaceable without requiring replacement of either of the upper or lower body sections.

0) GB9604394A – SCREW JACK

43) Family number: 17052210 (GB9604394A) © PatBase

Title: Screw jack

Priority: JP19950001989 19950316 JP19950001989U 19950316 JP19950198995U 19950316

Family:

Publication number	Publication date	Application number	Application date
AU199645756 A1	19961003	AU19960045756	19960227
AU678742 B2	19970605	AU19960045756	19960227
CA2170940 AA	19960917	CA19962170940	19960304
CA2170940 C	19990817	CA19962170940	19960304
DE19609905 A1	19960919	DE19961009905	19960314
DE19609905 C2	20000706	DE19961009905	19960314
GB2298848 A1	19960918	GB19960004394	19960301
GB2298848 B2	19980826	GB19960004394	19960301
GB9604394 A0	19960501	GB19960004394	19960301
JP3019266 U	19951212	JP19950001989U	19950316
TH17798 B	20041020	TH19961000717	19960311
TH25708 A	19970624	TH19961000717	19960311
ZA9601777 A	19961210	ZA19960001777	19960305

Probable Assignee: KAWASAKI IND CO LTD

Assignee(s):(std)**:** KAWASAKI IND CO ; KAWASAKI IND CO LIMITED ; KAWASAKI IND CO LTD

Assignee(s): KAWASAKI INDUSTRIAL CO ; KAWASAKI INDUSTRIAL CO LIMITED ; KAWASAKI INDUSTRIAL CO LTD ; KAWASAKI INDUSTRIAL CO LTD SHIMADA SHIZUOKA JP

Inventor(s):(std)**:** KAWASAKI YASUJI ; YASUJI KAWASAKI

Inventor(s): KAWASAKI YASUJI SHIMADA SHIZUOKA JP

Agent(s): FISHER ADAMS KELLY; FISHER ADAMS KELLY PTY LTD; FISHER ADAMS KELLY CALLINANS

International class (IPC 8–9): B66F3/08 B66F3/10 B66F3/16 (Advanced/Invention); B66F3/00 (Core/Invention)

International class (IPC 1–7): B66F B66F3/08 B66F3/10 B66F3/16

CPC: B66F3/08 B66F3/10 B66F3/16

European class: B66F3/08 B66F3/10 B66F3/16

Classification Explorer

Cited documents: US5123629 A, US4000880 A, US2054025 A, GB388584 A, GB372871 A, GB307859 A, EP0216959 A1, EP0019284 B1,

Forward Citations: AU746415,

Abstract:
Source: DE19609905A1 A screw jack has a case body (1) of aluminium or hard resin material mounted on a bed (2) having a bearing recess (2a) formed in its central area. A large bevel gear (5) mounted on a main threaded shaft (4) is supported by a thrust bearinq (3) and meshes with a small bevel gear (6). The threaded portion of the main threaded shaft (4) engages a threaded portion (8a) formed on an inner side of an auxiliary threaded sleeve (8), and a threaded portion (8b) formed on an outer periphery of the auxiliary threaded sleeve (8) engages a threaded portion of a heavy object raising inner sleeve (9). The sleeve (9) has a load receiving metal piece (11) and a vertical groove (9b) engaged by a portion (10a) of an outer sleeve (10) formed by bending a planar sheet into a tubular shape and joining the opposite edges to form a flange (10b). The flange (10b) is fitted in a groove of the body (1) to prevent rotation of the inner sleeve (9). On rotation of the bevel gearing and shaft (4), the auxiliary sleeve (8) and inner sleeve (9) guided by the outer sleeve and load piece 11 are lifted.

0) GB695763A – MACHINE TOOLS FOR MACHINING ARTICLES HAVING HOL...

44) Family number: 20553123 (GB695763A) © PatBase

Title: Machine tools for machining articles having holed annular flanges and the like

Family:

Publication number	Publication date	Application number	Application date
GB695763 A	19530819	GB19510020368	19510829

Probable Assignee: STANFORD ROBERTS MFG COMPANY

Assignee(s):(std)**:** STANFORD ROBERTS MFG COMPANY

Assignee(s): THE STANFORD ROBERTS MANUFACTURING COMPANY ; STANFORD ROBERTS MFG CO

International class (IPC 8–9): B23B7/12 (Advanced/Invention)

International class (IPC 1–7): B23B7/02 C07C87/45

CPC: B23B7/12

European class: B23B7/12

Classification Explorer

Abstract:
Source: GB695763A 695,763. Drilling and turning wheel hubs; chucks. STANFORD–ROBERTS MANUFACTURING CO. Aug. 29, 1951 [Feb. 5, 1951], No. 20368/51. Classes 83 (ii) and 83 (iii). [Also in Group XXXVII] A machine tool for operating on workpieces having holed annular flanges such as wheel hubs 259 comprises a power–driven chuck 30, a stop block 206 on a rotary part of the chuck, a stop member 202 movable by motor means 198 into the path of the block, and control means for, operating the motor means. The machine tool, described ae a semiautomatic lathe, comprises transverselymovable slides 33, 37 on either side of the central chuck unit 30. The lathe bed, which is of arc–welded steel plate construction, carries the transverse slide 33 bearing longitudinally–movable tool slides 34, 35, the chuck unit 30, and a saddle 36 bearing a transverse slide 37. The chuck unit 30 comprises three jaws 93, Fig. 8, sliding in cylindrical bushed holes 71 in a member 64 rotated by a sprocket wheel 61. The jaws are controlled by wedge surfaces on a sliding ring 73 engaging T–slots in the jaws. The ring 73 is actuated by a yoke 106 pivoted at 109 to a hydraulic piston 104 and at 107 to the block 30, and connected at 112 to a non–rotating ring 81. The chuckrotating sprocket wheel 61 is driven by an electric motor 150, Fig. 12, which also rotates a plugging switch relay 156. Also mounted on the block 30, Fig. 13, are a tool–slide 145 reciprocated by hydraulic means 146 and a V–plate 161 bored with two holes 164 with which may be registered two holes 165 in the chuck member 64. For stopping the chuck, the switch device 202, Fig. 6, is lowered, by the air piston 198, to present an actuating roller 205 in the path of the adjustable cam–plate 206. The piston 198 is lowered when the plugging switch 156 is actuated and the momentum of the parts carries the chuck round until stopped by the switch 203. If, for any reason, the switch 202 is not positively actuated, a torque motor 153, Fig. 12, is energized to carry the chuck round to the correct position. The cross slide 37, Figs. 3 and 14, carries two tool holders 170, 171 and drilling and reaming units 221, 222, rotated by an electric motor 217. It is reciprocated by a piston 250 between stops 175, 176 and is located in the two intermediate machining positions by an air–operated plunger 182 engaging recesses in the base of the slide. Rods 223 extending from the units 221, 222 engage the aligned holes 164, 165 in the chuck to position the drills and reamers in relation to the work. Spring–pressed devices 224, Fig. 4, cushion the engagement of the units with the chuck and also support the toolspindles during machining. The drills are combined with countersinking means. The transverse slide 33, Fig. 4, is guided by a dovetail 227 engaged by gibs 230, 231 and by sidebearing surfaces 228, 229. The slide 33, Fig. 3, and the tool units 34, 35 are reciprocated by hydraulic pistons 236, 239, 242. For producing the wheel–hub 259, the slides 34 and 170 and a top slide 145, Fig. 8, are first advanced for roughing operations, slides 35 and 171 follow for finishing operations and the drilling and reaming units are then advanced successively. The drills and reamers are reversed before they are withdrawn. Each machine operation can be controlled individually by push–buttons or the machine may be operated semi–automatically. In the latter case, the operator first starts a hydraulic motor, a coolant motor and the drill motor. He then closes the chuck and operates the cycle start switch. The machining operations then follow automatically. When the work is finished, the operator opens the chuck. The hydraulic pistons may be replaced by worm or rack gearing rotated by electric motors.

0) ZA9808877A – AN ELECTRIC POWER PLANT

45) Family number: 20685707 (ZA9808877A) © PatBase

Title: AN ELECTRIC POWER PLANT

Priority: SE19970003548 19970930 WO1998SE01734 19980929

Family:

Publication number	Publication date	Application number	Application date
AU199893705 A1	19990423	AU19980093705	19980929
AU736272 B2	20010726	AU19980093705	19980929
BRPI9812572 A	20000725	BR1998PI12572	19980929
CA2305418 AA	20000330	CA19982305418	19980929
CN1278371 A	20001227	CN19988009663	19980929
EP1020005 A2	20000719	EP19980946756	19980929
IL134817 A0	20010520	IL19980134817	19980929
JP2001518776 T2	20011016	JP20000514378T	19980929
KR20010052082 A	20010625	KR20007003464	20000330
NO20001594 A	20000328	NO20000001594	20000328
NO20001594 A0	20000328	NO20000001594	20000328
PL339948 A1	20010115	PL19980339948	19980929
SE9703548 A	19990331	SE19970003548	19970930
SE9703548 A0	19970930	SE19970003548	19970930
SE9703548 L	19990331	SE19970003548	19970930
WO9917426 A2	19990408	WO1998SE01734	19980929
WO9917426 A3	19990805	WO1998SE01734	19980929
ZA9808877 A	19990330	ZA19980008877	19980929

Probable Assignee: ASEA BROWN BOVERI

Assignee(s):(std)**:** BERGGREN BERTIL ; GERTMAR LARS ; HOELLELAND MONS ; LEIJON MATS ; TEMPLIN PETER ; KARLSSON THOMMY ; SOERENSEN ERLAND ; NYGREN JAN ANDERS ; ABB AB ; ASEA BROWN BOVERI

Assignee(s): ASEA BROWN BOVERI A B ; ASEA BROWN BOVERI AB ; SORENSEN ERLAND ; HOLLELAND MONS

Inventor(s):(std)**:** BERGGREN BERTIL ; BERTIL BERGREN ; ERLAND SOERENSEN ; GERTMAR LARS ; HOELLELAND MONS ; JAN ANDERS GERTMAR ; NYGREN JAN ANDERS ; PETER TEMPLIN ; SOERENSEN ERLAND ; TEMPLIN PETER ; THOMMY KARLSSON ; SORENSEN ERLAND ; SCHLETT HANS WERNER ; KARLSSON THOMMY ; LARS GERTMAR ; LEIJON MATS ; MATS LEIJON ; MONS HOELLELAND ; HOLLELAND MONS ; GERTMAR JAN ANDERS ; BERGREN BERTIL ; HEELELAND MONS

Inventor(s): HANS WERNER SCHLETT ; MONS HEELELAND ; ERLAND SORENSEN ; BERTIL BERGGREN ; MONS HOLLELAND ; JAN ANDERS NYGREN

Agent(s): COLLISON AND CO; GOWLING LAFLEUR HENDERSON LLP; MOTOMIYA TERUHISA; FUJINO IKUO; TAKANASHI NORIMICHI; UBUKATA KAZUO; KATO NOBUAKI; TAKAHASHI SEIICHIRO; OCHI TAKAO; USUI SHINICHI; OKABE MASAO; YOSHIZAWA HIROSHI; ASAHI NOBUMITSU

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): H02J11/00 H02J3/00 H02J9/06 H02J9/08 H02K19/34 H02K19/36 H02K19/38 H02K3/28 H02K3/30 H02K3/40 H02P9/42 (Advanced/Invention); H02J11/00 H02J9/06 H02J9/08 H02K3/28 H02K3/40 (Advanced/Non–invention); H02J11/00 H02J3/00 H02J9/06 H02J9/08 H02K19/16 H02K3/00 H02K3/28 H02K3/32 H02P9/00 (Core/Invention)

International class (IPC 1–7): H02J11/00 H02J9/06 H02J9/08 H02K19/34 H02K19/38 H02K3/28 H02K3/30 H02K3/40 H02P9/42

CPC: H02J3/00 H02K3/40 H02K19/34 H02K19/36 H02K19/365 H02K2203/15

European class: H02J3/00 H02K19/34 H02K19/36 H02K19/36B H02K3/40 T02K203/15

Classification Explorer

Cited documents: US5036165 A, US4785138 A, US4510077 A, US4121148 A, JP59076156 A2, JP59076156, DE4022476 A1, DE3006382 A1,

Forward Citations: WO17025664, WO11059425, WO11050303, US9300131, US7141908, US7061133, US7046492, US7045704, US7019429, US6995646, US6972505, US6970063, US6940380, US6936947, US6919664, US6906447, US6894416, US6891303, US6885273, US6873080, US6867674, US6831388, US6828701, US6825585, US6822363, US6801421, US6646363, US6577487, US6525504, US6525265, US6465979, US6439497, US6429563, US6417456, US6396187, US6376775, US6369470, US6357688, US6279850, US6261437, US2012181862, KR20110096139, KR101702864, GB2358298,

Abstract:
An electric power plant comprises at least one electric machine (2, 4, 6, 8) of alternating current type designed to be connected directly to a distribution or transmission network and comprising at least one electric winding. The winding of the machine comprises at least one electric conductor, a first layer with semiconducting properties surrounding the conductor, a solid insulating layer surrounding the first layer and a second layer with semiconducing properties surrounding the insulating layer. Auxiliary power means (10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40) are arranged to provide the requisite auxiliary power. The procedure in such a plant is also described.

0) DE1988035U – BLECH–, PROFILSTAHLSCHERE OD. DGL. PLATE, ANGLE...

46) Family number: 21241312 (DE1988035U) © PatBase

Title: BLECH–, PROFILSTAHLSCHERE OD. DGL. PLATE, ANGLE SHEAR OD. DGL. (Machine translation)

Priority: DE1968M061755U 19680315

Family:

Publication number	Publication date	Application number	Application date
DE1988035 U	19680620	DE1968M061755U	19680315

Probable Assignee: MUHR AND BENDER

Assignee(s):(std)**:** MUHR AND BENDER

Assignee(s): FA MUHR UND BENDER

International class (IPC 1–7)**:** B23D23/00

Abstract:
Source: DE1988035U (Claim 1) 1. Notorisch betriebene Blech–,]?rofilstahlschere od. dgl. in Stahlplattenkonstruktion mit einem ange– triebeneng in einer Vertikalebene arbeitenden Scherenschlitten einerseits so–wie einem, von einer–vom Scherenschlitten abgeleiteten Antriebsbewegung getriebener und in einer geneigten Ebene zum Scherenschlitten arbeitenden Profilschlitten anderseits,–wobei beide.Schlitten mit ihren seitlichen Breitflaechen auf Gleitstopfen in einem plattenfoermigen Maschinenkoerper und einer hiermit verschraubten Deckplatte verschiebebeweglich abgestuetzt

Machine translation: (claim 1) 1? Notoriously driven plate,] rofilstahlschere or the like in steel plate construction with an integrally–triebeneng in a vertical plane working shears slide one hand as well as one, from one–by shears slide derived driving movement driven and in a plane inclined to the shears slide working profile slide on the other hand, – where beide.Schlitten with their lateral sliding plug in a plattenfoermigen Breitflaechen on machine body and a cover plate that are bolted to move mobile Supported

0) US2051334A – REEL FOR MOVING PICTURE FILMS

47) Family number: 21366722 (US2051334A) © PatBase

Title:	REEL FOR MOVING PICTURE FILMS
Priority:	US19340749896 19341025

Family:

Publication number	Publication date	Application number	Application date
US2051334 A	19360818	US19340749896	19341025

Probable Assignee:	GOLDBERG JACOB M
Assignee(s):(std):	GOLDBERG JACOB M
Inventor(s):(std):	GOLDBERG JACOB M
International class (IPC 8–9):	G03B21/32 (Advanced/Invention); G03B21/32 (Core/Invention)
International class (IPC 1–7):	G03B21/54
CPC:	G03B21/321
European class:	G03B21/32B
US class:	242/609.1 242/613.4 242/614.1

Classification Explorer

Forward Citations: US3883087, US2653775, US2494612,

Abstract:
Source: US2051334A _ In order to prevent relative rotation between the spindle of the rewind apparatus and the reel, the latter ls provided with a noncircular opening for the reception of the rewind spindle, and in this drawing the central opening has been desig– nated by reference numeral l5 and has been indicated as being substantially rectangular and provided with outwardly extending projections li. The spindle that cooperates with the reel is' formed so as to fit the opening and therefore relative rotation cannot take place. 'l'he_ strain produced by the rewind apparatus is usually sumcient to very quickly wear away the aluminum , of which the hub members or_slde plates are made, but by applying to the inside of each hub is in ner a steel plate ll, this steel plate resists the force produced by the operation oi the rewind apparatus and prevents the rapid wear that would otherwise take place lt the aluminum hub members were left unreenrorced. The rims I are transversely concave as shown in Fig. 4 and the spokes 'I are also transversely concave as shown in Fig. 5, so as to give strength to the construction. – From the above description. token in connection with the drawing, it will appear that the con– ' struction permits substantially all of the reel to be made' from light aluminum, and hy reenlorcing the hub members or side plates ll at the points wherewear usually takes place, the advantage of aluminum, as far as weight is concerned, can be _ retained and at the same time all the_advnntages of a heavy steel plate construction can be ` hadasiaraswearreslstinapropertlesoreoondarned. » _ _gt;

0) US4809851A – COLLAPSIBLE CONTAINER

48) Family number: 2882861 (US4809851A) © PatBase

Title: Collapsible container

Priority: AU19880014169 19880405 US19870034027 19870403

Family:

Publication number	Publication date	Application number	Application date
AU198814169 A1	19881006	AU19880014169	19880405
AU199188368 A1	19920123	AU19910088368	19911202
EP0286271 A2	19881012	EP19880302540	19880323
EP0286271 A3	19890607	EP19880302540	19880323
JP1023944 A2	19890126	JP19880082877	19880404
JP64023944 A2	19890126	JP19880082877	19880404
US4809851 A	19890307	US19870034027	19870403

Probable Assignee: WORLD CONTAINER CORP

Assignee(s):(std)**:** WORLD CONTAINER CORP

Assignee(s): WORLD CONTAINER A CORP OF MINNESOTA CORP

Inventor(s):(std)**:** JIERARUDO EFU OOSUTORAIKU ; OESTREICH GERALD F ; OESTREICH GERALD F JR ; OESTREICH JR GERALD F ; PRICE WILLIAM F ; UIRIAMU EFU PURAISU

Inventor(s): WILLIAM F PRICE ; GERALD F OESTREICH JR

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD

Designated states: DE FR GB IT NL

International class (IPC 8–9): B65D19/12 B65D19/18 B65D21/02 B65D6/24 (Advanced/Invention); B65D19/02 B65D21/02 B65D6/16 (Core/Invention)

International class (IPC 1–7): B65D19/12 B65D19/16 B65D19/18 B65D21/02 B65D27/00 B65D6/16 B65D6/24

CPC: B65D21/0217 B65D7/32 B65D19/12 B65D2519/00034 B65D2519/00069 B65D2519/00174 B65D2519/00184 B65D2519/00208 B65D2519/00268 B65D2519/00288 B65D2519/00338 B65D2519/00422 B65D2519/00497 B65D2519/00517 B65D2519/00611 B65D2519/00661 B65D2519/00711 B65D2519/00965

European class: B65D19/12 B65D21/02E7 B65D7/32 L65D519/00Y1B4 L65D519/00Y1C4 L65D519/00Y1F4 L65D519/00Y1F6 L65D519/00Y1G4 L65D519/00Y2A1 L65D519/00Y2B1 L65D519/00Y2C4B L65D519/00Y2E11F L65D519/00Y2F1 L65D519/00Y2F6 L65D519/00Y3B1D L65D519/00Y3C1D L65D519/00Y3E1 L65D519/00Y4K2C

US class: 206/511 206/599 206/600 220/4.31 220/4.33

Classification Explorer

Cited documents: US4673087 A, US4643314 A, US4503973 A, US4376593 A, US4171059 A, US4120551 A, US4050604 A, US4000827 A, US3974616 A, US3940007 A, US3853238 A, US3797691 A, US3655087 A, US3397496 A, US3386218 A, US3374915 A, US3332319 A, US3315800 A, US3288319 A, US3266656 A, US2978136 A, US2952379 A, US2202675 A, US1991965 A, US1355213 A, US1114321 A, FR2554086 A1, FR2128054 A1, DE2520519 A1,

Forward Citations: WO9416954, WO08122074, WO06091609, WO06091609, WO03043900, WO0061881, USD611342, USD610001, US9617065, US9557209, US9371179, US9332814, US9149099, US9079684, US8978912, US8887914, US8820558, US8689992, US8616370, US8342356, US8235217, US8109402, US8061538, US8028849, US8016145, US8002134, US7757876, US7497347, US7422124, US7347328, US7204397, US7028859, US7004344, US6966449, US6761277, US6634541, US6450123, US6308830, US6266972, US6170689, US6131376, US6089393, US6085932, US6029839, US6021916, US5996828, US5953858, US5924572, US5865315, US5829595, US5803295, US5797508, US5794414, US5738216, US5730295, US5711444, US5704508, US5641068, US5638973, US5601202, US5558241, US5548972, US5542541, US5542237, US5539956, US5456061,

US5419448, US5328048, US5318219, US5310063, US5289933, US5263701, US5248051, US5236099, US5215205, US5170933, US5161709, US5146732, US5131212, US5086927, US5070577, US5056666, US5036979, US4969567, US4944404, US4936476, US2017127838, US2015321443, US2015153218, US2014261533, US2014197168, US2014157730, US2012152798, US2011240513, US2011186475, US2011139674, US2010282136, US2010239730, US2010175596, US2010018966, US2009183785, US2009152222, US2009101640, US2008283583, US2008203089, US2008190922, US2008135566, US2008135547, US2008093428, US2008083765, US2007256953, US2007246466, US2007101646, US2007089681, US2006266747, US2006186118, US2006045682, US2005167308, US2005017001, US2004256385, US2004211803, US2004200832, US2004139924, US2004129699, US2003222080, US2003209549, US2002139798, KR200467998, KR101308147, KR100639398, JP7230993, JP7000823, JP4254149, JP2012041059, GB2352266, GB2352266, FR3016350, FR2967976, FR2966439, FR2913008, FR2805521, FR2751618, ES2397035, ES2159212, EP2894107, EP2492205, EP1616803, EP1500610, EP0928745, EP0759400, EP0510353, CN103395540, CN102633033,

Abstract:
Source: US4809851A A collapsible container having a rigid construction including a base and upstanding sides which can be disassembled and stacked upon the base for storage. The base is provided with a generally flat supporting surface with a plurality of legs with mortises arranged to extend downward from the planar base support surface to receive and lock tenons attached to upstanding sides. The plurality of legs are spaced about the periphery of the base so that a container in either an assembled or collapsed position may be easily supported by a forklift or other such material−handling unit. Upstanding sides with tenons inserted into mortise elements of the unit are held in substantially erect position with the edges of the upstanding sides having tongue and groove connectors. Two of the sides are provided with grooves at the edges with the other two sides providing tongue elements at the edges and receivable into the grooves to provide a rigid and positive corner construction. Locking corner caps are attached to the upper edge of one of the sides of either the tongue or groove side. The locking L−shaped corner caps engages the upper edge of two corner sections of the adjacent side and lock the two sides together. The corner caps further includes a flange to engage legs of another container for vertical stacking. The upstanding sides of the container are vertically ribbed and may be re−enforced to increase the columnar strength of the unit.

0) WO9929016A1 – A METHOD OF REPAIRING A WINDING SYSTEM INCLUDIN...

49) Family number: 30269742 (WO9929016A1) © PatBase

Title: A METHOD OF REPAIRING A WINDING SYSTEM INCLUDING SPLICING A HIGH–VOLTAGE CABLE

Priority: SE19970004452 19971128 WO1998SE02164 19981127

Family:

Publication number	Publication date	Application number	Application date
AU199915164 A1	19990616	AU19990015164	19981127
AU737267 B2	20010816	AU19990015164	19981127
CA2309978 AA	20000515	CA19982309978	19981127
CN1279836 A	20010110	CN19988011500	19981127
EP1034602 A1	20000913	EP19980959344	19981127
IS5508 A	20000525	IS20000005508	20000525
NO20002718 A	20000706	NO20000002718	20000526
NO20002718 A0	20000526	NO20000002718	20000526
PL340702 A1	20010226	PL19980340702	19981127
SE9704452 A0	19971128	SE19970004452	19971128
TR200001506 T2	20000921	TR20000001506T	19981127
WO9929016 A1	19990610	WO1998SE02164	19981127

Probable Assignee: ASEA BROWN BOVERI

Assignee(s):(std): ABB AB ; ASEA BROWN BOVERI ; CARSTENSEN PETER ; LEIJON MATS

Assignee(s): ASEA BROWN BOVERI A B ; ASEA BROWN BOVERI AB

Inventor(s):(std): CARSTENSEN B ; CARSTENSEN PETER ; LEIJON M ; LEIJON MATS

Inventor(s): M LEIJON ; MATS LEIJON ; PETER CARSTENSEN ; B CARSTENSEN

Agent(s): E F WELLINGTON AND CO; ROBIC

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): H02K15/00 H02K3/30 H02K3/38 H02K3/40 (Advanced/Invention); H02K15/00 H02K3/32 (Core/Invention)

International class (IPC 1–7): H02K3/30 H02K3/38

CPC: H02K3/40 H02K15/0006 H02K2203/15

European class: H02K15/00A H02K3/40 T02K203/15

Classification Explorer

Cited documents: US5327637 A, US4785138 A, JP9200989, EP0375101 A1,

Forward Citations: US7642667, US7478777, US7436097, US7432610, US7141908, US7061133, US7046492, US7045704, US7019429, US6995646, US6972505, US6970063, US6940380, US6936947, US6919664, US6906447, US6894416, US6891303, US6885273, US6873080, US6867674, US6831388, US6828701, US6825585, US6822363, US6801421, US6646363, US6577487, US6525504, US6525265, US6465979, US6439497, US6429563, US6417456, US6396187, US6376775, US6369470, US6357688, US6279850, US6261437, FR2853780,

Abstract:
The present invention relates to a method of repairing a winding system in a rotary electric machine for high voltages, which machine is designed for direct connection to a distribution or transmission network and comprises a stator (20), a rotor and windings (30) included in the winding system. The windings (30) comprise high–voltage cables that substantially contain the electric field in the windings (30). The method comprises the step of, in the event of damage to the high–voltage cable, splicing the high–voltage cable in such a manner that at least one part of at least one original coil–end bend is converted to at least one substantially straight portion after the splicing,

wherein at least one join is arranged outside the original coil−end bundle, which splicing is performed without dismantling the rotary electric machine.

0) US5638652A – CONCRETE–FILLED STEEL BEARING WALL

50) Family number: 30273531 (US5638652A) © PatBase

Title: Concrete–filled steel bearing wall

Priority: JP19910202963 19910813 JP19910202964 19910813 JP19910202965 19910813 US19950502143 19950713 US19950502144 19950713 US19950387356 19950213 US19920928482 19920812

Family:

Publication number	Publication date	Application number	Application date
CN1045809 C	19991020	CN19921010643	19920813
CN1071986 A	19930512	CN19921010643	19920813
GB2258669 A1	19930217	GB19920017207	19920813
GB2258669 B2	19950426	GB19920017207	19920813
GB9217207 A0	19920923	GB19920017207	19920813
JP2502218 B2	19960529	JP19910202963	19910813
JP2502219 B2	19960529	JP19910202964	19910813
JP2670199 B2	19971029	JP19910202965	19910813
JP5044282 A2	19930223	JP19910202963	19910813
JP5044283 A2	19930223	JP19910202964	19910813
JP5044357 A2	19930223	JP19910202965	19910813
KR970007962 B1	19970519	KR19920014564	19920813
TW299381 B	19970301	TW19920106264	19920807
US5638652 A	19970617	US19950502144	19950713
US5653082 A	19970805	US19950502143	19950713

Probable Assignee: MITSUBISHI HEAVY IND LTD

Assignee(s):(std)**:** KAJIMAKENSESSE KK ; KAZIMA KENSETSU KK ; MITSUBISHI HEAVY IND LTD ; MITSUBISHI HEAVY IND KK ; KAJIMA CONSTRUCTION CORP ; KAJIMA CORP

Assignee(s): KAJIMA KENSETSU KK ; MITSUBISHI JUKOGYO KK ; MITSUBISHI JUKOGYO K K ; MITSUBISHI HEAVY IND CO LTD ; MITSUBISHI HEAVY INDUSTRY CO LTDJP

Inventor(s):(std)**:** AKIMOTO SHIGEYUKI ; AKIMOTO SIKEYUKI ; ASAMURA TADAFUMI ; ASAMURA TADEHUMI ; HARA KIYOSH ; HARA KIYOSHI ; HARA KYOSHI ; HISASHI SEKIMOTO ; KOKUBO AEGE ; KOKUBO EIJI ; MATSUO ICHIPEI ; MATSUO IPPEI ; MATSUO ITSUPEI ; NAKANISHI KAZUO ; NAKANISI KAZUO ; OKUDA TAIZO SHINODA YUTAKA ; OKUDA YUTAKA ; OKUTA YUTAKA ; SEKIMOTO HISASHI ; SHINODA TAIZO ; SINODA TAIJO ; TAIZO SHINODA ; TAIZO SHINODA YUTAKA OKUDA ; YABUUCHI AKIO ; YABUUJI AKKIO ; YUTAKA OKUDA ; AKIMOTO NARIYUKI

Inventor(s): AKIMOTO NARYUKI ; EIJI KOKUBO ; AKIO YABUUCHI ; TADAFUMI ASAMURA ; SHIGEYUKI AKIMOTO ; KIYOSHI HARA ; KAZUO NAKANISHI ; IPPEI MATSUO ; YABUCHI AKIO

International class (IPC 8–9): E04B1/16 E04B1/92 E04B2/86 E04H9/02 G21C13/024 G21C13/093 G21F1/00 (Advanced/Invention); E04B2/86 (Advanced/Non–invention); E04B1/92 G21F1/00 (Core/Non–invention)

International class (IPC 1–7): E04B1/16 E04B1/30 E04B1/92 E04B2/00 E04B2/58 E04B2/84 E04B2/86 E04H9/02 G21F1/00

CPC: E04B1/161 E04B2/8635 E04B2/8647 G21C13/024 G21C13/093 G21Y2002/302 G21Y2004/301 Y02E30/40

European class: E04B1/16A G21C13/024 G21C13/093 P04B2/86G P04B2/86H S21Y2/302 S21Y4/301 Y02E30/40

US class: 264/261 52/250 52/319 52/334 52/379 52/414 52/426 52/431 52/432 52/741.13 52/742.14 52/742.15 52/745.19 524/140

Classification Explorer

Cited documents:

US5140794 A, US5131201 A, US5092093 A, US4936540 A, US4934121 A, US4676035 A, US4594830 A, US4433520 A, US4133156 A, US4038793 A, US4018055 A, US3186131 A, US2412253 A, US2050290 A, JP61254727 A2, JP6047140 A2, JP60047140 A2, JP59116090 A2, JP57021651 A2, GB1413330 A, CH63264 A,

Forward Citations: WO9526856, WO05113235, WO0148327, USD713975, US9631363, US9548140, US8919067, US8887465, US8522507, US7861479, US7065930, US6484460, US6460305, US2013295340, US2013272485, US2010132291, US2006185282, US2005082460, TWI409400, JP9032108, JP5860049, JP2013532766, JP2007537900, EP2167750, EP2167750, CN104989031, CN104074285, CN103866883, CN103688003, CN102915782, CN102277964, CN102168455,

Abstract:
Source: US5638652A A concrete−filled steel bearing earthquake resistant wall which has combined resistance to shearing forces exerted in the surface plane thereof has connecting members (1), a pair of surface steel plates (2 and 2') arranged in parallel spaced relationship to each other and secured by the connecting members (1) so that the space between these surface steel plates is filled with the wall unit concrete (7), and wall unit periphery binding steel reinforcements (8) constructed from inverted U−shaped steel bars or similar material and arranged along the peripheral part of the wall unit at predetermined intervals so as to be embedded in the concrete (7). Slippage preventing members (6) are arranged in a staggered arrangement on the aforementioned surface steel plates (2 and 2'). Belt−shaped steel members (11) may be attached to one end of the connecting members (1) which are planted on one side (2a) of one of the surface steel plates (2), and the other surface steel plate member (2') is connected by plug welding (13, 13') to belt−shaped steel members (11).

- **search:** SS10 FT=steel plate construction and concrete (Results 30)
- List: SS10 1−50 (FT=steel plate construction and concrete) (Results 30)

0) US6554199B – TRACKWAY FOR TRANSRAPID

1) Family number: 28514400 (US6554199B) © PatBase

Title: Trackway for transrapid

Priority: US20000680712 20001006

Family:

Publication number	Publication date	Application number	Application date
US6554199 BA	20030429	US20000680712	20001006

Probable Assignee: FLESSNER PROFESSOR DR HERMANN C

Assignee(s):(std)**:** PFLEIDERER INFRASTRUKTURT GMBH ; PFLEIDERER INFRASTRUKTURTECHNI

Assignee(s): PFLEIDERER INFRASTRUKTURTECHNICK GMBH AND CO ; PFLEIDERER INFRASTRUKTURTECHNICK GMBH AND CO KG ; PFLEIDERER INFRASTRUKTURTECHNIK GMBH ; RAILONE GMBH ; PFLEIDERER INFRASTRUKTURTECHNIK GMBH AND CO KG ; FLESSNER PROFESSOR DR HERMANN C

Inventor(s):(std)**:** FLESSNER HERMANN C ; MOHR WINFRIED ; WERNER ROLF J

International class (IPC 8–9)**:** E01B25/30 (Advanced/Invention); E01B25/00 (Core/Invention)

International class (IPC 1–7)**:** E01B3/14

CPC: E01B25/305

European class: E01B25/30B

US class: 238/115

Classification Explorer

Cited documents: US5850794 A, US5231931 A, US5027713 A, DE4115936 A1, DE29809580 U1, DE2980958, DE19619866 A1,

Forward Citations: US7357084, US7182023, US2010242786, US2006089444, US2005166786, US2005034628, US2004237830, US2004221761, AU775146,

Abstract:
Source: US6554199B Trackway for land traffic vehicles, preferably for magnetic levitation tracks, with pre−assembled trackway beams arranged on substructures produced by in situ concrete construction or pre−assembled construction. The trackway beams include one or more hollow, reinforced longitudinal pre−stressed concrete beams and trackway panels, which extend transversely to the pavement and protrude on both sides beyond the pre−stressed concrete beams. The trackway panels are separate components from the concrete beams. The concrete beams are constructed as pre−stressed concrete supporting pipes produced by molding concrete by centrifugal action and have flat upper supporting shoulders for supporting the trackway panels.

0) DE19808328A1 – CIVIL ENGINEERING COMPLEX FOR WATER POWER GENER...

2) Family number: 30271173 (DE19808328A1) © PatBase

Title: Civil engineering complex for water power generation incorporating buildings and water treatment

Priority: DE19981008328 19980227 DE19981057246 19981211 DE19981059275 19981222
DE19991000547 19990102 DE19991000960 19990109 DE19991004412 19990120
DE19991023322 19990521 DE19991030820 19990703 DE19991004642 19990205

Family:

Publication number	Publication date	Application number	Application date
DE19808328 A1	19990902	DE19981008328	19980227
DE19857246 A1	20000615	DE19981057246	19981211
DE19859275 A1	20000629	DE19981059275	19981222
DE19900547 A1	20000706	DE19991000547	19990102
DE19900960 A1	20000713	DE19991000960	19990109
DE19904412 A1	20000803	DE19991004412	19990120
DE19904642 A1	20000810	DE19991004642	19990205
DE19923322 A1	20001123	DE19991023322	19990521
DE19930820 A1	20010104	DE19991030820	19990703

Probable Assignee: SCHLEICH

Assignee(s):(std)**:** SCHLEICH ; SCHLEICH JOSEF

Inventor(s):(std)**:** SCHLEICH JOSEF

International class (IPC 8–9)**:** E02B8/02 E02B9/00 F03B13/08 (Advanced/Invention); C02F3/04 (Advanced/Non–invention); E02B8/00 E02B9/00 F03B13/00 (Core/Invention); C02F3/04 (Core/Non–invention)

International class (IPC 1–7)**:** E02B9/00 F03B13/08

CPC: E02B9/00 Y02W10/15 F03B13/08 C02F3/04 E02B8/02 E02B8/023 E02B8/026 Y02E10/22

European class: E02B8/02 E02B8/02B E02B8/02B2 E02B9/00 F03B13/08 M02F3/04 Y02E10/22

Classification Explorer

Forward Citations: WO03054386, WO02055884, WO0125626, US9163421, US8092675, US7083377, US6798080, EP2420669, EP2420669, EP1980669, EP1923510, EP1466089, DE102013009099, CN102777310, CN102776873, AU2002366862,

Abstract:
Source: DE19808328A1 Numerous constructional features include an earth–covered turbine hall (1), a spillway (3) with split control gates without superstructure and fixed dams (22) with planted–up stone ramps (5). The river bed (25) is widened (24) and single span bridges (14) and access points (6, 7) are constructed of pre–formed concrete or steel and synthetic stone. Special office and residential buildings (15, 16), purification plants (17, 18, 19) and silos (15a) are included. Various forms of submerged spillway gates (3) using curved vanes are described. The turbine inlet grating is a series of horizontal cables. The power turbine (1) can be of curved vane construction or use the bucket elevator principle. A further alternative shown is a flexible inflatable water wheel. Building and bridge construction uses shaped hollow concrete blocks and curved sheet steel. The power generated is used locally in the buildings (15, 16) and sewage is purified (17, 18, 19) and returned (20) to the stream.

0) EP1048784A2 – TRACK FOR MAGNETICALLY LEVITATED VEHICLE FAHRWE...

3) Family number: 28920301 (EP1048784A2) © PatBase

Title: Track for magnetically levitated vehicle

Priority: CA20002323977 20001019 DE19991019703 19990430 DE20005012800 20000419

Family:

Publication number	Publication date	Application number	Application date
AT327382 E	20060615	AT20000108482T	20000419
CA2323977 AA	20020419	CA20002323977	20001019
DE19919703 A1	20001116	DE19991019703	19990430
DE19919703 C2	20010523	DE19991019703	19990430
DE50012800 D1	20060629	DE20005012800	20000419
EP1048784 A2	20001102	EP20000108482	20000419
EP1048784 A3	20001227	EP20000108482	20000419
EP1048784 B1	20060524	EP20000108482	20000419
TW509741 B	20021111	TW20000122533	20001026

Probable Assignee: PFLEIDERER INFRASTRUKTURT GMBH

Assignee(s):(std)**:** PFLEIDERER INFRASTRUKTURT GMBH ; PFLEIDERER INFRASTRUKTURTECHNIK GMBH AND CO KG ; PFLEIDERER VERKEHRSTECHNIK

Assignee(s): PFLEIDERER VERKEHRSTECHNIK GMBH AND ; PFLEIDERER VERKEHRSTECHNIK GMBH AND CO KG ; WERNER ROLF J ; CO KG ; FLESSNER HERMANN C ; MOHR WINFRIED

Inventor(s):(std)**:** MOHR WINFRIED ; MOHR WINFRIED DIPL ING ; WERNER ROLF J ; WERNER ROLF J DIPL KFM DR ING ; FLESSNER HERMANN C ; FLESSNER HERMANN C PROF DR ING

Inventor(s): FLESSNER HERMANN C PROFDRING ; WERNER ROLF J DIPL KFMDRING

Agent(s): FETHERSTONHAUGH AND CO

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

International class (IPC 8–9): B28B1/20 B28B21/30 E01B25/00 E01B25/30 E01D2/00 (Advanced/Invention); B28B1/00 B28B21/02 E01B25/00 E01D2/00 (Core/Invention)

International class (IPC 1–7): B28B21/30 E01B25/00 E01B25/30 E01B25/32 E01D101/28 E01D2/00

CPC: B28B1/20 E01B25/305 E01D2/00 E01D2101/28

European class: B28B1/20 E01B25/30B E01D2/00 P01D101/28

Classification Explorer

Cited documents: GB561400 A, FR2746824 A1, FR1045807 A, DE4115936 A1, DE29809580 U1, DE2434125 B1, DE19619866 A1, DE1180387 B,

Forward Citations: WO07062646, WO07062646, WO05049921, WO04063466, WO04022852, WO04001766, WO04001766, WO03102304, WO03025285, WO03025285, WO03023144, WO02075051, WO02075051, US7574963, US7357084, US7182023, US6951433, US6785945, US6782832, EP1694920, EP1597434, EP1441066, EP1428933, DE20210554, DE10353949, DE10240808, DE10239661, DE10237176, DE10237176, DE10228387, DE10217460, DE10215668, DE102010048819, DE102010026586, DE102005057380, DE102005057380, DE102005011838, DE10110613, DE10110613,

Abstract:
Travel way plates (3) are manufactured as separate components and designed with prestressed concrete stay pipes (2) of unequ lengths and made from single plate sections with correspondingly short lengths. The concrete stay pipes have flat upper support shoulders (5). Pre−assembled support units have one or more hollow reinforced longitudinal supports.

0) US5638652A – CONCRETE–FILLED STEEL BEARING WALL

4) Family number: 30273531 (US5638652A) © PatBase

Title: Concrete–filled steel bearing wall

Priority: JP19910202963 19910813 JP19910202964 19910813 JP19910202965 19910813 US19950502143 19950713 US19950502144 19950713 US19950387356 19950213 US19920928482 19920812

Family:

Publication number	Publication date	Application number	Application date
CN1045809 C	19991020	CN19921010643	19920813
CN1071986 A	19930512	CN19921010643	19920813
GB2258669 A1	19930217	GB19920017207	19920813
GB2258669 B2	19950426	GB19920017207	19920813
GB9217207 A0	19920923	GB19920017207	19920813
JP2502218 B2	19960529	JP19910202963	19910813
JP2502219 B2	19960529	JP19910202964	19910813
JP2670199 B2	19971029	JP19910202965	19910813
JP5044282 A2	19930223	JP19910202963	19910813
JP5044283 A2	19930223	JP19910202964	19910813
JP5044357 A2	19930223	JP19910202965	19910813
KR970007962 B1	19970519	KR19920014564	19920813
TW299381 B	19970301	TW19920106264	19920807
US5638652 A	19970617	US19950502144	19950713
US5653082 A	19970805	US19950502143	19950713

Probable Assignee: MITSUBISHI HEAVY IND LTD

Assignee(s):(std)**:** KAJIMAKENSESSE KK ; KAZIMA KENSETSU KK ; MITSUBISHI HEAVY IND LTD ; MITSUBISHI HEAVY IND KK ; KAJIMA CONSTRUCTION CORP ; KAJIMA CORP

Assignee(s): KAJIMA KENSETSU KK ; MITSUBISHI JUKOGYO KK ; MITSUBISHI JUKOGYO K K ; MITSUBISHI HEAVY IND CO LTD ; MITSUBISHI HEAVY INDUSTRY CO LTDJP

Inventor(s):(std)**:** AKIMOTO SHIGEYUKI ; AKIMOTO SIKEYUKI ; ASAMURA TADAFUMI ; ASAMURA TADEHUMI ; HARA KIYOSH ; HARA KIYOSHI ; HARA KYOSHI ; HISASHI SEKIMOTO ; KOKUBO AEGE ; KOKUBO EIJI ; MATSUO ICHIPEI ; MATSUO IPPEI ; MATSUO ITSUPEI ; NAKANISHI KAZUO ; NAKANISI KAZUO ; OKUDA TAIZO SHINODA YUTAKA ; OKUDA YUTAKA ; OKUTA YUTAKA ; SEKIMOTO HISASHI ; SHINODA TAIZO ; SINODA TAIJO ; TAIZO SHINODA ; TAIZO SHINODA YUTAKA OKUDA ; YABUUCHI AKIO ; YABUUJI AKKIO ; YUTAKA OKUDA ; AKIMOTO NARIYUKI

Inventor(s): AKIMOTO NARYUKI ; EIJI KOKUBO ; AKIO YABUUCHI ; TADAFUMI ASAMURA ; SHIGEYUKI AKIMOTO ; KIYOSHI HARA ; KAZUO NAKANISHI ; IPPEI MATSUO ; YABUCHI AKIO

International class (IPC 8–9): E04B1/16 E04B1/92 E04B2/86 E04H9/02 G21C13/024 G21C13/093 G21F1/00 (Advanced/Invention); E04B2/86 (Advanced/Non–invention); E04B1/92 G21F1/00 (Core/Non–invention)

International class (IPC 1–7): E04B1/16 E04B1/30 E04B1/92 E04B2/00 E04B2/58 E04B2/84 E04B2/86 E04H9/02 G21F1/00

CPC: E04B1/161 E04B2/8635 E04B2/8647 G21C13/024 G21C13/093 G21Y2002/302 G21Y2004/301 Y02E30/40

European class: E04B1/16A G21C13/024 G21C13/093 P04B2/86G P04B2/86H S21Y2/302 S21Y4/301 Y02E30/40

US class: 264/261 52/250 52/319 52/334 52/379 52/414 52/426 52/431 52/432 52/741.13 52/742.14 52/742.15 52/745.19 524/140

Classification Explorer

Cited documents:

US5140794 A, US5131201 A, US5092093 A, US4936540 A, US4934121 A, US4676035 A, US4594830 A, US4433520 A, US4133156 A, US4038793 A, US4018055 A, US3186131 A, US2412253 A, US2050290 A, JP61254727 A2, JP6047140 A2, JP60047140 A2, JP59116090 A2, JP57021651 A2, GB1413330 A, CH63264 A,

Forward Citations: WO9526856, WO05113235, WO0148327, USD713975, US9631363, US9548140, US8919067, US8887465, US8522507, US7861479, US7065930, US6484460, US6460305, US2013295340, US2013272485, US2010132291, US2006185282, US2005082460, TWI409400, JP9032108, JP5860049, JP2013532766, JP2007537900, EP2167750, EP2167750, CN104989031, CN104074285, CN103866883, CN103688003, CN102915782, CN102277964, CN102168455,

Abstract:
Source: US5638652A A concrete−filled steel bearing earthquake resistant wall which has combined resistance to shearing forces exerted in the surface plane thereof has connecting members (1), a pair of surface steel plates (2 and 2') arranged in parallel spaced relationship to each other and secured by the connecting members (1) so that the space between these surface steel plates is filled with the wall unit concrete (7), and wall unit periphery binding steel reinforcements (8) constructed from inverted U−shaped steel bars or similar material and arranged along the peripheral part of the wall unit at predetermined intervals so as to be embedded in the concrete (7). Slippage preventing members (6) are arranged in a staggered arrangement on the aforementioned surface steel plates (2 and 2'). Belt−shaped steel members (11) may be attached to one end of the connecting members (1) which are planted on one side (2a) of one of the surface steel plates (2), and the other surface steel plate member (2') is connected by plug welding (13, 13') to belt−shaped steel members (11).

5) Family number: 64062890 (WO16187482A1) © PatBase

Title: SELF–CONSOLIDATING CONCRETE CONSTRUCTION WITH SELF–ROUGHENING PROPERTIES

Priority: US20150163772P 20150519

Family:

Publication number	Publication date	Application number	Application date
WO16187482 A1	20161124	WO2016US33373	20160519

Probable Assignee: GEORGIA TECH RES INST

Assignee(s):(std)**:** GEORGIA TECH RES INST

Assignee(s): GEORGIA TECH RESEARCH CORP

Inventor(s):(std)**:** KAHN LAWRENCE ; KURTIS KIMBERLY E

Agent(s): SCHNEIDER RYAN A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): C04B14/02 C04B20/00 C04B28/00 C04B28/02 C04B40/00 (Advanced/Invention)

CPC: C04B28/02 C04B2111/00103 C04B2111/00612 Y02W30/92

Classification Explorer

Cited documents: WO12139587 A1, US2007079733 AA, GB2512606 A1, GB228538 A,

Abstract:
Adding a small amount of lightweight course aggregate to a normal weight concrete mix to produce a clean, rough top surface so that manual or mechanical roughing of the top surface is not necessary. The lightweight course aggregate will float to the surface, and make a rough surface so that the bond and shear resistance of the interface (cold joint) between previously placed and newly placed concrete will be as strong as a manually roughened joint.

0) AU777666B – TRAVEL WAY FOR LAND TRANSPORT SYSTEMS

6) Family number: 23325928 (AU777666B) © PatBase

Title: Travel way for land transport systems

Priority: AU20000066551 20001016

Family:

Publication number	Publication date	Application number	Application date
AU200066551 A5	20020418	AU20000066551D	20001016
AU777666 B2	20041028	AU20000066551	20001016

Probable Assignee: PFLEIDERER INFRASTRUKTURT GMBH

Assignee(s):(std)**:** PFLEIDERER INFRASTRUKTURT GMBH ; PFLEIDERER INFRASTRUKTURTECHNI ; PFLEIDERER INFRASTRUKTURTECHNIK GMBH AND CO KG

Assignee(s): RAILONE GMBH

Inventor(s):(std)**:** FLESSNER HERMANN C ; HERMANN C FLESSNER ; MOHR WINFRIED ; ROLF J WERNER ; WERNER ROLF J ; WINFRIED MOHR

Agent(s): E F WELLINGTON AND CO

International class (IPC 8–9)**:** E01B25/30 E01B25/32 (Advanced/Invention); E01B25/00 (Core/Invention)

International class (IPC 1–7)**:** E01B25/30 E01B25/32

Classification Explorer

Cited documents: US5850794 A, US5231931 A, US5027713 A,

Abstract:
Source: AU777666B Structural support system for traffic systems of all kinds, preferably for MSB (magnetic levitation trains) such as TRANSRAPID for example, with pre–fabricated travel way trusses containing at least one hollow reinforced pre–stressed concrete longitudinal girder projected by the track plate on both sides and placed on substructures produced either in the site–mixed concrete method or as pre–cast concrete elements, whereby the pre–stressed concrete longitudinal girders are finished as pre–stressed concrete stay pipes produced by way of the centrifugal concrete s moulding production technique with flat upper support collars for the transversely placed continuous track plates, produced as separate elements. oss 0ss ***000 0 0000 0 0 o

0) US5779435A – LOW–PRESSURE STEAM TURBINE

7) Family number: 10724020 (US5779435A) © PatBase

Title: Low–pressure steam turbine

Priority: DE19951023923 19950630 DE19965009737 19960606

Family:

Publication number	Publication date	Application number	Application date
DE19523923 A1	19970102	DE19951023923	19950630
DE19523923 C2	20030918	DE19951023923	19950630
DE59609737 D1	20021107	DE19965009737	19960606
EP0751283 A2	19970102	EP19960810367	19960606
EP0751283 A3	19990324	EP19960810367	19960606
EP0751283 B1	20021002	EP19960810367	19960606
JP3863596 B2	20061227	JP19960166388	19960626
JP9013913 A2	19970114	JP19960166388	19960626
US5779435 A	19980714	US19960644461	19960510

Probable Assignee: ALSTOM TECHNOLOGY LTD

Assignee(s):(std)**:** ABB MANAGEMENT AG ; ALSTOM ; ASEA BROWN BOVERI

Assignee(s): ASEA BROWN BOVERI AG ; ALSTOM TECHNOLOGY LTD ; ABB MANAG AG ; ALSTOM PARIS ; ABB MANAGEMENT AG BADEN AARGAU CH ; ABB MANAGEMENT AGCH

Inventor(s):(std)**:** HAINRITSUHI RAAGEDAA ; LAGEDER HEINRICH ; RITTER URS ; URUSU RITSUTAA

Inventor(s): RITTER URS STUESSLINGEN CH ; LAGEDER HEINRICH BADEN CH

Designated states: DE FR GB IT

International class (IPC 8–9)**:** F01D25/16 F01D25/22 F01D25/24 F01D25/26 F01D25/28 F01K11/02 F01K7/18 (Advanced/Invention); F01D25/00 F01D25/16 F01D25/24 F01D25/28 F01K11/00 F01K7/00 (Core/Invention)

International class (IPC 1–7)**:** F01D25/16 F01D25/22 F01D25/24 F01D25/26 F01D25/28 F01K11/02 F01K7/18 F01K9/00 F01K9/02 F28B1/02

CPC: F01D25/24 F01D25/26 F01D25/28

European class: F01D25/24 F01D25/26 F01D25/28

US class: 184/106 248/679 415/108 415/126 415/176 415/177 415/213.1 415/214.1 415/215.1 415/229 60/692

Classification Explorer

Cited documents: US5290146 A, US5094588 A, US4866941 A, US3628884 A, US3520634 A, EP0594499 A1, EP0575642 A1, EP0384200 A1, EP0206135 A1, DE2115900 A1, DE1034924 B,

Forward Citations: WO15014681, WO12098804, WO11120786, US9291068, US8821110, US7640724, US6971842, US2013177443, US2012282089, US2012156010, US2007169485, US2005063821, KR101536485, JP6087803, JP5766835, JP5766447, JP2015124634, JP2014098395, JP2012149577, FR2772423, EP2832959, EP2551471, EP2551471, EP2372111, EP1707750, EP1046789, DE19715492, DE19715492, CN104204415, CN103140652, CN102242646, CN102242646,

Abstract:
Source: US5779435A The object of the invention is to increase the efficiency of a low–pressure steam turbine connected to a condenser and to reduce its cost of manufacture. According to the invention this is achieved when the dividing plane (8) of the top and bottom part (6, 7) of the outer casing (1) of the low–pressure steam turbine lies at the level of the axis (9) of the turbine rotor (4) and the concrete foundation (14) reaches up to the dividing plane (8). Both the bottom part (7) of the outer casing (1) and the bearing points (10) of the turbine rotor (4) are secured in the concrete foundation (14). The outer casing (1) is designed to be open at least on one side at right angles to and horizontally to the axis (9) of the turbine rotor (4). A condenser (16) is attached to each lateral opening (17) in the outer casing (1). The top part (6) of the outer casing (1) consists of an assembly hood (19) and, for each condenser (16), a frame part (20) connected to the latter and the bottom part (7) by retention of self substance or in a non–positive manner. The assembly hood (19) is connected to both the bottom part (7) of the

outer casing (1) and each frame part (20) in a non–positive or positive–locking manner, one frame part (20) each being arranged between a condenser (16) and the assembly hood (19).

8) Family number: 17804832 (FR2259953A) © PatBase

Title: CONCEALED SHUTTERING FOR CONCRETE WALLS – PRODUCES SANDWICH WALL CONSTRUCTION WITH OUTER CONCRETE PANEL AND INNER PLASTER–BOARD WITH STEEL TIE BARS

Priority: DE19740003573U 19740202

Family:

Publication number	Publication date	Application number	Application date
DE7403573 U	19740829	DE19740003573U	19740202
FR2259953 A1	19750829	FR19750002786	19750129
FR2259953 B1	19761231	FR19750002786	19750129
NL7501213 A	19750805	NL19750001213	19750131
ZA7500662 A	19760128	ZA19750000662	19750131

Probable Assignee: MOELLER AND FOERSTER

Assignee(s):(std)**:** MOELLER AND FOERSTER ; PAPE W ; PAPE WILHELM ; WILHELM LOUIS PAPE ; WILHELM LOUIS PAPE TE TOSTEDT EN FIRMA ER AND FO

Assignee(s): WILHELM LOUIS PAPE TE TOSTEDT EN FIRMA ER AND FOER ; WILHELM LOUIS PAPE TE TOSTEDT EN FIRMA ER AND FOERSTER TE HAMBURG BONDSREPUBLIEK LAND ; PAPE WILHELM DT

Inventor(s):(std)**:** PAPE W ; ZIPELIUS R

International class (IPC 8–9)**:** E04B2/86 (Advanced/Invention); E04B2/86 (Core/Invention)

International class (IPC 1–7)**:** E04B2/86

CPC: E04B2/8635 E04B2/8652

European class: E04B2/86G E04B2/86J

Classification Explorer

Forward Citations: FR2523177, FR2441700, DE8711086, DE4331698, DE102006002277, DE102006002277,

Abstract:
Source: FR2259953A (Claim 1) R E V E N D I C A T I O N S REVE NDI C:A: TI O NS f.– Coffrage perdu servant a la realisation de murs, dans lesquels le noyau est en beton leger coule en place, caracterise en ce que le coffrage exterieur est en beton leger, notamment en beton leger arme. The shuttering system consists of a light weight concrete panel (2) on the outer surface and a plasterboard panel (4) on the inner surface. These are linked by a steel plate reinforcement (8) with steel hooks (10) which clamp round steel rods (12), to which are also connected tie–bars (14) forming part of an H–section support (16) for the plaster–board. The space between the two may subsequently be filled by a wet cement. The layer thickness are typically 6 cm, 20 cm, and 2.5 cm with densities of 1300, 1200 and 800 kg/cu. m. for the outer, middle and inner (plaster) layers respectively. The construction gives good thermal insulation in all climatic regions.

0) US6009821A – DOUBLE BOTTOM HULL FOR TANK SHIP

9) Family number: 11974216 (US6009821A) © PatBase

Title: Double bottom hull for tank ship

Priority: US19980116053 19980715

Family:

Publication number	Publication date	Application number	Application date
US6009821 A	20000104	US19980116053	19980715

Probable Assignee: SAUDI ARABIAN OIL CO

Assignee(s):(std)**:** SAUDI ARABIAN OIL CO

Assignee(s): SAUDI ARABIAN OIL COMPANY

Inventor(s):(std)**:** AL RAMMAH FOUAD ABDUL KARIM ; SCOTT THOMAS J

International class (IPC 8–9)**:** B63B25/08 B63B3/62 B63B9/04 (Advanced/Invention); B63B25/00 B63B3/00 B63B9/00 (Core/Invention)

International class (IPC 1–7)**:** B63B3/00

CPC: B63B3/62 B63B9/04 B63B25/082 B63B2231/60 Y02T70/80

European class: B63B25/08L B63B3/62 B63B9/04 L63B231/60 Y02T70/80

US class: 114/65.00A 114/65A 114/74.00A 114/74A

Classification Explorer

Cited documents: US5160215 A, US4759397 A, US4715307 A, US4359951 A, US4301006 A, US4263862 A, US3895594 A, US3566824 A, US3457890 A, US3298345 A, US3136135 A, US3064612 A, US2715378 A, US2454403 A, US1240129 A, JP59184084 A2,

Forward Citations: WO05095196, WO04050468, WO04005124, US9291308, US7278365, US7223457, US7077071, US6907836, US6790537, US6770374, US6708636, US2012012473, US2007095266, US2006162279, US2005204982, US2004237865, US2004118330, KR101273923, KR100914841, GB2395690, GB2395690, FR2847497, EP1725445, EP1422017,

Abstract:
Source: US6009821A A new tank ship, or an older ship which might not otherwise be economically retrofitted to comply with current regulations, is provided with a double hull requiring essentially no internal steel structural support by distributing and compacting sand in the bottom of the tank or cargo hold, applying a layer of reinforced concrete to the sand, laying steel plates on the surface of the cured concrete and welding the abutting edges of the plates to the hull, interior bulkheads, and to each other, to form a second fluid–tight bottom in the tank. The construction method can be used to retrofit older tankers to comply with Regulation 13G of MARPOL.

0) CN104912206A – SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUM...

10) Family number: 60363643 (CN104912206A) © PatBase

Title: SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUMN–I–SHAPED STEAL BEAM FRAMEWORK NODE

Priority: CN201510288317 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104912206 A	20150916	CN201510288317	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** LIU JIEPENG ; LIU JINGCHEN ; XU CHUANGZE ; YANG YUANLONG ; ZHOU XUHONG

International class (IPC 8–9): E04B1/58 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, CN202544241 U, CN202139694 U, CN201433512 Y, CN103541512 A,

Abstract:
Source: CN104912206A The invention discloses a special–shaped concrete filled steel tube column–I–shaped steal beam framework node. The invention aims at solving the problems of strict anti–seismic design requirement and poor anti–seismic performance of a conventional reinforced concrete special–shaped column framework node, improving design indexes of the maximum use height and the column shaft compression ratio of a special–shaped column structure house and further promoting the use of the special–shaped column structure in a high–fortification–intensity region, and provides the special–shaped concrete filled steel tube column–I–shaped steal beam framework node. In order to reduce the relatively high steel consumption of the special–shaped concrete filled steel tube column and framework node and solve the local buckling problem of a column steel tube and a node steel plate, construction measures of installing pulling steel bar reinforcing ribs inside a special–shaped steel tube and installing vertical rib plates in beam column connecting positions are used; the constraint effect of the special–shaped steel tube on the concrete is improved; the bearing capability of a special–shaped concrete filled steel tube is further improved; meanwhile, the capability of the node for transmitting the internal force of the beam post is improved; and the anti–seismic capability of the special–shaped column framework node is further improved.

0) EP2963206B1 – TURM, INSBESONDERE FUER STROMLEITUNGEN TOWER, ...

11) Family number: 61319670 (EP2963206B1) © PatBase

Title: TURM, INSBESONDERE FUER STROMLEITUNGEN TOWER, IN PARTICULAR FOR POWER LINES

Priority: EP20140175878 20140704

Family:

Publication number	Publication date	Application number	Application date
EP2963206 A1	20160106	EP20140175878	20140704
EP2963206 B1	20170524	EP20140175878	20140704

Probable Assignee: EUROPOLES GMBH AND CO KG

Assignee(s):(std)**:** EUROPOLES GMBH AND CO KG

Inventor(s):(std)**:** KASTNER ROLAND ; LIEB HELMUT

Agent(s): LINDNER BLAUMEIER PATENT U RECHTSANWAELTE; DR GASSNER AND PARTNER MBB

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9): E04H12/12 E04H12/16 E04H12/34 (Advanced/Invention)

CPC: E04H12/16 E04H12/12 E04H12/341

Classification Explorer

Cited documents: WO09099360 A1, EP2647782 A1, DE972002 A, AU1037276 A1,

Abstract:
Source: EP2963206A1 Turm (1), insbesondere fuer Stromleitungen, umfassend: – ein Fundament (14); – mehrere auf dem Fundament (14) uebereinander angeordnete, in Schleuderbetonbauweise hergestellte Turmsegmente (2, 9, 23), die einen Hohlraum (7) umschliessen, der nach der Montage der Turmsegmente (2, 9, 23) teilweise mit Ortbeton (6) gefuellt ist; und – in dem verbleibenden Hohlraum (7) angeordnete, eine Vorspannung erzeugende Spannstaehle (8). Tower (1), in particular for power lines, comprising: – a base (14); – More on the foundation (14) arranged above one another, produced in spun−concrete construction tower segments (2, 9, 23), which enclose a cavity (7), which after assembling the tower sections (2, 9, 23) partly with in−situ concrete (6) is filled; and – in the remaining cavity (7) arranged bias generating Spannstaehle (8) .

0) CN106545034A – REVERSED HORIZONTAL CONSTRUCTION JOINTS OF EXTE...

12) Family number: 65284681 (CN106545034A) © PatBase

Title: Reversed horizontal construction joints of exterior wall plate water stop concrete placement method (Machine translation)

Priority: CN201510592006 20150917

Family:

Publication number	Publication date	Application number	Application date
CN106545034 A	20170329	CN201510592006	20150917

Probable Assignee: CHINA 20TH METALLURGICAL GROUP CO LTD

Assignee(s): CHINA 20TH METALLURGICAL GROUP CO LTD

International class (IPC 8–9): E02D15/02 E02D29/16 E02D31/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN106545034A Construction of the external wall of the present invention relates to reverse. A inverse practices outside wall level construction sewing plate check water with concrete pouring method, including: in Shang a Board outside wall support die stage, Yu outside wall template bottom interval 2~3M level distance reserved holes; making corresponding size and not including both inside and outside side, and end of side of three surface wood party box fill into Shang a Board outside wall template bottom, and external template fixed; Xia a Board outside wall template support nursing stage, in holes peripheral support nursing brake shoulder template, template inside distance hole side side 3~5cm; support die completed Hou, since hole at pouring Xia a Board outside wall concrete Shi, Concrete diagonal flow, combined with vibration, concrete filled water stop steel inside and outside the space of density; entrance at ? local water, apply waterproof glue or swelling water stop realization of next Board in exterior wall of concrete after you have reached a certain coagulation effect, removed template, complete upper and lower Board in exterior wall for horizontal construction joint of concrete water stop steel plate construction. Sealing effect of the invention even better, considerable cost savings.

0) DD293508A – VERFAHREN ZUR AUFBEREITUNG VON SPANNBETONSCHWEL...

13) Family number: 6120157 (DD293508A) © PatBase

Title: VERFAHREN ZUR AUFBEREITUNG VON SPANNBETONSCHWELLEN UND STABFOERMIGEN BETONELEMENTEN ZUR WIEDERVERWENDUNG DES BEWEHRUNGSSTAHLES UND DES BETONBRUCHS PROCEDURE FOR THE TREATMENT OF TENSION CONCRETE SLEEPERS AND BAR–SHAPED CONCRETE ELEMENTS FOR REUSE OF THE REINFORCING STEEL AND CONCRETE FAILURE (Machine translation)

Priority: DD19900339722 19900412

Family:

Publication number	Publication date	Application number	Application date
DD293508 A5	19910905	DD19900339722	19900412

Probable Assignee: BERLIN TIEFBAU VEB

Assignee(s):(std)**:** BERLIN TIEFBAU VEB

Assignee(s): VEB KOMBINAT TIEFBAU BERLIN DE

Inventor(s):(std)**:** RADLOFF GUENTER ; RICHTER LOTHAR ; SEILER MARITA

Inventor(s): SEILER MARITA DE ; RICHTER LOTHAR DE ; RADLOFF GUENTER DE

International class (IPC 8–9): B02C1/04 B02C23/00 E01B3/34 (Advanced/Invention); B02C1/00 B02C23/00 E01B3/00 (Core/Invention)

International class (IPC 1–7): B02C1/04 B02C23/00 E01B3/34

Classification Explorer

Forward Citations: GB2415926, GB2340771, GB2340771,

Abstract:
Source: DD293508A [Source: Claim 1] 1 Seite Zeichnungen [Source: claim 1] 1 page drawings

0) DE102013100176B4 – TURM, INSBESONDERE FUER STROMLEITUNGEN

14) Family number: 56879124 (DE102013100176B4) © PatBase

Title: TURM, INSBESONDERE FUER STROMLEITUNGEN

Priority: DE201310100176 20130109

Family:

Publication number	Publication date	Application number	Application date
DE102013100176 A1	20140710	DE201310100176	20130109
DE102013100176 B4	20141002	DE201310100176	20130109

Probable Assignee: EUROPOLES GMBH AND CO KG

Assignee(s):(std)**:** EUROPOLES GMBH AND CO KG

Inventor(s):(std)**:** KASTNER ROLAND ; LIEB HELMUT

International class (IPC 8–9)**:** E04H12/12 E04H12/16 E04H12/34 (Advanced/Invention)

CPC: E04H12/16 E04H12/185 E04H12/12 E04H12/341 E04H12/342

Classification Explorer

Cited documents: WO11157476 A2, DE19528999 A1,

Abstract:
Source: DE102013100176B4 Turm (1), insbesondere fuer Stromleitungen, umfassend: – ein Fundament (14); – mehrere auf dem Fundament (14) uebereinander angeordnete, in Schleuderbetonbauweise hergestellte Turmsegmente (2, 9, 23), die einen Hohlraum (7) umschliessen, der nach der Montage der Turmsegmente (2, 9, 23) teilweise mit Ortbeton (6) gefuellt ist; und – in dem verbleibenden Hohlraum (7) angeordnete, eine Vorspannung erzeugende Spannstaehle (8).

0) JP2003147859A – STEEL PLATE CONSTRUCTION FOR SC METHOD, AND SC ...

15) Family number: 28654836 (JP2003147859A) © PatBase

Title: STEEL PLATE CONSTRUCTION FOR SC METHOD, AND SC METHOD USING THEREOF

Priority: JP20010351895 20011116

Family:

Publication number	Publication date	Application number	Application date
JP2003147859 A2	20030521	JP20010351895	20011116

Probable Assignee: TOSHIBA PLANT KENSETSU CO LTD

Assignee(s):(std)**:** TOSHIBA PLANT KENSETSU CO LTD

Inventor(s):(std)**:** MATSUZAKI HIROMITSU

International class (IPC 8–9)**:** E04B1/30 E04B1/48 (Advanced/Invention)

International class (IPC 1–7)**:** E04B1/30 E04B1/48

Classification Explorer

Abstract:
Source: JP2003147859A PROBLEM TO BE SOLVED: To easily joint a suspending member for suspending equipment or the like to a steel plate to be used for SC method for installing a compound structural body of a steel plate–concrete.SOLUTION: This steel plate construction is equipped with a steel plate 1 having a through hole 2 and a bar–shaped insert connector 3 having a threaded portion 4, the insert connector 3 is fixed to the steel plate 1, and its thread portion 4 is exposed to the surface of the steel plate 1. A suspending member 9 can be coupled to the thread portion 4 in a freely detachable manner through a screwing pieces such as bolts or the like.

16) Family number: 55367820 (CN103437289A) © PatBase

Title: CONNECTED/DISCONNECTED FLANGE PLATE COMBINED STRUCTURE CONSTRUCTION PROCESS

Priority: CN201310307273 20130718

Family:

Publication number	Publication date	Application number	Application date
CN103437289 A	20131211	CN201310307273	20130718
CN103437289 B	20151014	CN201310307273	20130718

Probable Assignee: HANGZHOU BOSHU CIVIL ENGINEERING TECHNOLOGY CO LTD

Assignee(s):(std)**:** HANGZHOU BOSHU CIVIL ENGINEERING TECHNOLOGY CO LTD

Assignee(s): HANGZHOU BOSHU CIVIL ENGINEERING TECHNOLOGY CO

Inventor(s):(std)**:** DONG ZHONGJIANG ; SUN TIANMING

International class (IPC 8–9): E01D21/00 E04G21/14 (Advanced/Invention)

Classification Explorer

Cited documents: KR100881921 B1, JP4231053 B2, JP2002250009 A2, CN201738497 U, CN201202084 Y, CN102704394 A,

Abstract:
Source: CN103437289A The invention relates to a flange plate combined structure, and discloses a connected/disconnected flange plate combined structure construction process, which comprises the following steps: a, connecting flange plates (1) of adjacent corrugated steel plate construction segments by using a butt strap (2); b, erecting a temporary steel guide beam (3) which is reinforced longitudinally; c, casting concrete (6); d, curing the concrete (6); e, removing the butt strap (2) for connecting the flange plates (1) and the temporary steel guide beam (3); and f, performing operation of a next segment. According to the construction process, the rigidity of a corrugated web is increased by adopting the butt strap for connecting during construction, the butt strap is cut off after concrete casting to disconnect adjacent construction segments, and a connecting key can change along with the concrete and can extend and retract freely along a longitudinal direction, so that redistribution of the shrinkage stress is reduced.

0) CN202187324U – HORIZONTAL HYDRAULIC CYLINDER CROSS HINGE WELDI...

17) Family number: 50944778 (CN202187324U) © PatBase

Title: Horizontal hydraulic cylinder cross hinge welding rack

Priority: CN201120224824U 20110629

Family:

Publication number	Publication date	Application number	Application date
CN202187324 U	20120411	CN201120224824U	20110629

Probable Assignee: EAST CN HYDROELEC INVEST AND DES

Assignee(s):(std)**:** EAST CHINA HYDROELECTRIC INVEST AND DESIGN... ; EAST CN HYDROELEC INVEST AND DES

Assignee(s): EAST CHINA HYDROELECTRIC INVESTIGATION AND DESIGN INSTITUTE OF CHINA HYDROPOWER ENGINEERING CONSULTING GROUP

Inventor(s):(std)**:** SHOUJIN SHI ; YANPING SHEN ; YUNXIANG WANG

Inventor(s): WANG YUNXIANG ; SHEN YANPING ; SHI SHOUJIN

International class (IPC 8–9): E02B7/20 E02B7/40 (Advanced/Invention)

Classification Explorer

Forward Citations: CN102733358, CN102733358,

Abstract:
Source: CN202187324U The utility model relates to a horizontal hydraulic cylinder cross hinge welding rack, which aims at replacing a casting part by a welded–steel plate construction so as to lead the structure of the frame to be more compact, effectively reduce the arrangement size of a hydraulic headstock gear, and more ensure manufacturing quality. According to the technical scheme, the horizontal hydraulic cylinder cross hinge welding frame is provided with primary concrete at the outer layer and secondary concrete at the inner layer; two groups of secondary embedded parts are precast in the secondary concrete; and the rack also comprises a horizontal hydraulic cylinder. The horizontal hydraulic cylinder cross hinge welding rack is characterized in that a vertical support is fixed at the upper part of each group of secondary embedded part by a connection bolt; the horizontal hydraulic cylinder is connected on an upper cover by a bearing hinge in a horizontal swinging way; the upper cover leads the horizontal hydraulic cylinder to be installed in a box–shaped swinging support by an articulation hole bolt; and the swinging support can be installed on the support in a swinging way by two supporting shafts in a vertical plane. The horizontal hydraulic cylinder cross hinge welding rack is applicable to a miter gate, a horizontal line–shaped gate, a shutter gate and the like.

0) US3701508A – BATTERY CASTING OF CONCRETE PANELS

18) Family number: 1028640 (US3701508A) © PatBase

Title: BATTERY CASTING OF CONCRETE PANELS

Priority: US19690877749 19691118

Family:

Publication number	Publication date	Application number	Application date
US3701508 A	19721031	US19690877749	19691118

Probable Assignee: WALTER PETER CROSS

Assignee(s):(std)**:** WALTER PETER CROSS

Inventor(s):(std)**:** CROSS WALTER PETER

Inventor(s): WALTER PETER CROSS

International class (IPC 8–9)**:** B28B7/24 B28B7/42 (Advanced/Invention); B28B7/00 B28B7/40 (Core/Invention)

International class (IPC 1–7)**:** B28B1/00 B28B7/02 B28B7/24

CPC: B28B7/248 B28B7/42

European class: B28B7/24B4 B28B7/42

US class: 212/130 249/119 249/120 249/129 249/156 249/79

Classification Explorer

Forward Citations: WO8301922, US4784365, US4673159, US4534924, US3892516, US3873058, US2014333004, US2009000242,

Abstract:
Source: US3701508A A concrete casting assembly including at least one battery of L–type mould members preferably with an overhead gantry providing a chute of rectangular C–shape which can be located over different mould spaces of the battery. The mould members are arranged in the battery one within the other so as to have the adjacent edges of the adjacent arms of the mould members alined with one another in respective mutually orthogonal planes each inclined by an angle of 45 degrees to the plane containing the corner edges of the mould members. The mould members are preferably of steel construction.

0) DE2936799A1 – FEUERSCHUTZTOR FIRE–PROTECTION DOOR – CONTG. F...

19) Family number: 1820638 (DE2936799A1) © PatBase

Title: FEUERSCHUTZTOR FIRE–PROTECTION DOOR – CONTG. FIREPROOF HEAT–INSULATING POLYURETHANE–BONDED LIGHT CONCRETE CASTING COMPSN. BETWEEN SHEET STEEL PANELS

Priority: DE19792936799 19790912

Family:

Publication number	Publication date	Application number	Application date
DE2936799 A1	19810319	DE19792936799	19790912
DE2936799 C2	19831201	DE19792936799	19790912

Probable Assignee: GREBAU GRESCHBACH IND

Assignee(s):(std)**:** GREBAU GRESCHBACH IND ; GRESCHBACH IND HERBOLZHEIM GMB

Assignee(s): GRESCHBACH INDUSTRIE HERBOLZHEIM GMBH AND CO 7834 ; GRESCHBACH INDUSTRIE HERBOLZHEIM GMBH AND CO 7834 HERBOLZHEIM DE ; GREBAU GRESCHBACH INDUSTRIEBAU GMBH AND CO KG

Inventor(s):(std)**:** GRESCHBACH MANFRED

Inventor(s): GRESCHBACH MANFRED 7834 HERBOLZHEIM DE

International class(IPC 8–9)**:** C04B28/02 E06B5/16 (Advanced/Invention); C04B28/00 E06B5/10 (Core/Invention)

International class(IPC 1–7)**:** C04B15/02 C04B35/66 C04B43/00 E06B5/16

CPC: C04B28/02 E06B5/16

European class: C04B28/02 E06B5/16

Classification Explorer

Cited documents: DE324687, DE2705725, DE248199, DE1954555, DE1658529 U, DE1434289,

Forward Citations: EP1106560,

Abstract:
Source: DE2936799A1 Ansprueche 1,)Feuerschutztor mit einer Vorder– sowie Rueckseite aus Stahlblech, in dessen Innerem sich feuerfestes, waerme daemmendes Material befindet, d a d u r c h g e k e n n z e i c h n e t, dass Vorderseite (2) und Rueck seite (3) aus nebeneinander angeordneten Kassetten (7) bestehen, die als Grundriss ein breites U–Profil mit an den Enden seiner beiden U–Schenkel (9) angesetzten, in die gleiche Richtung weisenden Zusatzschenkeln (10) be sitzen und der Raum zwischen Vorderseite (2) und Rueck seite (3) vollstaendig mit einer Giessmasse (11) aus Leicht beton ausgefuellt ist 2. In a fire–protection door having sheet steel front–and back panels enclosing fireproof heat–insulating material, the front panel and the back panel consist of adjacent modules, having, as cross–section, a wide U–profile with additional side–pieces, placed in the same direction, at the ends of its 2 U side–pieces. The space between the front panel and the back panel is filled completely with a casting compsn. of light concrete. Pref. casting compsn. is a perlite light concrete having bulk density lower than 0.4 Mp/cu.m., consisting of perlite and of a cement/polyurethane mixt. contg. max. 8 weight percent polyurethane as binder.

0) CN201037279Y – EXTERIOR WALL PREFABRICATED WALL BOARD

20) Family number: 41679558 (CN201037279Y) © PatBase

Title: Exterior wall prefabricated wall board

Priority: CN200720148890U 20070424

Family:

Publication number	Publication date	Application number	Application date
CN201037279 Y	20080319	CN200720148890U	20070424

Probable Assignee: JIANKANG LIU

Assignee(s):(std)**:** JIANKANG LIU

Assignee(s): LIU JIANKANG

Inventor(s):(std)**:** JIANKANG LIU

Inventor(s): LIU JIANKANG

International class (IPC 8–9): E04B1/76 E04B2/72 (Advanced/Invention); E04B1/76 E04B2/72 (Core/Invention)

Classification Explorer

Forward Citations: CN102869841, CN102869841,

Abstract:
Source: CN201037279Y The utility model provides an external wall pre−manufactured wall panel, comprising an inner layer of the wall panel and an outer layer of the wall panel, wherein a heat preservation layer is arranged between the inner and outer layers of the wall panel; the outer layer of the wall panel is made of a reinforced concrete panel or a pre−painted color steel sheet steel plate construction, while the inner layer of the wall panel is made of a reinforced concrete panel. The utility model is characterized in that: bridge−cut−off reinforcing steel bars are arranged on the edges of the inner and outer layers of the wall panel, two external wall pre−manufactured wall panels, when connected, form a cavity in which molt filter is filled to connect the heat preservation layers of the pre−manufactured wall panels into an integral structure. As the utility model adopts reinforcing steel bars subject to bright−cut−off treatment on the inner and outer layers of the pre−manufactured wall panel and the molt filter filled into the cavity formed when the two pre−manufactured wall panels are connected to connect the heat preservation layers into an integral structure, the heat bridges can be prevented form happening greatly and the heat preservation performance is improved. The utility model has simple manufacture process, fast construction and heat preservation, hence an upgrade product of external wall pre−manufactured wall panel.

0) DE4218333A1 – ADAPTABLE LOADING RAMP FOR OVERCOMING HEIGHT DI...

21) Family number: 17953829 (DE4218333A1) © PatBase

Title: Adaptable loading ramp for overcoming height differences when loading lorries – has two=part cover surface with front part moving down telescopically below rear part on meeting pressure obstruction.

Priority: DE19924218333 19920529

Family:

Publication number	Publication date	Application number	Application date
DE4218333 A1	19931202	DE19924218333	19920529

Probable Assignee: DIEMA MASCHINENBAU GMBH

Assignee(s):(std)**:** DIEMA MASCHINENBAU GMBH

Assignee(s): DIEMA MASCHINENBAU GMBH 31600 UCHTE DE

Inventor(s):(std)**:** BRINKMEYER DIETER DIPL ING

Inventor(s): BRINKMEYER DIETER DIPL ING FH 4990 LUEBBECKE DE

International class (IPC 8–9): B65G69/28 (Advanced/Invention); B65G69/00 (Core/Invention)

International class (IPC 1–7): B65G69/28

CPC: B65G69/2829

European class: B65G69/28B2B4

Classification Explorer

Cited documents: SU1351865, EP0283841, DE3710109, DE1808688,

Abstract:
Source: DE4218333A1 The front part (13) of the cover face adjoins the front edge (9) of the ramp and moves telescopically when encountering a horizontal compressive force (7) exerted horizontally on the front edge of the ram. The telescopic downward movement is against the force of a resetting spring which returns the front part 13) to its starting position when the horizontal compressive force ceases. The front part of the cover face can be formed by an advance tongue which when retracted closes flush with the leading edge (6) of the concrete ramp (5). USE/ADVANTAGE – Lorry can be reversed up to loading ramp without danger of damage in event of impact.

0) US3544151A – LIFTING DEVICE FOR HEAVY,HOLLOW ARTICLES SUCH A...

22) Family number: 931319 (US3544151A) © PatBase

Title:	LIFTING DEVICE FOR HEAVY,HOLLOW ARTICLES SUCH AS CONCRETE PIPE
Priority:	US19680746943 19680723

Family:

Publication number	Publication date	Application number	Application date
US3544151 A	19701201	US19680746943	19680723

Probable Assignee:	SOUTHEAST PRECAST CONCRETE PRO
Assignee(s):(std):	SOUTHEAST PRECAST CONCRETE PRO
Assignee(s):	SOUTHEAST PRECAST CONCRETE PRODUCTS INC
Inventor(s):(std):	STOKES FRANK R
Inventor(s):	FRANK R STOKES
International class (IPC 8–9):	B66C1/44 B66C1/54 (Advanced/Invention); B66C1/42 (Core/Invention)
International class (IPC 1–7):	B66C1/00 B66C1/14 B66C1/54
CPC:	B66C1/447 B66C1/54
European class:	B66C1/44D2 B66C1/54
US class:	294/119.2 294/81 294/81.6 294/97
Classification Explorer	
Cited documents:	US3297353 A, US3212469 A, US2203799 A,
Forward Citations:	WO16184905, US6481769, US4340248, US3845979, NL2014823,

Abstract:
Source: US3544151A ABSTRACT OF THE DISCLOSURE A hydraulically operated pipe lifting device that may be suspended from a chain on the boom of a material handling tractor having a source of hydraulic fluid and ig pressure with controls to direct the flow. Heavy, hollow, tubulaer objects like concrete pipe or clay tile pipe, which are fragile, especially when "green" or uncured, may be easily and properly moved with the present device. A rigid upper frame supports an open outside lifting frame, 20 which may be circular when used with circular pipe, suspended by shackles or chain; and for tapered or conical pipe the rigid frame also supports near the center a shoe arrangement comprising a pair of spaced, hydraulically–operated shoes which move in retraction inwardly toward 25 the center and move outwardly for opération to engage the tapered inside of the tapered pipe as the device is lifted. A hydraulic cylinder connects a movable section of the outside lifting frame in such a manner as to permit tightening or loosening of the frame (which does not 30 tighten on conical pipe) around the outside of the object to be lifted by operating the hydraulic cylinder. In the opération, the boom of the vehicle is manipulated to suspend the outside frame around the outside of the object (pipe) to be lifted with the inside shoes inside the object (pipe) facing opposite inside portions. Then the hydraulic controls are actuated to extend the shoes inside the pipe while the outside frame is inactively located on the outside and the boom and tractor manipulated to move the ^ pipe. Release is a reversai of grasping. The outside lifting frame is independent of the inside shoes and vice versa except that hydraulics are simplifìed.

0) TW150664Y – BUCKLES THE SUITABLE STRUCTURAL STEEL TO RECEIV...

23) Family number: 45118707 (TW150664Y) © PatBase

Title: Buckles the suitable structural steel to receive ban the lid (Machine translation)

Family:

Publication number	Publication date	Application number	Application date
TW150664 Y	19910121	TW19900211656U	19901020

International class (IPC 8–9): E04C2/38 (Advanced/Invention); E04C2/38 (Core/Non–invention)

International class (IPC 1–7): E04C2/38

Classification Explorer

Abstract:
Source: TW150664Y

Machine translation: One kind of buckle suitable structural steel receives ban the lid. ; The above buckle suitable structural steel receives ban the lid, is uses the structural steel in view of the common reinforcing steel building to receive ban construction way the support, designs becomes, the goal lies in the anti– ? pouring to set at the concrete to receive by the structural steel ban side outside leaks, it is the use designs receives ban the body, when covers card of tree top the establishment in the construction combination, can buckle directly gathers the card to meet in the structural steel receives ban nearby the gap on, improves by steel plate construction ways welding and so on coordination gas welding or electric welding, reaches the fast combination, the construction simple, rapid and the mass productions the economic efficiency.

0) WO14125480A1 – SHIELDING OF STRUCTURES BLINDAGE DE STRUCTURES...

24) Family number: 54589044 (WO14125480A1) © PatBase

Title: SHIELDING OF STRUCTURES

Priority: IL20130224699 20130213

Family:

Publication number	Publication date	Application number	Application date
IL224699 A0	20130627	IL20130224699	20130213
WO14125480 A1	20140821	WO2014IL50148	20140212

Probable Assignee: MOSHE GOLDSTEIN

Assignee(s):(std)**:** HAIM SHAFIR ; ISRAEL MILITARY IND ; MOSHE GOLDSTEIN

Assignee(s): ISRAEL MILITARY IND LTD

Inventor(s):(std)**:** SHAFIR MOSHE ; GOLDSTEIN MOSHE

Inventor(s): HAIM SHAFIR ; MOSHE GOLDSTEIN

Agent(s): LAHAV SHARONA ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B F41H11/04 (Advanced/Invention); E04B (Subclass/Invention)

CPC: F41H5/0442 F41H5/007 F41H5/24

Classification Explorer

Cited documents: WO08114261 A2, WO08055452 A1, US4677798 A, US2009314878 AA, US2004216652 AA, EP2116674 A2,

DE102007003844 A1

DE10150852 A1,

Abstract:
A ballistic shielding system for protection of security–sensitive structures and/or areas comprising at least two of the following: a modular overhead protective structure comprising an upper steel plate, lower steel plate and spaced apart partitions separating the upper and lower steel plates, the space between the upper and the lower steel plates being filled with reinforced concrete; a semi–active protective layer comprising a lightweight net webbing stretched over the security–sensitive structure and/or area to be protected to meet and detonate on impact front point detonation fuses mounted on rockets and missiles; a virtual hemispherical protection system comprising one or more interception stations, each having one or more sensing devices, a launching device and at least one magazine, the system able to detect and shoot explosive charges against aerial threats and destroy them at a safe distance from the security sensitive structures and/or areas, and a controller coordinating and controlling systems.

0) US4419961A – MILKING PARLOR CONSTRUCTION

25) Family number: 3881341 (US4419961A) © PatBase

Title: Milking parlor construction

Priority: US19820369030 19820416

Family:

Publication number	Publication date	Application number	Application date
US4419961 A	19831213	US19820369030	19820416

Probable Assignee: HAWS BEN E

Assignee(s):(std)**:** HAWS BEN E ; VANDENBERG ANDREW W ; VANDENBERG AUGUST ; VANDENBERG BEN W

Inventor(s):(std)**:** HAWS BEN E ; VANDENBERG ANDREW W ; VANDENBERG AUGUST ; VANDENBERG BEN W

International class (IPC 8–9): A01K1/12 A01K5/02 (Advanced/Invention); A01K1/00 A01K5/00 (Core/Invention)

International class (IPC 1–7): A01K1/12

CPC: A01K1/12 A01K5/0275

European class: A01K1/12 A01K5/02G

US class: 119/14.03 119/27 119/446 119/520 119/521 119/523 119/524

Classification Explorer

Cited documents: US4362127 A, US4256054 A, US4194467 A, US3537624 A,

Forward Citations: US8430065, US8291859, US8171881, US7086348, US7055458, US6814026, US6802280, US6779484, US6637375, US6216633, US5140942, US4977856, US4879971, US4753194, US4715321, US4508059, US2011155066, US2010192860, US2010116220, US2006254523, US2004050333, US2004020442, US2004020440, US2004011294, US2003140860, FR2860954, FR2565778, EP1714546, EP1714546,

Abstract:
Source: US4419961A An improved milking parlor construction comprising the combination of a modular unit which comprises a module which may be utilized in fabricating milking parlors of the type wherein a central milking pit area has juxtapositioned on either side a cattle stand wherein each of the modules is composed of a vertical upright member that may be supported in concrete or the like and from which a feed bowl and shroud and individual cattle feeding station gate may be hung. Superpositioned over the vertical upright, which is of hollow construction, is a feed conveyor having communication to the vertical upright member which has a feed chute terminating in the feed bowl by which feed may be fed to the feed bowl of each of the cattle stations. Means are utilized whereby one or plurality of the gates defining a captive station at which the cattle are milked and, incidentally fed, provides easy egress for the cattle to the exit corridor to leave the milking parlor structure. Adequate cross−ties and vertical support members completes the salient components of the improved milking parlor construction. In other embodiments uniquely configured components make up the overall construction which has the ability to meet a myriad of individual needs depending upon number of cattle involved.

0) GB1551384A – OFF–SHORE PLATFORM AND A METHOD OF ASSEMBLY THE...

26) Family number: 4926876 (GB1551384A) © PatBase

Title: OFF–SHORE PLATFORM AND A METHOD OF ASSEMBLY THEREOF

Priority: GB19760027895 19760705

Family:

Publication number	Publication date	Application number	Application date
GB1551384 A	19790830	GB19760027895	19760705

Probable Assignee: VOGEL R

Assignee(s):(std)**:** VOGEL R

International class (IPC 8–9)**:** E02B17/00 E02B17/02 E21B15/00 E21B17/01 E21B43/017 E21B7/136 (Advanced/Invention)

International class (IPC 1–7)**:** E21B7/12

CPC: E21B7/136 E02B17/0004 E02B17/027 E21B15/003 E21B17/01 E21B43/017

European class: E02B17/00A E02B17/02D E21B15/00F E21B17/01 E21B43/017 E21B7/136

Classification Explorer

Forward Citations: WO9947784, GB2351749, GB2351749, EP2743401,

Abstract:
Source: GB1551384A (Claim 1) 1. An offshore drilling platform having a plurality of legs converging from the underwater bed to a joint supporting a drilling deck, each leg being formed as a latticework structure, and at least one multiple riser pipe assembly comprising a plurality of pipes extending from the underwater bed to the deck and connected together to form a rigid structural unit, the assembly being connected to the legs substantially adjacent the joint.

0) US4100754A – METHOD AND APPARATUS FOR INSTALLING PIPES IN OF...

27) Family number: 6820287 (US4100754A) © PatBase

Title: Method and apparatus for installing pipes in off–shore locations

Priority: US19760709302 19760728

Family:

Publication number	Publication date	Application number	Application date
US4100754 A	19780718	US19760709302	19760728

Probable Assignee: VOGEL RUDOLF

Assignee(s):(std)**:** VOGEL RUDOLF

Inventor(s):(std)**:** VOGEL RUDOLF

International class (IPC 8–9)**:** E02B17/00 E02B17/02 E21B15/00 E21B17/01 E21B43/017 E21B7/136 (Advanced/Invention)

International class (IPC 1–7)**:** E02B17/00 E21B15/02

CPC: E21B17/01 E02B17/0004 E02B17/027 E21B7/136 E21B15/003 E21B43/017

European class: E02B17/00A E02B17/02D E21B15/00F E21B17/01 E21B43/017 E21B7/136

US class: 175/7 175/8 175/9 405/205 405/225

Classification Explorer

Cited documents: US3978804 A, US3955621 A, US3685300 A, US3670507 A, US3209544 A, US2940265 A, US2857744 A,

Forward Citations: US4607983, US4557629, US4437794, EP0499737, EP0147144, CN104790368,

Abstract:
Source: US4100754A Pipes which are to be inserted vertically into the sea bed for the extraction of fluids therefrom, such as liquids and gases, are connected together in groups, with each pipe group being constructed on shore and then supported horizontally by the water while it is being moved to a platform site. The pipes are then flooded to turn the pipe package to a vertical position and the package is then connected with a platform by being engaged in a receiving groove in the platform edge. The pipe packages are then driven vertically into the sea bed and can then be fixedly connected to the platform and suitable connections made thereto for the flow of fluids upwardly in the sea bed through the pipe packages to the platform.

0) DE7925851U1 – FEUERSCHUTZTOR FIRE PROTECTION GATE (MACHINE ...

28) Family number: 16413764 (DE7925851U1) © PatBase

Title: FEUERSCHUTZTOR FIRE PROTECTION GATE (Machine translation)

Priority: DE19790025851U 19790912

Family:

Publication number	Publication date	Application number	Application date
DE7925851 U1	19800124	DE19790025851U	19790912

Probable Assignee: GREBAU GRESCHBACH INDUSTRIEBAU GMBH AND CO KG 7500 KARLSRUHE

Assignee(s): GREBAU GRESCHBACH INDUSTRIEBAU GMBH AND CO 7500 KARLSRUHE KG ; GREBAU GRESCHBACH INDUSTRIEBAU GMBH AND CO KG 7500 ; GREBAU GRESCHBACH INDUSTRIEBAU GMBH AND CO KG 7500 KARLSRUHE

International class (IPC 8–9): C04B35/66 E06B5/16 (Advanced/Invention); C04B35/66 E06B5/10 (Core/Invention)

International class (IPC 1–7): C04B15/02 C04B35/66 C04B43/00 E06B5/16

CPC: C04B35/66 E06B5/16

Classification Explorer

Abstract:
Source: DE7925851U1 (Claim 1) 4. Feuerschutztor nach einem der Ansprueche 1 bis 3, d a d u r c h g e k e n n z e i c h n e t, dass die Kassetten (7) der Vorderseite (2) gegenueber denen der Rueckseite (3) um die Breite der Endkassette (8) versetzt angeordnet sind.

Machine translation: (Claim 1) 4 Feuerschutztor according to one of claims 1 to 3, characterized in that the cassette (7) front (2) opposite where the back (3) to the width of the end cassette (8) are offset.

0) US4492535A – DIAPHRAGM PUMP

29) Family number: 1971713 (US4492535A) © PatBase

Title: Diaphragm pump

Priority: DE19803020775 19800531 DE19813113202 19810402 US19810263745 19810514 DE19813121053 19810527 DE19813121103 19810527

Family:

Publication number	Publication date	Application number	Application date
BR8103405 A	19820224	BR19810003405	19810529
DE3121053 A1	19820128	DE19813121053	19810527
DE3121053 C2	19850214	DE19813121053	19810527
DE3121103 A1	19820211	DE19813121103	19810527
DE3121103 C2	19850124	DE19813121103	19810527
ES502619 A1	19820401	ES19810502619	19810529
ES8204079 A1	19820716	ES19810502619	19810529
FR2483535 A1	19811204	FR19810010430	19810526
FR2483535 B1	19860207	FR19810010430	19810526
GB2079862 A1	19820127	GB19810014217	19810508
GB2079862 B2	19840426	GB19810014217	19810508
IT1137490 A	19860910	IT19810021958	19810526
IT8121958 A0	19810526	IT19810021958	19810526
JP57020576 A2	19820203	JP19810081281	19810529
NL8102565 A	19811216	NL19810002565	19810525
US4492535 A	19850108	US19840575490	19840201

Probable Assignee: TUCHENHAGEN OTTO GMBH

Assignee(s):(std): OTSUTOO TOUTSUHIENHAAGEN GMBH ; OTTO TUCHENHAGEN AND CO GMBH KG ; OTTO TUCHENHAGEN AND CO KG GMBH ; O T PUMPEN GMBH AND CO KG ; TUCHENHAGEN OTTO GMBH ; TUCHENHAGEN OTTO GMBH AND CO KG

Assignee(s): TUCHENHAGEM O GMBH AND CO KG ; OTTO TUCHENHAGEN GMBH AND CO KG TE BUCHEN BONDSREPUBLIEK DUITSLAND ; TUCHENHAGEN GMBH CO KG OTTO ; TUCHENHAGEN OTTO AND CO KG GMBH ; O T PUMPEN GMBH AND CO KG 2059 BUECHEN DE ; OTTO TUCHENHAGEN GMBH AND CO KG ; OTTO TUCHENHAGEN GMBH AND CO KG 2059 BUECHEN DE

Inventor(s):(std): FRIEDRICH STAHLKOPF ; FURIIDORITSUHI SHUTAARUKOTSUFU ; STAHLKOPF F ; STAHLKOPF FRIEDRICH ; STAHLKOPF FRIEDRICH R R ; FURIIDORITSUHI SHIYUTAARUKOTSU

Inventor(s): STAHLKOPF FRIEDRICH 2059 BUECHEN DE

International class (IPC 8–9): F04B43/00 F04B43/10 F04B43/107 (Advanced/Invention); F04B43/00 (Core/Invention)

International class (IPC 1–7): F04B1/00 F04B15/00 F04B43/02 F04B43/06 F04B43/08 F04B43/10 F04B43/6 F04B45/04

CPC: F04B43/009 F04B43/107

European class: F04B43/00D9B F04B43/107

US class: 417/394 92/92

Classification Explorer

Cited documents: US3476053 A, US3342137 A, US3335666 A, US3253549 A, US313383 A, US3062153 A, US3007416 A, US2246772 A, US2105067 A, US2092629 A, US2047540 A, US1832259 A, JP54036102 B4, GB191305135 A, FR772225 A, DE7420466 U, DE596227 A, DE2402056 A1, DE1911525 A1, DE1653577 A1, DE1040375 B, AT288870 B,

Forward Citations: US8720494, US8602844, US8181675, US6658986, US4966528, US4810172, US2010089490, US2009272460, FR2556051, EP2759703, EP2308646, DE3341020, DE102013100794,

Abstract:
Source: US4492535A A diaphragm pump especially for pumping viscous and abrasive materials including a spherical housing, the inner portion of which defines a pumping chamber together with a cylindrical hose membrane activated by a pulsating medium. One or more hose membranes surround a support pipe having a circular cross section to prevent compressive strain on the membranes during pumping by deformation of the membrane in the inward direction. In an alternative embodiment, a modulated support tube is provided to permit the diaphragm to flap into the indentations of the support tube in a manner neutral to longitudinal extension. Support rings are provided which permit symmetrical arching of the hose diaphragm during the compression stroke.

0) EP1106316A2 – TRANSPORTABLE MIXER FAHRMISCHER MELANGEUR MOBIL...

30) Family number: 30230545 (EP1106316A2) © PatBase

Title: Transportable mixer

Priority: DE19992021418U 19991206 DE19992022441U 19991221

Family:

Publication number	Publication date	Application number	Application date
DE29922441 U1	20010419	DE19992022441U	19991221
EP1106316 A2	20010613	EP20000120557	20000920
EP1106316 A3	20021120	EP20000120557	20000920

Probable Assignee: LIEBHERR MISCHTECHNIK GMBH

Assignee(s):(std)**:** LIEBHERR MISCHTECHNIK GMBH

Inventor(s):(std)**:** ALFRED SCHWEIZER

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

International class (IPC 8–9)**:** B28C5/42 (Advanced/Invention); B28C5/00 (Core/Invention)

International class (IPC 1–7)**:** B28C5/42 B28C7/16

CPC: B28C5/4248

European class: B28C5/42A3C2

Classification Explorer

Cited documents: US2968382 A, US2717769 A, EP0079415 A1, DE9107067 U, DE3107423 A1,

Forward Citations: CN104842458,

Abstract:
The rotating mixing drum (1) may be mounted on the chassis frame of a road vehicle. It has an open end (2) through which the contents may be poured. A funnel (3) may be fitted onto the open end, through which the contents may be poured into an adjustable chute (4) which directs the material to where it is needed. The swiveling support for the chute may be a single arm (6) on a hinge (7) with a vertical axis.

- **search:** SS11 FT=steel and column and (housing or formwork or framework) and concrete (Results 1676)
- **search:** SS12 FT=steel and column and (housing or formwork or framework) and concrete and fill* (Results 442)
- **search:** SS13 FT=steel and column and (housing or formwork or framework) and (concrete and filled or in–filled) (Results 301)
- **search:** SS14 FT=steel and column and (housing or formwork or framework) and (concrete filled or in–filled) (Results 38)
- List: SS14 1–50 (FT=steel and column and (housing or formwork or framework) and (concrete filled or in–filled)) (Results 38)

0) US4722156A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

1) Family number: 29121419 (US4722156A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority:

CA19860503158 19860303
CA19860505996 19860407
JP19850042979 19850305
JP19850045285 19850307
JP19850087172 19850423
CA19880568735 19880606
JP19850193388 19850902
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JP19850210456 19850924
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JP19850146386 19850703
JP19850156365 19850716
JP19850156366 19850716
JP19860001463 19850703
US19870107680 19871009
US19860899549 19860822
US19860847495 19860403
US19860835954 19860304
JP19870234374 19870918
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JP19860003179 19860110
JP19850299531 19851228
JP19850241049 19851028
JP19850295377 19851225

Family:

Publication number	Publication date	Application number	Application date
CA1259808 A1	19890926	CA19860503158	19860303
CA1273179 A1	19900828	CA19860505996	19860407
CA1300920 A1	19920519	CA19880568735	19880606
CN1008461 B	19900620	CN19861001986	19860303
CN1008643 B	19900704	CN19861006236	19860902
CN1009291 B	19900822	CN19861003232	19860506
CN1017364 B	19920708	CN19881004690	19880730
CN1032375 A	19890412	CN19881004690	19880730
CN86101986 A	19860903	CN19861001986	19860303
CN86103232 A	19870318	CN19861003232	19860506
CN86106236 A	19870805	CN19861006236	19860902
DE3676021 D1	19910117	DE19863676021	19860822
DE3679957 D1	19910801	DE19863679957	19860403
DE3681944 D1	19911121	DE19863681944	19860305
DE3884117 D1	19931021	DE19883884117	19880610
DE3884117 T2	19940505	DE19883884117T	19880610
EP0195552 A2	19860924	EP19860301552	19860305
EP0195552 A3	19870527	EP19860301552	19860305
EP0195552 B1	19911016	EP19860301552	19860305
EP0214800 A2	19870318	EP19860306519	19860822
EP0214800 A3	19870527	EP19860306519	19860822
EP0214800 B1	19901205	EP19860306519	19860822
EP0218313 A2	19870415	EP19860302470	19860403
EP0218313 A3	19890607	EP19860302470	19860403
EP0218313 B1	19910626	EP19860302470	19860403
EP0308038 A1	19890322	EP19880305320	19880610
EP0308038 B1	19930915	EP19880305320	19880610
JP1080638 A2	19890327	JP19870234374	19870918
JP1256651 A2	19891013	JP19880080444	19880401
JP1688633 C3	19920811	JP19850210454	19850924
JP1688641 C3	19920811	JP19850241049	19851028
JP1716120 C3	19921127	JP19850156365	19850716
JP1744817 C3	19930325	JP19850295377	19851225
JP1744819 C3	19930325	JP19850299531	19851228
JP1756773 C3	19930423	JP19860003179	19860110
JP1772241 C3	19930714	JP19850156366	19850716

JP1775799 C3	19930728	JP19850042979	19850305	
JP1775803 C3	19930728	JP19850087172	19850423	
JP1788834 C3	19930910	JP19850210456	19850924	
JP1798456 C3	19931112	JP19850087173	19850423	
JP1804113 C3	19931126	JP19850146386	19850703	
JP1809360 C3	19931210	JP19850210453	19850924	
JP1887864 C3	19941122	JP19850193388	19850902	
JP3053418 B4	19910815	JP19850210454	19850924	
JP3053420 B4	19910815	JP19850241049	19851028	
JP4001821 B4	19920114	JP19850156365	19850716	
JP4017261 B4	19920325	JP19850210456	19850924	
JP4020458 B4	19920402	JP19850156366	19850716	
JP4028062 B4	19920513	JP19850295377	19851225	
JP4028067 B4	19920513	JP19850299531	19851228	
JP4048137 B4	19920805	JP19860003179	19860110	
JP4063936 B4	19921013	JP19850087172	19850423	
JP4063938 B4	19921013	JP19850042979	19850305	
JP5002780 B4	19930113	JP19850087173	19850423	
JP5003492 B4	19930114	JP19850146386	19850703	
JP5015853 B4	19930302	JP19850210453	19850924	
JP6006804 B4	19940126	JP19850193388	19850902	
JP61204455 A2	19860910	JP19850042979	19850305	
JP61204456 A2	19860910	JP19850045285	19850307	
JP61246438 A2	19861101	JP19850087172	19850423	
JP61246439 A2	19861101	JP19850087173	19850423	
JP62010351 A2	19870119	JP19850146386	19850703	
JP62017236 A2	19870126	JP19850156365	19850716	
JP62017245 A2	19870126	JP19850156366	19850716	
JP62055320 A2	19870311	JP19850193388	19850902	
JP62072837 A2	19870403	JP19850210453	19850924	
JP62072838 A2	19870403	JP19850210454	19850924	
JP62072840 A2	19870403	JP19850210456	19850924	
JP62101734 A2	19870512	JP19850241049	19851028	
JP62153438 A2	19870708	JP19850295377	19851225	
JP62160337 A2	19870716	JP19850299531	19851228	
JP62160338 A2	19870716	JP19860003179	19860110	
JP64080638 A2	19890327	JP19870234374	19870918	
KR940009459 B1	19941013	KR19860001515	19860304	
KR940009460 B1	19941013	KR19880007707	19880625	
SG9290703 A	19920904	SG19920090703	19920706	
US4722156 A	19880202	US19860835954	19860304	
US4864797 A	19890912	US19880207163	19880615	
US5012622 A	19910507	US19900503147	19900330	

Probable Assignee: SHIMIZU CONSTRUCTION CO LTD

Assignee(s):(std)**:** SHIMIZU CONSTRUCTION CO LTD ; SHIMIZU CONSTRUCTON CO LTD ; SHUMIZU CONSTRUCTION CO LTD ; THE SHIMIZU CONSTRUCTION CO LTD

Assignee(s): THE SHIMIZU CONSTRUCTION CO LTD TOKIO TOKYO JP ; SHIMIZU CONSTRUCTION CO ; SHUMIZU CONSTRUCTION CO ; SHIMIZU CONSTR CO LTD ; SATO TAKANORI ; SHOKAWA TOMOO ; SAITO YUTAKA ; SHIOKAWA HIDEYO ; SANO TAKESHI ; WATANABE YASUSHI ; SHIMIZU CORP ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAMURA YASUKAZU

; NAKASHIMA HIDEO ; ORITO YOSHIHIRO

Inventor(s):(std): AL OSAMU HOSOKAWA ET ; HOSOKAWA OSAMU ; IKEDA KENICHI ; KITAGAWA KIYOYASU ; KITAGAWA KYOYASU ; KITAGAWA SEIHO ; KOSHIDA KAZUNORI ; NAKAJIMA HIDEO ; NAKAJIMA HIDEO SHIMIZU CONSTRU ; NAKAMURA KOICHI ; NAKAMURA YASUKAZU ; NAKAMURA YASUKAZU SHIMIZU CONS ; NAKASHIMA HIDEO ; ORITO YOSHIHIRO ; SAITO YUTAKA ; SANO TAKESHI ; SATO TAKANORI ; SATO TAKANORI SHIMIZU CONSTRUC ; SHIOKAWA HIDEYO ; SHIYOUKAWA NOBUO ; SHOKAWA TOMOO ; WANTANABE YASUSHI ; WATANABE YASUSHI ; WATANABE YASUSHI SHIMIZU CONST ; YUTAKA SAITO ; YOSHIHIRO ORITO ; YASUSHI WATANABE ; YASUKAZU NAKAMURA ; TOMOO SHOKAWA ; TAKESHI SANO ; TAKANORI SATO ; SHOKAWA TOMOO SHIMIZU CONSTRUC ; SHOKAWA TOMO ; SEIHO KITAGAWA ; SAITO YUTAKA SHIMIZU CONSTRUCT ; OSAMU HOSOKAWA ET AL ; OSAMU HOSOKAWA ; SHIOKAWA HIDEYO SHIMIZU CONSTR ; ORITO YOSHIHIRO SHIMIZU CONSTR ; NAKAMURA YASUKUZU ; KENICHI IKEDA ; KAZUNORI KOSHIDA ; HIDEYO SHIOKAWA ; HIDEO NAKASHIMA ; HIDEO NAKAJIMA ; ET AL ; IKEDA KENICHI SHIMIZU CONSTRUC

Inventor(s): HOSOKAWA OSAMU SUGINAMI KU TOKYO JP ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD CHUO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L... ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L CHUO K ; NAKAMURA YASUKAZU MATSUDO SHI CHIBA KEN JP ; NAKAJIMA HIDEO SHIMIZU CONSTRUCTION CO LTD ; KOSHIDA KAZUNORI HINO SHI TOKYO JP ; KITAGAWA SEIHO SHIKI SHI SAITAMA KEN JP ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI... ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI KANAGAWA KE ; SHIOKAWA HIDEYO INBA GUN CHIBA KEN JP ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD CHUO K ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI TOKYO JP ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI SHIMIZU CONSTRUCTION CO L ; SATO TAKANORI SETAGAYA KU TOKYO JP ; SANO TAKESHI TAMA SHI TOKYO JP ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD CHUO KU T ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD CHUO K ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD CHUO ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LT ; WANTANABE YASUSHI OHTA KU TOKYO JP ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO ; SATO TAKANORI SHIMIZU CONSTRUCTION CO ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO

Agent(s): MARKS AND CLERK

Designated states: DE FR GB

International class (IPC 8–9): B23K9/02 B23K9/028 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/22 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 (Advanced/Invention); B23K9/02 B23K9/028 E02D5/24 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/20 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): B23K31/06 C04C3/36 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 E04C3/36

CPC: E04B1/165 E04B1/30 E04C3/34 E02D5/30 Y02T10/7005

European class: E02D5/30 E04B1/16D E04B1/30 E04C3/34

US class: 264/256 264/262 52/263 52/721 52/721.4 52/724 52/725 52/726 52/726.1 52/726.3 52/742.14 52/834 52/848 52/98

Classification Explorer

Cited documents: WO8204455 A1, USRE17834 E, US960125 A, US905888 A, US836673 A, US4783940 A, US4722156 A, US4694622 A, US4588327 A, US4470106 A, US4407106 A, US4281487 A, US4272929 A, US4166347 A, US4018055 A, US4016701 A, US3991532 A, US3963056 A, US3828504 A, US3793794 A, US3501881 A, US3382680 A, US3199300 A, US3058264 A, US2698519 A, US2210553 A, US2176007 A, US2035662 A, US1971051 A, US1932671 A, US1571092 A, US1571091 A, US1432192 A, US1410453 A, US1190002 A, US1019561 A, JPS5846625, JPS4921804 U, JP63027634 A2, JP61179936 A2, JP61179936, JP59029483 U1, JP58046625 A2, JP57151439 U1,

JP57151439 U1, JP57142033 U1, JP57142033 U1, JP57038001 U1, JP49134112 A2, JP49134112, JP49126714 U1, JP49021804 U1, JP49021804 U, JP48058605 U1, GB287447 A, FR2539782 A1, FR2286920 A1, FR1540495 A, FR1173701 A, EP0218313 A2, EP0195552 A2, DE642265 A, DE2723534 A1, DE1056348 A,

Forward Citations: WO9851883, WO13120138, WO13016683, WO11072451, WO10018491, WO09090301, WO08157768, WO03054321, US9677273, US9523188, US9248957, US9096999, US9067721, US8941270, US8888413, US8850750, US8484915, US8468775, US8250833, US8104242, US8056297, US7811495, US7475651, US7143554, US7107730, US6665990, US6655877, US6189286, US6141918, US6119425, US6061992, US5934035, US5678375, US5577857, US5423634, US5399169, US5285614, US5218802, US5174080, US5066834, US4864797, US2016251865, US2014000207, US2013133278, US2012114425, US2010319280, US2010071275, US2009313913, US2009038263, US2009021019, US2007261356, US2007199252, US2007175577, US2007028541, US2006174549, US2004055234, US2003029111, RU2597909, RU2496949, RU2495987, JP7139090, JP7034540, JP64062535, JP64033343, JP63223250, JP6093357, JP5915425, JP5734169, JP5033493, JP4491099, JP4304039, JP4094004, JP3941899, JP3778348, JP3013329, JP2697394, JP2575761, JP2080729, JP2014527470, JP2014015773, JP2013112973, JP2009061727, JP2005113413, JP2003138648, JP2000282578, JP1142146, JP11181957, JP1062535, JP1033343, ITTV20090161, FR2841579, FR2833632, EP0982447, EP0308038, EA10211, EA017610, EA010211, DE10261604, CN105178512, CN104790976, CN104763162, CN104405123, CN104120833, CN104006283, CN104006283, CN103967209, CN103924738, CN103924738, CN103422620, CN103422620, CN103122676, CN103122676, CN103061566, CN102677824, CN102635064, CN102635063, CN102409809, CN102322113, CN102134891, CN102011432, CN101982629, CN101806118, CN101793055, CH691691, AT502604,

Abstract:
Source: US4722156A An concrete filled steel tube column and method of constructing same. The concrete filled steel tube column includes a steel tube having an inner face; a concrete core disposed within the steel tube; and a separating layer interposed between the inner face of the steel tube and the concrete core for separating the concrete core from the inner face of the steel tube so that the steel tube may not be bonded to the concrete core. After the separating layer is formed on the inner face of the steel tube, the concrete is charged into the steel tube to form a concrete core.

0) US5737895A – PREFABRICATED CONSTRUCTION PANELS AND MODULES F...

2) Family number: 20880702 (US5737895A) © PatBase

Title: Prefabricated construction panels and modules for multistory buildings and method for their use

Priority: US19950575343 19951220 US19960767849 19961217 WO1996US20877 19961219

Family:

Publication number	Publication date	Application number	Application date
AU199715693 A1	19970714	AU19970015693	19961219
AU713617 B2	19991209	AU19970015693	19961219
CA2213346 AA	19970819	CA19962213346	19961219
EA000200 B1	19981224	EA19970000182	19961219
EA199700182 A1	19971230	EA19970000182	19961219
EP0848776 A1	19980624	EP19960945443	19961219
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IL121580 A0	19980208	IL19960121580	19961219
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MX9706321 A1	19980731	MX19970006321	19970819
NZ326985 A	19990429	NZ19960326985	19961219
US5737895 A	19980414	US19950575343	19951220
US5867964 A	19990209	US19960767849	19961217
WO9722770 A1	19970626	WO1996US20877	19961219

Probable Assignee: ARTHUR PERRIN

Assignee(s):(std)**:** ARTHUR PERRIN ; PERRIN ARTHUR

Inventor(s):(std)**:** ARTHUR PERRIN ; PERRIN ARTHUR

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; FETHERSTONHAUGH AND CO; DAVID SCHUZ

Designated states: AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IL IS IT JP KE KG KP KR KZ LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TR TT UA UG UZ VN

International class (IPC 8–9): E04B1/00 E04B1/16 E04C2/04 E04C2/38 E04H1/00 (Advanced/Invention)

International class (IPC 1–7): E04B1/00 E04B1/16 E04B1/348 E04B1/35 E04C2/04 E04H1/00 E04H1/04

CPC: E04B1/165 E04C2/384

European class: E04B1/16D E04C2/38C

US class: 52/236.8 52/236.9 52/251 52/745.08 52/745.1

Classification Explorer

Cited documents: US5737895 A, US5657606 A, US5479749 A, US5371990 A, US5113631 A, US5048257 A, US4660331 A, US4625484 A, US4597813 A, US4525975 A, US4516372 A, US4461130 A, US4409764 A, US4398378 A, US4338759 A, US4330970 A, US4235054 A, US4211045 A, US4136495 A, US4107886 A, US4078345 A, US4078344 A, US3751864 A, US3698147 A, US3683577 A, US3678638 A, US3662506 A, US3645056 A, US3374592 A, US3149437 A, US2076877 A, US2076728 A, US2035697 A, US1219272 A, FR653447 A, FR2598448 A1,

Forward Citations: WO14056024, WO13075023, WO13075023, WO07080561, WO03097950, WO03097950, US9611644, US9593478, US9523188, US9493940, US9382709, US9328506, US9303379, US9062446, US9027307, US8978324, US8950132, US8701371, US8661755, US8621818, US8615933, US8584404, US8074414, US8006448, US8001740, US7963073, US7882665, US7874110, US7596922, US7178297, US7028435, US6820375, US6715241, US6627128, US6625937, US6609347, US6298617, US6058668, US5913788, US5867964, US2015093535, US2014030481,

US2012304563, US2011000147, US2010218443, US2010180519, US2010058693, US2009293420, US2009126312, US2008047225, US2007094946, US2007011965, US2005097844, US2004206011, US2004159052, US2004083663, US2003230038, US2003200711, US2003159366, US2003154674, SG131743, NL2008601,

Abstract:
Source: US5737895A A monolithic, reinforced concrete framework for a multilevel, multi−unit building results from the utilization of factory prefabricated and finished wall panels, floor/ceiling panels and utility core modules, the juxtaposition of which, without forms, defines volumetric beam voids. The beam voids are exterior to the wall panels, floor/ceiling panels and core modules. Wall panels include light gage studs, which are loadbearing studs, and light gage column frames. Beam voids and column frames for a building level are poured with concrete at one time. Each building level is erected and poured in one day; and the next level can commence the following morning, without need for exterior scaffolds. The beams and columns carry the weight of the building down into the foundation.

0) US4783940A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

3) Family number: 2207975 (US4783940A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority: JP19850299530 19851228 JP19860009695 19860120 JP19860010882 19860121

Family:

Publication number	Publication date	Application number	Application date
GB2184759 A1	19870701	GB19860030842	19861224
GB2184759 B2	19900718	GB19860030842	19861224
GB8630842 A0	19870204	GB19860030842	19861224
JP1744818 C3	19930325	JP19850299530	19851228
JP1756775 C3	19930423	JP19860009695	19860120
JP1756776 C3	19930423	JP19860010882	19860121
JP4028059 B4	19920513	JP19850299530	19851228
JP4048138 B4	19920805	JP19860009695	19860120
JP4048139 B4	19920805	JP19860010882	19860121
JP62160336 A2	19870716	JP19850299530	19851228
JP62170634 A2	19870727	JP19860009695	19860120
JP62170635 A2	19870727	JP19860010882	19860121
US4783940 A	19881115	US19860946713	19861224

Probable Assignee: SHIMIZU CONSTRUCTION CO LTD

Assignee(s):(std)**:** SHIMIZU CONSTRUCTION CO LTD

Assignee(s): SHIMIZU CONSTR CO LTD ; SHIMIZU CONSTRUCTION CO

Inventor(s):(std)**:** ITO TORU ; NAKAJIMA HIDEO ; NAKAJIMA HIDEOP ; NAKAMURA KOICHI ; NAKAMURA YASUKAZU ; ORITO YOSHIHIRO ; SAITO YUTAKA ; SATO TAKANORI ; WATANABE YASUSHI

Inventor(s): YASUKAZU NAKAMURA ; YASUSHI WATANABE ; YOSHIHIRO ORITO ; YUTAKA SAITO ; HIDEO NAKAJIMA ; HIDEOP NAKAJIMA ; ITO TOORU ; TAKANORI SATO ; TORU ITO

International class (IPC 8–9): E02D5/30 E04B1/16 E04B1/24 E04B1/30 E04B1/58 E04C3/30 E04C3/34 E04G21/14 (Advanced/Invention) ; E02D5/24 E04B1/16 E04B1/24 E04B1/30 E04B1/58 E04C3/30 E04G21/14 (Core/Invention)

International class (IPC 1–7): E02D5/30 E02D5/58 E04B1/16 E04B1/30 E04C3/10 E04C3/30 E04C3/34 E04G21/14

CPC: E04B1/2403 E04B2001/2406 E04B2001/2454 E04B2001/246 E04C3/34

European class: E04B1/24B E04C3/34 P04B1/24B2 P04B1/24B42 P04B1/24B51

US class: 264/228 52/223.4 52/223R 52/721.4 52/725 52/742.14 52/834

Classification Explorer

Cited documents: US836673 A, US4694622 A, US4407106 A, US4281487 A, US4166347 A, US4018055 A, US4016701 A, US3991532 A, US3963056 A, US3828504 A, US3793794 A, US3382680 A, US3058264 A, US2698519 A, US2176007 A, US1571091 A, US1432192 A, US1190002 A, FR1540495 A, DE2723534 A1,

Forward Citations: WO9851883, WO07134436, WO06090048, WO04016882, US8915043, US8745959, US8683774, US8393118, US8225581, US8201332, US8104242, US7947471, US7143554, US7107730, US6938392, US6903069, US6189286, US6119425, US6083589, US6061992, US4864797, US2012124937, US2009281022, US2009075331, US2009038263, US2008313907, US2008064068, US2008006002, US2007122884, US2007028541, US2006194289, US2005075289, US2004185535, US2004134146, US2002137673, JP63223250, JP2010261270, JP1290856, FR2882421, ES2116832, EP0290884, DE102006041741, CN104675019, CN104328863, CN104328862, CN104295002, CN104295002, CN103061454,

Abstract:
Source: US4783940A A concrete filled steel tube column which includes: a steel tube connected to beams of a structure so that an axial compressive load is transferred from the beams to the steel tube; and a concrete core, disposed within the steel tube, for bearing an axial compressive load transferred from the beams via the steel tube to the concrete core. The steel tube has a plurality of prestressed tube pieces concentrically joined in series. Each of these tube pieces has an axial prestress introduced into it to counteract a stress resulting from the compressive load applied to the steel tube. With this arrangement, substantially no axial stress is induced in the steel tube. In constructing the column, a steel tube piece is erected, and beams are joined to the tube piece. An axial tensile load is applied to the tube piece so that an axial stress is induced in the tube piece. After the application of the load, concrete is charged into the tube piece. After the concrete is cured, the tensile load is released from the tube piece so that the concrete core is subjected to an axial compression as a reaction to the application of an axial tension to the tube piece. Another tube piece is coaxially joined to an upper end of the concrete filled tube piece. Thereafter, the above−mentioned steps from the beam−joining step to the tube piece−joining step are repeated a plurality of times.

0) US2002000506A – PRE–CAST CONCRETE PANELS FOR CONSTRUCTION OF A ...

4) Family number: 24676572 (US2002000506A) © PatBase

Title: PRE–CAST CONCRETE PANELS FOR CONSTRUCTION OF A BUILDING

Priority: MY19950002668 19950908 MY20010002228 20010511 US20060352463 20060210 US20010819995 20010328 US20010874938 20010604 US19980011420 19980430 WO1996SG00012 19960907 WO2002SG00052 20020401

Family:

Publication number	Publication date	Application number	Application date
AP1026 A	20011119	AP19980001189	19960907
AP9801189 A0	19980331	AP19980001189	19960907
AR003528 A1	19980805	AR19960104268	19960906
AU199673571 A1	19970409	AU19960073571	19960907
AU2002256963 AA	20021125	AU20020256963	20020401
AU727062 B2	20001130	AU19960073571	19960907
BRPI9610515 A	19990330	BR1996PI10515	19960807
CA2231463 AA	19980227	CA19962231463	19960907
CA2426566 AA	20030416	CA20022426566	20020401
CN1080800 C	20020313	CN19961096815	19960907
CN1196104 A	19981014	CN19961096815	19960907
CN1267260 C	20060802	CN20028002366	20020401
CN1464825 A	20031231	CN20028002366	20020401
EA000593 B1	19991229	EA19980000277	19960907
EA005174 B1	20041230	EA20030000494	20020401
EA199800277 A1	19981029	EA19980000277	19960907
EA200300494 A1	20031225	EA20030000494	20020401
EP0848772 A1	19980624	EP19960935767	19960907
EP0848772 A4	19981230	EP19960935767	19960907
EP1385681 A1	20040204	EP20020726549	20020401
ID16004 A	19970828	ID19960002511	19960903
IN00394MN2003 A	20060505	IN2003MN00394	20030409
IN01912DE1996 A	20051014	IN1996DE01912	19960827
IN210502 B	20081024	IN2003MN00394	20030409
IN243679 B	20101105	IN1996DE01912	19960827
JP11512502 T2	19991026	JP19970512654T	19960907
JP2004520206 T2	20040708	JP20020589227T	20020401
KR19990044195 A	19990625	KR19980701431	19980226
MY135260 A	20080331	MY20010002228	20010511
NZ320768 A	19990830	NZ19960320768	19960907
OA12524 A	20060531	OA20031000111	20020401
TH31846 A	19990125	TH19961002836	19960823
TW352398 B	19990211	TW19960110350	19960826
US2002000506 AA	20020103	US20010874938	20010604
US2002005021 AA	20020117	US20010819995	20010328
US2006180736 AA	20060817	US20060352463	20060210
US6223480 BA	20010501	US19980011420	19980430
US7121520 BB	20061017	US20010874938	20010604
VN3122 A1	20021225	VN19980000312	19980408
WO02092306 A1	20021121	WO2002SG00052	20020401
WO9711237 A1	19970327	WO1996SG00012	19960907

ZA200302764 A	20040716	ZA20030002764	20030409	
ZA9607555 A	19970620	ZA19960007555	19960906	

Probable Assignee: O STABLE PANEL SDN BHD

Assignee(s):(std)**:** AH KIM KHOO ; CHIU TIEN ; KANDIAH AND ASSOCIATES SDN BHD ; KHOO T ; KHOO A K ; KIM KHOO AH ; KHOO TIAN ; KHOO TIAN AND O STABLE PANEL BUILDING SDN BHD ; STABLE PANEL SDN BHD O ; TIAN KHOO ; STABLE PANEL PTE LTD O ; STABLE PANEL SND BHD O ; STABLE PANEL CO LTD O ; PANEL SDN BHD O STABLE ; TIAN THOO ; O STABLE PANEL SDN BHD ; O STABLE PANEL PTE LTD ; KHOO AH KIM

Assignee(s): O STABLE PANEL CO LTD ; O STABLE PANEL SND BHD ; VERCO DECKING INC ; O–Stable Panel SDN. BHD. ; Tian ; KHOO TIAN KHOO AH KIM ; KHOO TIAN ; O STABLE PANEL SDN.BHD ; Khoo ; CHIU TIENMY

Inventor(s):(std)**:** KHOO AH KIM ; KHOO TIAN ; CHIU TIEN ; TIAN KHOO ; THIAN KHOO

Inventor(s): Khoo ; O STABLE PANEL SDN.BHD ; Tian

Agent(s): PHILLIPS ORMONDE FITZPATRICK; MADDERNS PATENT AND TRADE MARK ATTORNEYS; BERESKIN AND PARR; GOWLING LAFLEUR HENDERSON LLP; TOWNSEND AND TOWNSEND AND CREW LLP; HARRIS FIRM

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

International class (IPC 8–9): B28B7/00 B28B7/02 E04B1/02 E04B1/04 E04B1/16 E04B1/343 E04B1/38 E04B2/00 E04B2/24 E04B2/68 E04B2/86 E04B5/02 E04B5/14 E04B5/19 E04B5/23 E04B5/43 E04B7/20 E04C2/00 E04C2/04 E04C2/06 E04C2/38 E04C2/52 E04G11/00 E04G21/16 E28B7/02 (Advanced/Invention);
E04B1/04 E04B5/38 E04C2/00 E04C2/06 (Advanced/Non–invention);
B28B7/00 B28B7/02 E04B1/02 E04B5/02 E04C2/04 E04G21/16 (Core/Invention);
E04B1/02 E04C2/00 (Core/Non–invention)

International class (IPC 1–7): B28B7/02 E04B01/04 E04B1/00 E04B1/02 E04B1/04 E04B1/16 E04B1/32 E04B1/343 E04B13/43 E04B2/00 E04B2/52 E04B2/68 E04B5/02 E04B5/04 E04B5/17 E04B5/23 E04C2/00 E04C2/04 E04C2/06 E04C2/34 E04C2/54 E04C3/34 E04G11/00 E04G21/00 E04G23/00 E04H1/00 E04H12/00 E04H14/00 E04H3/00 E04H5/00 E04H6/00

CPC: B28B7/02 E04B1/04 E04B5/043 E04C2/044 E04C2002/008 B28B7/0017 E04G21/16 E04B5/04 B28B7/0032 B28B7/0091 B28B7/164 B28B7/346

European class: B28B7/00A7A B28B7/00B2 B28B7/00H B28B7/02 B28B7/16C B28B7/34D E04B1/04 E04B5/04 E04B5/04H E04C2/04D E04G21/16 P04C2/00B2

US class: 249/155 249/155P 249/157 249/158 249/162 249/168 249/18 249/188 249/188S 249/18P 52/234 52/236.8 52/236.9 52/24 52/240 52/241 52/25 52/250 52/251 52/258 52/259 52/262 52/271 52/284 52/300 52/600 52/606 52/648.1 52/650.1 52/651.07 52/721.1 52/721.2 52/724.1 52/745.05 52/745.09 52/745.17 52/783.1 52/79.14 52/79.9 52/795.1 52/799 52/86

Classification Explorer

Cited documents: WO9417259 A1, US963368 A, US896330 A, US799493 A, US6397469 BB, US6212932 BA, US6115898 A, US6092270 A, US6082059 A, US5984563 A, US5927028 A, US5787617 A, US5761862 A, US5758461 A, US5737819 A, US5727302 A, US5548937 A, US5489164 A, US5479687 A, US5435049 A, US5431089 A, US5372349 A, US5332191 A, US5208973 A, US5177861 A, US5165213 A, US4942707 A, US4925556 A, US4918898 A, US4757609 A, US4492552 A, US4459735 A, US4398378 A, US4307553 A, US4186535 A, US4171599 A, US4159100 A, US4147009 A, US4141532 A, US3952471 A, US3931951 A, US3919820 A, US3910000 A, US3821869 A, US3803788 A, US3759002 A, US3732052 A, US3685241 A, US3662506 A, US3645056 A, US3641729 A, US3604169 A, US3535841 A, US3217375 A, US3035375 A, US2940295 A, US2708359 A, US2218694 A, US2043697 A, US1982217 A, US1928217 A, US1924801 A, US182193 A, US1726169 A, US1530489 A, US1072293 A, JP7229240 A2, JP7229203, GB650634 A, GB1402259 A, FR938349 A, FR67923 E, FR67923, FR4267923, FR2495207 A1, FR2488930 A1, FR2467923 A2, FR2441127 A1, FR1006076 A, EP0080980 A1, DE4323011 A1, DE3424430 A1, DE3038871 A1, DE2728911 A1, DE2430635 A1, DE2155456 A1, DE1609630 A1, CH447543 A, CH447543, AU344351 A1, AU2706267 A1, AU2706267 A1,

Forward Citations:

USD611673, USD585568, US9487943, US9038339, US8931752, US8863445, US8844223, US8613418, US8485494, US8359797, US8307601, US8162638, US8074414, US8025493, US7802409, US7665712, US7472520, US6854223, US6457288, US2014259979, US2012181416, US2012047835, US2012047816, US2011253879, US2011173919, US2011131908, US2010180519, US2010164140, US2009313924, US2009173872, US2009173871, US2008005990, US2007062142, US2006207206, US2006174569, FR2889548, EP2402525, CN104695557, CN104695557, CN104675014, CN104675012, CN103938796, CN103711308, CN103711245, CN103711245, CN103213189, CN103213189, CN103088922, CN102909777, CN102720360, CN102720360, BE1015668,

Abstract:
Source: US2002000506A A formwork for precast concrete panel comprises of a quadrangle panel with a base and four side panels. The formwork (10) comprises of a base (14), which is provided with an island region (20) and/or a mound region (22), a pair of parallel fixed spaced apart side panels (16) and a pair of parallel moveable side panels (18). The island region (20) and/or mound region (22) is positioned between the parallel moveable paced apart side panels (18) and wherein said parallel moveable spaced apart side panel (18) are removeably secured to the parallel fixed spaced apart side panels (16) in a tight manner in any desired distance from the center of the island (20) and/or mound (22) region.

0) US2002064426A – COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR...

5) Family number: 34422367 (US2002064426A) © PatBase

Title: COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR METAL PLATE ARCH–TYPE STRUCTURES

Priority: JP19980501014 19970611 JP19980501014 19970611 US19980097860 19980616 WO1997CA00407 19970611 US19960662070 19960612 US19970662070 19970612

Family:

Publication number	Publication date	Application number	Application date
AU199730211 A1	19980107	AU19970030211	19970611
AU715030 B2	20000113	AU19970030211	19970611
BRPI9709714 A	20000111	BR1997PI09714	19970611
CA2255903 AA	19981124	CA19972255903	19970611
CA2255903 C	20030325	CA19972255903	19970611
CN1125908 C	20031029	CN19971095436	19970611
CN1221467 A	19990630	CN19971095436	19970611
DE69715194 D1	20021010	DE19976015194	19970611
DE69715194 T2	20030430	DE19976015194T	19970611
EP0904465 A1	19990331	EP19970924831	19970611
EP0904465 B1	20020904	EP19970924831	19970611
ES2182082 T3	20030301	ES19970924831T	19970611
JP2000511978 T2	20000912	JP19980501014T	19970611
JP2007071022 A2	20070322	JP20060343624	20061220
JP4031811 B2	20080109	JP20060343624	19970611
JP4031811 B2	20080109	JP20060343624	20061220
JP4035168 B2	20080116	JP19980501014	19970611
KR20000016602 A	20000325	KR19980710198	19981212
NO318605 B1	20050418	NO19980005825	19981211
NO985825 A	19981215	NO19980005825	19981211
NO985825 A0	19981211	NO19980005825	19981211
NZ333129 A	20000327	NZ19970333129	19970611
PL184271 B1	20020930	PL19970330546	19970611
PL330546 A1	19990524	PL19970330546	19970611
PT904465 T	20030131	PT19970924831T	19970611
RU2244778 C2	20050120	RU19990100392	19970611
RU99100392 A	20001027	RU19990100392	19990112
US2002064426 AA	20020530	US19980097860	19980616
US5833394 A	19981110	US19960662070	19960612
US6595722 BB	20030722	US19980097860	19980616
WO9747825 A1	19971218	WO1997CA00407	19970611

Probable Assignee: AIL INT INC

Assignee(s):(std)**:** AIL INTERNAT CORP ; AIL INTERNAT INC ; WILSON MICHAEL W ; AIL INTERNATIONAL INC ; AIL INTERNATL INC

Assignee(s): MICHAEL W WILSON ; MCCAVOUR THOMAS C ; AIL INTERNATIONAL INC NEW BRUNSWICK ; AIL INTERNATIONAL INC SACKVILLE ; AIL INTERNATIONAL CORP ; AIL INT ; AIL INT INC

Inventor(s):(std)**:** MCCAVOUR THOMAS C ; MCCAVOUR C ; MAKKAVUR TOMAS S

Inventor(s): THOMAS C MCCAVOUR

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SIM AND MCBURNEY

Designated states:	AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN YU
International class (IPC 8–9):	E01D4/00 E01F5/00 E02D29/045 E03F3/04 E04B1/32 E21D11/20 (Advanced/Invention); E01D4/00 E02D29/045 E03F3/04 (Advanced/Non–invention); E01D4/00 E01F5/00 E02D29/045 E03F3/04 E21D11/14 (Core/Invention)
International class (IPC 1–7):	E01D4/00 E01F5/00 E02D E02D29/045 E02D29/45 E03F3/00 E03F3/04 E04B1/32 E21D11/20
CPC:	E01F5/005 E02D29/045
European class:	E01F5/00B E02D29/045
US class:	405/126 405/288
Classification Explorer	
Cited documents:	US5375943 A, US5326191 A, US4563107 A, US4390306 A, US4318635 A, US4186541 A, US4141666 A, US4099386 A, US4099359 A, US3855801 A, US3673806 A, US3509725 A, US3508406 A, US2067493 A, GB2140848 A1, FR2508072 A1, DE2657229 A1, CA862402 A,
Forward Citations:	WO14134859, WO13023275, WO11092331, WO11092331, WO10056691, WO07073075, WO07073017, WO07021114, WO07003044, USD566852, US9617750, US9163392, US9151577, US9088142, US9085977, US9038328, US8955262, US8256173, US8220220, US8157475, US7861346, US7217064, US7056064, US7052209, US7052209, US6550816, US6050746, US2015252579, US2015007758, US2012301223, US2012020738, US2011250024, US2010122504, US2009214297, US2008307744, US2008298903, US2007000077, US2006150567, US2003136455, RU2593854, RU2471039, RU2471038, RU2471037, RU2471036, RU168800, KR20090091052, KR101654931, KR100837212, ITRM20090259, ES2330397, EP2354447, EP1966450, EP1966450, EP1896659, EP1896659, EA017922, CN105544608, CN105484759, CN105442463, CN105401596, CN104213515, CN103276675, CN103161349, CN103161349, CN103114520, CN102433846, CN102359062, CN102322275, CN102322275, AU2009200615,

Abstract:
Source: US2002064426A A composite concrete reinforced corrugated metal arch–type structure comprises: i) a first set of shaped corrugated metal plates interconnected in a manner to define a base arch structure with the corrugations extending transversely of the longitudinal length of the arch; ii) a second series of shaped corrugated metal plates interconnected in a manner to overlay the first set of interconnected plates of the base arch, the second series of plates having at least one corrugation extending transversely of the longitudinal length of the arch with the troughs of the corrugation of the second series of plates secured to the crests of the first set of plates; iii) the interconnected series of second plates and the first set of plates define individual, transversely extending, enclosed continuous cavity filled with concrete to define an interface of the concrete enclosed by the metal interior surfaces of the second series of crests and first set of troughs; iv) the interior surfaces of the cavity for each of the first and second plates having means for providing a shear bond at the concrete–metal interface to provide individual curved beams traversing the arch whereby the structure provides positive and negative bending resistance and combined bending and axial load resistance to superimposed loads.

0) US2008028694A – CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM ...

6) Family number: 33691240 (US2008028694A) © PatBase

Title: CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM

Priority: CA20052506928 20050509 CA20062545924 20060505 WO2006CA00718 20060505

Family:

Publication number	Publication date	Application number	Application date
CA2506928 AA	20061109	CA20052506928	20050509
CA2506928 C	20121218	CA20052506928	20050509
CA2545924 AA	20061109	CA20062545924	20060505
US2008028694 AA	20080207	US20070797585	20070504
US2009159864 AA	20090625	US20060913742	20060505
US8132792 BB	20120313	US20060913742	20060505
WO06119613 A1	20061116	WO2006CA00718	20060505

Probable Assignee: HIGHLAND SAFETY SYSTEMS LTD

Assignee(s):(std): PERRIS KEVIN ; XILE INNOVATIONS INC ; SAFETY IN A SECOND LTD ; WASITIS ROBERT

Assignee(s): SWAROVSKI OPTIK KG ; XILE INNOVATIONS INC91 BANCHORY CRESCENTKANATAO1K2K 2V2CA ; SAFETY IN A SECOND LTD91 BANCHORY CRESCENTOTTAWAO1K2K 2V2CA ; PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA ; HIGHLAND SAFETY SYSTEMS LTD ; HIGHLAND SAFETY SYSTEMS LTDUNKNOWNUNKNOWN

Inventor(s):(std): PERRIS KEVIN ; WASITIS ROBERT

Inventor(s): PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA

Agent(s): CASSAN MACLEAN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04G21/24 E04G21/28 E04G21/32 E04G3/22 E04G5/14 E04H17/14 (Advanced/Invention); E04G21/24 E04G21/32 E04H17/14 (Core/Invention)

CPC: E04G21/28 E04G21/3261 Y10S256/06 E04G2005/148 E04G21/3223 E04G21/3233 E04G21/3238 E04G21/3276

European class: E04G21/28 E04G21/32B6 E04G21/32B6B E04G21/32F

US class: 135/115 135/119 182/113 182/82 256/59 256/59P 256/65.06 256/65.14 256/DIG.6 52/127.4

Classification Explorer

Cited documents: US6904720 BA, US6758306 BB, US6679482 BB, US6336623 BA, US6296003 BA, US6220577 BA, US6170502 BA, US6053281 A, US6039150 A, US6038829 A, US6015139 A, US6003629 A, US5896944 A, US5819474 A, US580311 A, US5711398 A, US5647451 A, US5573227 A, US5456451 A, US5431372 A, US5358025 A, US5314167 A, US5299655 A, US4979725 A, US4875549 A, US4830341 A, US4815562 A, US4798220 A, US4787475 A, US4766918 A, US4631765 A, US3995833 A, US3858364 A, US3805816 A, US3782110 A, US3776521 A, US3589682 A, US3561518 A, US3480257 A, US3480069 A, US3251399 A, US3121470 A, US2006249721 AA, US2002095898 AA, CA917973 A1, CA917972 A1, CA2393092 AA, CA2237418 AA, CA2206676 AA, CA2162526 AA, CA1299002 A1, CA1026604 A1, CA1013981 A1,

Forward Citations: WO15044631, WO09052575, WO09037393, WO09037393, USD659261, US9631396, US9441384, US9376832, US9371666, US2017138070, US2017096836, US2016194889, US2016069102, US2015315810, US2015275533, US2015176292, US2013240817, US2013153843, US2013037770, US2012074366, US2011204307, US2010171085, GB2443884, FR2939463, FR2919642, CN103526892, CN103526892, CH700844, AU2008100068, AU2007101042,

Abstract:
Source: US2008028694A A weather shield to protect workers and materials in a structure under construction from inclement weather while selectively providing stress relief to the weather shield from high winds in order to prevent damage to the weather shield is disclosed. The weather shield comprises a sheet of substantially flexible, substantially weatherproof material having a closeable opening for wind relief. The sheet protects the structure from inclement weather when the closeable opening is closed. When the closeable opening is open, it allows the passage of wind therethrough thereby tending to avoid wind damage to the weather shield. A temporary shelter for a structure under construction having a plurality of temporary guard rail supports and a weather shield is also disclosed, as well as a temporary shelter kit having a plurality of temporary guard rail supports and a weather shield.

0) AU2016200245A – PERMANENT FORMWORK SYSTEM FOR BUILDING OF COLUM...

7) Family number: 62976561 (AU2016200245A) © PatBase

Title:	Permanent Formwork System for Building of Columns and Beams
Priority:	AU20150900051 20150106 AU20160200245 20160106

Family:

Publication number	Publication date	Application number	Application date
AU2016200245 AA	20160721	AU20160200245	20160106

Probable Assignee:	PANTANO INVEST PTY LTD
Assignee(s):(std)**:**	PANTANO INVEST PTY LTD
Assignee(s):	PANTANO INVESTMENTS PTY LTD
Inventor(s):(std)**:**	PANTANO ANTONIO
Agent(s):	PANTANO INVESTMENTS PTY LTD; PIPERS
International class (IPC 8–9):	E04G13/02 E04G13/04 (Advanced/Invention)

Classification Explorer

Abstract:
Source: AU2016200245A Permanent formwork for the creation of a steel–reinforced beam or column comprising four corner panels separated where necessary by the inclusion of spacer panels; said corner panels being formed from a single sheet and folded through 90 degrees, their 5 upper and lower (end) edges being folded inwardly through 90 degrees to create attachment flanges; said spacer panels being made from a single sheet and having the same length as said corner panels, their ends being similarly formed into attachment flanges, the longitudinal (side) edges of said corner panels and said spacer panels being turned through 90 degrees to create attachment panels; steel reinforcing bar to reinforce 10 said beam or column being made up into a rigid assembly contained within a cage of lighter bar and retained in the desired positions by the outer surfaces of said steel reinforcing bar abutting the inwardly–projecting ends of said attachment panels. Sheet 1 of 9 ss ss o o o o\ o

0) US2016079741A – VARIOUS METHODS AND APPARATUSES FOR A LOW PROFI...

8) Family number: 61863690 (US2016079741A) © PatBase

Title: VARIOUS METHODS AND APPARATUSES FOR A LOW PROFILE INTEGRATED POWER DISTRIBUTION PLATFORM

Priority: US20140051828P 20140917 US20150644065 20150310 WO2015US50007 20150914

Family:

Publication number	Publication date	Application number	Application date
CA2961591 AA	20170316	CA20152961591	20150914
US2016079741 AA	20160317	US20150644065	20150310
US9431798 BB	20160830	US20150644065	20150310
WO16044172 A1	20160324	WO2015US50007	20150914

Probable Assignee: ROSENDIN ELECTRIC INC

Assignee(s):(std): ROSENDIN ELECTRIC INC

Assignee(s): BMO HARRIS BANK NA AGENT AS ; ENGLERT MATTHEW JOHN ; GROH MICHAEL ; LOERA JOHN MANUAL

Inventor(s):(std): ENGLERT MATTHEW JOHN ; GROH MICHAEL ; LOERA JOHN MANUAL

Agent(s): SMART AND BIGGAR; RUTAN AND TUCKER LLP; FERRILL THOMAS S

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): H02B1/21 H02B1/30 H02B1/34 H02B3/00 H05K7/14 (Advanced/Invention); H05K7/02 (Advanced/Non–invention)

CPC: H02B1/34 H02B1/305 H02B1/21 H02B3/00 H05K7/1492

US class: 1/1 29/825 361/624

Classification Explorer

Cited documents: WO10138771 A1, US8683753 BB, US8681479 BB, US7990710 BB, US7855872 BB, US7823337 BB, US7646590 BA, US7511959 BB, US7278273 BA, US6967283 BB, US6657320 BA, US6570974 BA, US6542500 BA, US6480748 BA, US6269000 BA, US6201187 BA, US6019322 A, US6008971 A, US5778606 A, US5672920 A, US5477649 A, US5467609 A, US5345779 A, US5079890 A, US4918258 A, US4878653 A, US4214799 A, US4210772 A, US3924370 A, US3832605 A, US3643389 A, US3066898 A, US2014098470 AA, US2013293017 AA, US2012326504 AA, US2011084672 AA, US2010302744 AA, US2010102633 AA, US2009058098 AA, US2008060790 AA, US2008053698 AA, US2008030078 AA, US2006087122 AA, US2005078422 AA, US2005068716 AA, US2004231875 AA, US2003196402 AA, SG176227 A1, MX314849 A, CA2763033 AA, AU2010253865 AA,

Abstract:
Source: US2016079741A A method, apparatus, and system are described for a monolithic, pre–wired, pre–engineered, and pre–assembled integrated platform for a critical power supply and electrical distribution system that is scalable and modular. The skeletal framework of the integrated platform acts as an equipment support structure and includes an upper superstructure and a lower superstructure. Two or more cabinet enclosures are mounted onto the lower superstructure where their weight is supported by the skeletal framework. One or more National Electric Code approved (NEC–approved) electrical cable routing support systems are mounted onto the upper superstructure. The skeletal framework also includes one or more vertical columns that are connected between the upper superstructure and the lower superstructure. The skeletal framework and the cabinet enclosures are fabricated in place as a monolithic, pre–wired, pre–engineered, and pre–assembled integrated platform prior to being installed.

0) NZ621503A – HOLLOW SECTION STRUCTURAL MEMBER

9) Family number: 57316261 (NZ621503A) © PatBase

Title: HOLLOW SECTION STRUCTURAL MEMBER

Priority: AU20130900566 20130220 AU20140200899 20140220

Family:

Publication number	Publication date	Application number	Application date
AU2014200899 AA	20140904	AU20140200899	20140220
NZ621503 A	20150925	NZ20140621503	20140220

Probable Assignee: NEW ZEALAND STEEL LTD

Assignee(s):(std)**:** NEW ZEALAND STEEL LTD

Inventor(s):(std)**:** CLEMENTS NICHOLAS ALEXANDER STEPHEN ; NICHOLAS ALEXANDER STEPHEN CLEMENTS

Agent(s): GRIFFITH HACK

International class (IPC 8–9): E04B1/24 E04B1/30 E04C3/30 E04C3/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: NZ621503A A hollow section structural member 10 suitable to form an outer wall of a concrete–filled column in a framework of a multi–storey building, the hollow section structural member comprising two or more steel plates 12, 14 that form different portions of the hollow section structural member, at least one of the steel plates being folded and with the steel plates being welded together and forming the hollow section structural member, and connectors fastened to a surface of one or more of the steel plates, and with at least one of the steel plates having one or more openings for (a) receiving a beam, (b) venting vapour from internally of the hollow section structural member, or (c) enabling drainage of water from internally of the member.

0) CN203145197U – EXTENSION–TYPE CONCRETE FILLED STEEL TUBE BEAM ...

10) Family number: 54613934 (CN203145197U) © PatBase

Title: EXTENSION–TYPE CONCRETE FILLED STEEL TUBE BEAM COLUMN NODE DEVICE

Priority: CN201320192581U 20130416

Family:

Publication number	Publication date	Application number	Application date
CN203145197 U	20130821	CN201320192581U	20130416

Probable Assignee: UNIV HARBIN SCIENCE AND TECH

Assignee(s):(std)**:** HARBIN UNIV OF SCIENCE AND TECHNOLOGY ; UNIV HARBIN SCIENCE AND TECH

Inventor(s):(std)**:** CHEN LI ; CHENG XINYU ; WANG SHENGBAO

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104032838, CN103741812, CN103628569, CN103628569, CN103556712, CN103510627,

Abstract:
Source: CN203145197U The utility model discloses an extension–type concrete filled steel tube beam column node device. As the tube wall of a concrete filled steel tubular column is thinner, a type B steel beam cannot be directly welded on the concrete filled steel tubular column; in a steel structure, when a concrete filled steel tubular column and type B steel beam structure is adopted, a beam column node is usually of an annular plate type, but the node sometimes cannot meet the requirement of a building in a residential housing, not only is an annular plate exposed indoors, but also an outer wall (especially a wall plate) is inconvenient to mount. The extension–type concrete filled steel tube beam column node device comprises a steel sleeve barrel (1), wherein the steel sleeve barrel is sleeved on a concrete filled steel tubular column (2) through plug welding; an upper cover plate (3), a lower cover plate (4) and a web plate (5) are welded on the steel sleeve barrel; a type B steel beam (6) is arranged between the upper cover plate and the lower cover plate; and the type B steel beam is connected with the web plate through a high–strength bolt (7). The utility model is used as a concrete filled steel tube beam column node device.

0) CN105019559A – FRAME JOINT OF RECTANGULAR CONCRETE–FILLED STEE...

11) Family number: 60697670 (CN105019559A) © PatBase

Title: FRAME JOINT OF RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN EMPLOYING KNEE–BRACING STIFFENED STEEL PLATES

Priority: CN201510287454 20150529

Family:

Publication number	Publication date	Application number	Application date
CN105019559 A	20151104	CN201510287454	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** GAN DAN ; HE ZIQI ; LIU JIEPENG ; YANG YUANLONG ; ZHOU XUHONG

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP6330563 A2, JP6272307 A2, JP2006336292 A2, CN203429890 U, CN202047523 U, CN103122676 A,

Abstract:
Source: CN105019559A The invention discloses a frame joint of a rectangular concrete–filled steel tube column employing knee–bracing stiffened steel plates. The frame joint comprises thin–walled rectangular steel tubes, cast–in–place concrete, I–steel beams and a knee–bracing steel plate stiffening rib.The knee–bracing stiffened steel plates are arranged in a joint core region and a plastic–hinge region for an end portion of a column steel tube. The stiffened steel plates and the inner wall of a steel tube are welded to three dividing points of a steel tube wall at 45–degree angles. The stiffened rectangular steel tubes and the I–steel beams are welded and are used for pouring concrete in order to form the frame joint of the rectangular concrete–filled steel tube column employing the knee–bracing stiffened steel plates.The frame joint of the rectangular concrete–filled steel tube column employing the knee–bracing stiffened steel plates has following beneficial effects: a novel joint form can effectively help delay local buckling of the steel tube, thereby improving constraint effect of concrete; tension of steel beam flanges can be effectively transferred by the knee–bracing steel plate stiffening rib and bending moment of the steel beams can be further effectively transferred such that the joint can satisfy the need of aseismic design; and the frame joint of the rectangular concrete–filled steel tube column employing the knee–bracing stiffened steel plates is novel framework node form featuring a fine mechanical property, convenient construction and economic feasibility.

0) CN106437032A – ASSEMBLED CONCRETE FILLED STEEL TUBULAR COLUMN ...

12) Family number: 65011357 (CN106437032A) © PatBase

Title:	ASSEMBLED CONCRETE FILLED STEEL TUBULAR COLUMN SPLICING STRUCTURE AND METHOD
Priority:	CN201610928313 20161031

Family:

Publication number	Publication date	Application number	Application date
CN106437032 A	20170222	CN201610928313	20161031

Probable Assignee:	UNIV HUAQIAO
Assignee(s):(std)**:**	HUAQIAO UNIV ; UNIV HUAQIAO
Inventor(s):(std)**:**	CUI PENGFEI ; HUO JINGSI ; LIANG DONG ; WANG HAITAO ; WEI ZHEN
International class (IPC 8–9):	E04B1/58 E04C3/34 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN106437032A The invention discloses an assembled concrete filled steel tubular column splicing structure and method. The assembled concrete filled steel tubular column splicing structure comprises prefabricated upper and lower concrete filled steel tubular columns, steel bars are embedded in the upper concrete filled steel tubular columns, and corrugated casing pipes are embedded in the upper concrete filled steel tubular columns. After the reserved corrugated casing pipes are filled with concrete grout in a constructions site, the embedded steel bars in the upper concrete filled steel tubular columns are inserted into the corrugated casing pipes to make the upper concrete filled steel tubular columns arranged on the lower concrete filled steel tubular columns and in butt joint with the lower concrete filled steel tubular columns, and then steel pipe connecting parts are welded to achieve concrete filled steel tubular column splicing. All the members used in the structure are assembled and connected in the site, a site formwork project and welding work are decreased, the industrialized assembling efficiency of a building is improved, and the energy–saving and environmentally friendly building design concept for sustainable development of building members is embodied.

13) Family number: 60664714 (CN204919805U) © PatBase

Title: A BUNDLED TUBE STEEL FRAMEWORK COMPOSITION STRUCTURE THAT IS USED FOR INDUSTRIALIZATION ASSEMBLED STEEL CONSTRUCTION HOUSE

Priority: CN201510445833 20150727 CN201520549180U 20150727

Family:

Publication number	Publication date	Application number	Application date
CN105002982 A	20151028	CN201510445833	20150727
CN204919805 U	20151230	CN201520549180U	20150727

Probable Assignee: YUNNAN CONSTRUCTION ENGINEERING STEEL STRUCTURE CO LTD

Assignee(s):(std)**:** YUNNAN CONSTRUCTION ENGINEERING STEEL STRUCTURE CO LTD

Assignee(s): YUNNAN CONSTRUCTION ENGINEERING STEEL LTD ; YUNNAN CONSTRUCTION ENGINEERING STEEL STRUCTURE CO

Inventor(s):(std)**:** GAO HUIBO ; HE LI ; LIU YI ; LUO JIANFENG ; MEI SHIQIANG ; NIU BEN ; SHU LICAI ; SUN KE ; WANG BIN ; WU BO ; ZHAO YISHENG ; ZHU WENWEI

International class (IPC 8–9): E04B1/19 (Advanced/Invention)

Classification Explorer

Cited documents: JP2115429 A2, JP11140978 A2, CN204919805 U, CN203654452 U, CN104775517 A, CN104100000 A, CN103334488 A, CN103015534 A,

Forward Citations: CN105002982,

Abstract:
Source: CN204919805U A bundled tube steel framework composition structure that is used for industrialization assembled steel construction house is including the steel frame (II) of a set of little close post frame bundled tube (I) and each frame bundled tube of connection, little close post frame bundled tube is by the first shaped steel post according to the modular system of construction equipartition and connect H shaped steel roof beam (IV) between first shaped steel post and enclose and set up jointly, the steel frame is constituteed in the second shaped steel post (II –1) of building wall handing –over department and the H shaped steel roof beam (II –2) of connection second shaped steel post by distributing, but second shaped steel post is middle airtight cavity concrete –filled's square steel tube, H shaped steel roof beam is high –frequency soldering H shaped steel or hot rolling H shaped steel or welding H shaped steel. The utility model discloses with the standard section bar member that the cross sectional shape is unchangeable, connect the key through the essential standard and assemble out the how different building structure system of house type, will constitute building structure's basic component modulization, standardization, batch production, reduced steel structural design and processing production cycle to component processingquality has been ensured.

0) CN104912206A – SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUM...

14) Family number: 60363643 (CN104912206A) © PatBase

Title: SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUMN–I–SHAPED STEAL BEAM FRAMEWORK NODE

Priority: CN201510288317 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104912206 A	20150916	CN201510288317	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** LIU JIEPENG ; LIU JINGCHEN ; XU CHUANGZE ; YANG YUANLONG ; ZHOU XUHONG

International class (IPC 8–9): E04B1/58 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, CN202544241 U, CN202139694 U, CN201433512 Y, CN103541512 A,

Abstract:
Source: CN104912206A The invention discloses a special–shaped concrete filled steel tube column–I–shaped steal beam framework node. The invention aims at solving the problems of strict anti–seismic design requirement and poor anti–seismic performance of a conventional reinforced concrete special–shaped column framework node, improving design indexes of the maximum use height and the column shaft compression ratio of a special–shaped column structure house and further promoting the use of the special–shaped column structure in a high–fortification–intensity region, and provides the special–shaped concrete filled steel tube column–I–shaped steal beam framework node. In order to reduce the relatively high steel consumption of the special–shaped concrete filled steel tube column and framework node and solve the local buckling problem of a column steel tube and a node steel plate, construction measures of installing pulling steel bar reinforcing ribs inside a special–shaped steel tube and installing vertical rib plates in beam column connecting positions are used; the constraint effect of the special–shaped steel tube on the concrete is improved; the bearing capability of a special–shaped concrete filled steel tube is further improved; meanwhile, the capability of the node for transmitting the internal force of the beam post is improved; and the anti–seismic capability of the special–shaped column framework node is further improved.

0) CN103306379A – MULTIDIRECTIONAL THROUGH CONCRETE FILLED STEEL ...

15) Family number: 54808984 (CN103306379A) © PatBase

Title: MULTIDIRECTIONAL THROUGH CONCRETE FILLED STEEL TUBULAR COLUMN BEAM JOINT PROVIDED WITH STEEL CORBELS AND RING BEAM

Priority: CN201310243017 20130619

Family:

Publication number	Publication date	Application number	Application date
CN103306379 A	20130918	CN201310243017	20130619

Probable Assignee: TAIXING FIRST CONSTR INSTALLATION CO LTD

Assignee(s):(std)**:** TAIXING FIRST CONSTR INSTALLATION CO LTD ; TAIXING FIRST CONSTRUCTION INSTALLATION CO LTD

Assignee(s): TAIXING FIRST CONSTRUCTION INSTALLATION CO

Inventor(s):(std)**:** CHEN JUNYI ; WU YAN ; ZHAO JIANPING ; ZHOU JISHENG ; ZONG LIANMING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2006188864 A2, CN2697175 Y, CN203320701 U, CN200999389 Y, CN103046751 A,

Abstract:
Source: CN103306379A The invention relates to a multidirectional through concrete filled steel tubular column beam joint provided with steel corbels and a ring beam. The multidirectional through concrete filled steel tubular column beam joint comprises a plurality of steel corbels and the ring beam, wherein the steel corbels are radially connected to a steel tubular column; inner ends of the plurality of the steel corbels penetrate through the steel tubular column and are mutually welded and connected in the steel tubular column, and outer ends of the plurality of the steel corbels penetrate through the ring beam; the ring beam comprises a ring beam framework and inner concrete ring beam cores arranged in the ring beam framework; the ring beam framework comprises two layers of ring beam bottom ribs, two layers of ring beam top ribs and ring beam stirrups; a plurality of reinforcing steel bar rings of each layer of ring beam bottom ribs and each layer of ring beam top ribs are concentric, and are located on the same plane and bound by a plurality of stirrups; and the two layers of ring beam bottom ribs and the two layers of ring beam top ribs are bound by a plurality of the ring beam stirrups. The joint has the advantages that the joint is simple in structure, free of dense reinforcing steel bars and feeble fragile stress positions and stable in load transmitting, can safely and stably bear a frame beam, and is convenient to construct, short in period, low in cost and applicable to construction of high–rise and super high–rise buildings having multidirectional through concrete filled steel tubular column beam joints comprising steel corbels and ring beams.

16) Family number: 51904820 (CN202416584U) © PatBase

Title: Node between concrete filled steel tube composite column and frame girder

Priority: CN201120557110U 20111228

Family:

Publication number	Publication date	Application number	Application date
CN202416584 U	20120905	CN201120557110U	20111228

Probable Assignee: CHINA CONSTRUCTION FIRST GROUP THE SECOND CONSTRUCTION CO LTD

Assignee(s):(std)**:** CHINA CONSTRUCTION FIRST GROUP THE SECOND CONSTRUCTION CO LTD

Inventor(s):(std)**:** HAILIANG YU ; JINYUAN LI ; SONGMIN LI ; XICHEN BAO ; YOUQIN ZHANG

Inventor(s): YU HAILIANG ; ZHANG YOUQIN ; LI JINYUAN ; LI SONGMIN ; BAO XICHEN

International class (IPC 8–9): E04B1/41 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104563516, CN103216014, CN103216006, CN102425238,

Abstract:
Source: CN202416584U The utility model relates to a node between a concrete filled steel tube composite column and a frame girder. The node is a reinforced concrete annular beam, is annularly sleeved at the periphery of the concrete filled steel composite column and is cast by a steel bar framework and node region concrete in situ; the steel bar framework comprises an inner framework and an outer formwork, wherein the inner framework is composed of an annular main rib and a hooping rib sleeved on the annular main rib, the outer framework is formed by square construction ribs which are arranged along the height of the reinforced concrete annular beam; the inner framework and the outer framework are tied into a whole through radially–distributed L–shaped construction ribs; the main rib of the frame girder passes through the reinforced concrete annular beam and is anchored in the concrete filled steel composite column; and the main rib of the concrete filled steel tube composite column passes through the reinforced concrete annular beam in the overall length. The node is simple in form, can prevent the main rib of the frame girder from passing through the composite column, can ensure that the composite column can be closely combined with the frame girder, realizes the anti–seismic requirements of the core region of the node and can be widely applied to connection between composite column and the frame girder.

0) CN103306378A – CONSTRUCTION METHOD OF MULTIDIRECTIONAL THROUGH...

17) Family number: 54808959 (CN103306378A) © PatBase

Title: CONSTRUCTION METHOD OF MULTIDIRECTIONAL THROUGH CONCRETE FILLED STEEL TUBULAR COLUMN BEAM JOINT PROVIDED WITH STEEL CORBELS AND RING BEAM

Priority: CN201310243001 20130619

Family:

Publication number	Publication date	Application number	Application date
CN103306378 A	20130918	CN201310243001	20130619
CN103306378 B	20150401	CN201310243001	20130619

Probable Assignee: TAIXING FIRST CONSTR INSTALLATION CO LTD

Assignee(s):(std)**:** TAIXING FIRST CONSTR INSTALLATION CO LTD ; TAIXING FIRST CONSTRUCTION INSTALLATION CO LTD

Assignee(s): TAIXING FIRST CONSTRUCTION INSTALLATION CO

Inventor(s):(std)**:** CHEN JUNYI ; WU YAN ; ZHAO JIANPING ; ZHOU JISHENG ; ZONG LIANMING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP5018003 A2, CN2697175 Y, CN103046751 A, CN102433938 A,

Abstract:
Source: CN103306378A The invention relates to a construction method of a multidirectional through concrete filled steel tubular column beam joint provided with steel corbels and a ring beam. The joint comprises a plurality of steel corbels and the ring beam, wherein the steel corbels are radially connected to a steel tubular column; inner ends of the steel corbels penetrate through the steel tubular column and are mutually welded and connected in the steel tubular column, and outer ends of the plurality of steel corbels penetrate through the ring beam; the ring beam comprises a ring beam framework and inner concrete ring beam cores arranged in the ring beam framework; the ring beam framework comprises two layers of ring beam bottom ribs, two layers of ring beam top ribs and ring beam stirrups; a plurality of reinforcing steel bar rings of each layer of ring beam bottom ribs and each layer of ring beam top ribs are concentric, and are located on the same plane and bound by a plurality of stirrups; and the two layers of ring beam bottom ribs and the two layers of ring beam top ribs are bound by a plurality of the ring beam stirrups. The joint has the advantages that the joint is simple in structure, free of dense reinforcing steel bars and feeble fragile stress positions and stable in load transmitting, can safely and stably bear a frame beam, and is convenient to construct, short in period, low in cost and applicable to construction of high–rise and super high–rise buildings having multidirectional through concrete filled steel tubular column beam joints comprising steel corbels and ring beams.

0) JP5263470A – REINFORCED CONCRETE–FILLED STEEL PIPE COLUMN WI...

18) Family number: 10525916 (JP5263470A) © PatBase

Title: REINFORCED CONCRETE–FILLED STEEL PIPE COLUMN WITH RIGID JOINT MEMBER AND ITS CONSTRUCTION METHOD

Priority: JP19920058224 19920316

Family:

Publication number	Publication date	Application number	Application date
JP5263470 A2	19931012	JP19920058224	19920316

Probable Assignee: TAKENAKA CORP

Assignee(s): TAKENAKA CORP

International class (IPC 8–9): E04B1/30 E04B1/58 E04C3/34 (Advanced/Invention); E04B1/30 E04B1/58 E04C3/30 (Core/Invention)

International class (IPC 1–7): E04B1/30 E04C3/34

Classification Explorer

Abstract:
Source: JP5263470A PURPOSE: To improve structure safety and rigidity and dispense with a formwork, a timbering, and a fire–proof cover by protrusively fixing a rigid joint member made of a steel frame member at the middle or end section of a steel pipe column member, inserting reinforcing bars into the steel pipe column member, and placing concrete to integrate the steel pipe column member and the reinforcing bars. CONSTITUTION: An erection bar 3 constituted of a main reinforcement 4 and a spiral bar 5 fixed to the main reinforcement 4 at both ends is arranged in a steel pipe column member 2 having a square cross section. A rigid joint beam member 8 constituted of a short column section 9 made of H–shaped steel and a short beam section 10 made of I–shaped steel and integrated with the short column section 9 is formed, and many protruded members 9A are erected on the outer periphery of the short column section 9. The short column section 9 of the rigid joint beam member 8 is inserted into the spiral bar 5 of the steel pipe column member 2 and fixed to a jig 2A at the upper end of the steel pipe column member 2. Concrete 11 is placed in the steel pipe column member 2 to integrate the steel pipe column member 2, erection bar 3, and rigid joint beam member 8. A column 1 is integrated with the lower floor 6 via the protruded reinforcing bars 7 protruded from the lower floor 6.

0) CN103510627A – SLEEVE TYPE NODE FOR CONCRETE FILLED SQUARE STE...

19) Family number: 55602551 (CN103510627A) © PatBase

Title: SLEEVE TYPE NODE FOR CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND I–STEEL BEAM AND PROCESSING METHOD THEREOF

Priority: CN201310441085 20130925

Family:

Publication number	Publication date	Application number	Application date
CN103510627 A	20140115	CN201310441085	20130925

Probable Assignee: UNIV SHENYANG TECHNOLOGY

Assignee(s):(std)**:** SHENYANG UNIV OF TECHNOLOGY ; UNIV SHENYANG TECHNOLOGY

Inventor(s):(std)**:** WANG HAIJUN ; WEI HUA

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP5280769 B2, JP2009280971 A2, JP2003313951 A2, CN203531144 U, CN203145197 U, CN201738458 U, CN201722794 U, CN201485977 U, CN102936924 A, CN101942866 A,

Forward Citations: CN104499568,

Abstract:
Source: CN103510627A The invention provides a sleeve type node for a concrete filled square steel tubular column and an I–steel beam and a processing method thereof. The sleeve type node is mainly composed of a column component, a column wall sleeve, a flange side plate, a framework–shaped beam end and the I–steel beam. The column wall sleeve is welded on the outer wall of the column component of the concrete filled square steel tubular column and connected with the flange side plate and the framework–shaped beam end through weld joints, and the framework–shaped beam end is connected with the I–steel beam through stud welding. The sleeve type node for the concrete filled square steel tubular column and the I–steel beam has the advantages of being simple and reasonable in structure, large in rigidity, high in bearing capacity, good in anti–seismic performance and small in occupied space, enabling factory prefabrication to be easily achieved, facilitating utilization of an indoor space and installation of an outer wall board and the like and has good engineering application prospect.

0) CN204456661U – CONCRETE FILLED STEEL TUBULAR COLUMN

20) Family number: 59727319 (CN204456661U) © PatBase

Title: CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201520085943U 20150130

Family:

Publication number	Publication date	Application number	Application date
CN204456661 U	20150708	CN201520085943U	20150130

Probable Assignee: XIANGSHAN XINGQI ELECTRICAL APPLIANCE TECHNOLOGY CO LTD

Assignee(s):(std)**:** XIANGSHAN XINGQI ELECTRICAL APPLIANCE TECHNOLOGY C ; XIANGSHAN XINGQI ELECTRICAL APPLIANCE TECHNOLOGY CO LTD

Assignee(s): XIANGSHAN STAR FLAG ELECTRICAL TECHNOLOGY CO LTD ; XIANGSHAN XINGQI ELECTRICAL APPLIANCE TECHNOLOGY CO

Inventor(s):(std)**:** LI CHUNYA

International class (IPC 8–9): E04C3/36 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204456661U The utility model discloses a concrete filled steel tubular column which comprises a steel framework and concrete, wherein the steel framework comprises a peripheral rectangular steel tube, a circular steel tube, rib plates I, rib plates II, rib plates III, rib plates IV, T−shaped bracing ribs and a bracing stirrup; the circular steel tube is sleeved by the peripheral rectangular steel tube; the rib plates I and the rib plates II are used for connecting the peripheral rectangular steel tube with the circular steel tube; the rib plates III and the rib plates IV are fixed on the adjacent right−angle sides of the peripheral rectangular steel tube; the rib plates III and the rib plates IV are respectively fixed with the T−shaped bracing ribs; the bracing stirrup is located in the circular steel tube; the center axis of the peripheral rectangular steel tube and the center axis of the circular steel tube share a same straight line. By reasonably combining the steel tubes and the concrete, the steel tubes interact with each other and interact with the concrete, so that the bearing capacity, the shear capacity, the axial bearing capacity and the bending resistance of the concrete filled steel tubular column are improved.

0) CN101974958A – STEEL PIPE CONCRETE COLUMN OF I–SHAPED FRP SECT...

21) Family number: 48330603 (CN101974958A) © PatBase

Title:	STEEL PIPE CONCRETE COLUMN OF I–SHAPED FRP SECTION
Priority:	CN201010557207 20101124

Family:

Publication number	Publication date	Application number	Application date
CN101974958 A	20110216	CN201010557207	20101124

Probable Assignee:	UNIV SHENYANG JIANZHU
Assignee(s):(std):	SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU
Assignee(s):	SHENYANG JIANZHU UNIVERSITY
Inventor(s):(std):	CHUNYU ZHANG ; GUOCHANG LI
Inventor(s):	ZHANG CHUNYU ; LI GUOCHANG
International class (IPC 8–9):	E04B1/30 E04C3/34 (Advanced/Invention)
Classification Explorer	
Cited documents:	CN1987012 A, CN101736860 A, CN101177965 A, CN101117824 A,
Forward Citations:	CN105201143, CN103899040, CN103899040, CN102912883, CN102912883, CN102535748,

Abstract:
Source: CN101974958A The invention provides a steel pipe concrete column of an I–shaped fiber reinforce plastic (FRP) section and relates to a building member. The steel pipe concrete column consists of a rectangular, square or circular steel pipe, the I–shaped FRP section arranged in the steel pipe and concrete filled between the steep pipe and the I–shaped FRP section, wherein the steel pipe concrete column of the I–shaped FRP section is a coupled column consisting of three different materials of the FRP, the steel pipe and the concrete, namely the steel pipe concrete coupled column of the I–shaped FRP section; and the shape of the cross section of the steel pipe concrete column of the I–shaped FRP section has a rectangular structure, a square structure or a circular structure. Under the conditions of reasonable selection of steel ratio and distribution rate of the FRP, the cross section size of the column can be reduced; and a steel pipe framework can be temporarily supported during construction, so that the construction can be accelerated. The ductility of the column is improved because of the steel pipe so as to contribute to the aseismatic design of seismic areas. The characteristics of light weight and high strength of an FRP material is used to improve the bearing capacity of the column and increase the usable area.

0) CN104264794A – CONNECTION OF COLD–FORMED STEEL HOUSING BEAM AN...

22) Family number: 58210172 (CN104264794A) © PatBase

Title: CONNECTION OF COLD–FORMED STEEL HOUSING BEAM AND CONCRETE–FILLED SQUARE STEEL TUBULAR COLUMN AND CONNECTING METHOD OF CONNECTION

Priority: CN201410525115 20141008

Family:

Publication number	Publication date	Application number	Application date
CN104264794 A	20150107	CN201410525115	20141008
CN104264794 B	20160504	CN201410525115	20141008

Probable Assignee: UNIV SOUTHEAST

Assignee(s):(std)**:** SOUTHEAST UNIV ; UNIV SOUTHEAST

Inventor(s):(std)**:** CHEN WEI ; FENG RUOQIANG ; WANG XINGXING ; YE JIHONG

International class (IPC 8–9): E04B1/58 E04G21/14 (Advanced/Invention)

Classification Explorer

Cited documents: CN2436578 Y, CN103088914 A, CN102828560 A, CN102733492 A, CN102733484 A, CN102363979 A, CN102345326 A,

Abstract:
Source: CN104264794A The invention discloses a connection of a cold–formed steel housing beam and a concrete–filled square steel tubular column. The connection comprises a column connecting plate, a first beam connecting plate, a second beam connecting plate, a first stiffening rib, a second stiffening rib, a first sloping plate, a second sloping plate and a reinforcing block; the first beam connecting plate and the second beam connecting plate are parallel to each other and arranged on the same side of the column connecting plate with the first above the second; the first sloping plate is fixedly connected between the column connecting plate and the first beam connecting plate; the first stiffening rib is fixedly connected between the column connecting plate and the first beam connecting plate; the second sloping plate is fixedly connected between the column connecting plate and the second beam connecting plate; the second stiffening rib is fixedly connected between the column connecting plate and the second beam connecting plate; the reinforcing block is fixedly connected between the first beam connecting plate and the second beam connecting plate. The connection allows convenient installation of exterior wall plates; the connection can be integrated to the steel housing beam and the concrete–filled square steel tubular column to enhance structural integrity; meanwhile, a connecting method is provided and allows simple construction.

0) CN102635202A – CONCRETE REINFORCED COLUMN FOR STEEL FRAMEWORK ...

23) Family number: 51764113 (CN102635202A) © PatBase

Title: CONCRETE REINFORCED COLUMN FOR STEEL FRAMEWORK OF HYBRID FRP (FIBER REINFORCED PLASTIC) PIPE

Priority: CN201210126290 20120425

Family:

Publication number	Publication date	Application number	Application date
CN102635202 A	20120815	CN201210126290	20120425
CN102635202 B	20160217	CN201210126290	20120425

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std): BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Assignee(s): BEIJING UNIVERSITY OF TECHNOLOGY

Inventor(s):(std): RUI XIAO ; ZONGCAI DENG

Inventor(s): DENG ZONGCAI ; XIAO RUI

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: CN202117226 U, CN201460026 U, CN102425268 A, CN102392510 A, CN102392509 A, CN102108761 A,

Forward Citations: CN105133790, CN104679950, CN103924740, CN103899040, CN103899040, CN103669725, CN103669725, CN103485481, CN103452242, CN103452242, CN103452241, CN103452241,

Abstract:
Source: CN102635202A The invention provides a concrete reinforced column for a steel framework of a hybrid FRP (Fiber Reinforced Plastic) pipe and belongs to the field of buildings. The concrete reinforced column comprises a steel framework, a hybrid FRP pipe and concrete filled between the steel framework and the hybrid FRP pipe. Compared with the traditional steel pipe concrete reinforced column and a steel pipe high−strength concrete reinforced column, the concrete reinforced column can be used for improving the bearing force, the transformation capacity and the anti−vibration property. The concrete reinforced column provided by the invention is applicable to the technical field of structures of concrete reinforced columns, so that the concrete reinforced column not only can be used for a new construction structure but also can be used for reinforcing and hoisting engineering of the steel framework concrete reinforced column.

0) CN202611250U – CONCRETING PLATFORM FOR CONCRETE FILLED STEEL T...

24) Family number: 52632418 (CN202611250U) © PatBase

Title: CONCRETING PLATFORM FOR CONCRETE FILLED STEEL TUBE COLUMN

Priority: CN201220236736U 20120524

Family:

Publication number	Publication date	Application number	Application date
CN202611250 U	20121219	CN201220236736U	20120524

Probable Assignee: CHINA RAILWAY 12TH BUREAU GR

Assignee(s):(std)**:** 3RD ENG CO LTD OF CHINA RAILWAY 12TH BUREAU GROUP ; CHINA RAILWAY 12TH BUREAU GR ; THIRD ENGINEERING CO LTD OF CHINA RAILWAY 12TH BUREAU GROUP

Assignee(s): THIRD ENGINEERING CO ; CHINA RAILWAY 12TH BUREAU GROUP CO ; CHINA RAILWAY 12TH BUREAU GROUP CO LTD ; THE THIRD ENGINEERING CO LTD OF CHINA RAILWAY 12TH BUREAU GROUP

Inventor(s):(std)**:** LI HEPING ; TIAN XUDONG

International class (IPC 8–9): E04G21/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN202611250U The utility model specifically discloses a concreting platform for a concrete filled steel tube column and solves the problems that when an existing steel tube column needs to be filled with concrete, a scaffolding platform is erected and a crane is used for concreting, so the operation is time–consuming and labor–consuming, and the construction efficiency is affected. The concreting platform for the concrete filled steel tube column comprises a platform body in a framework structure, wherein a column guiding frame is arranged in the middle of the platform body, an operating deck is fixed at the bottom of the platform body at the left and the right sides of the column guiding frame, a fence fixedly connected with the platform body is arranged above the periphery of the operating deck, a funnel is fixedly arranged above the column guiding frame, and limit plates are hinged with the left and the right side of the column guiding frame. According to the concreting platform for the concrete filled steel tube column, the structural design is reasonable and reliable, the number of scaffolds in use is greatly reduced, the cost is saved, the labor force is saved, meanwhile the mounting and dismounting are convenient, and the concreting platform has the advantages of simple structure, convenience in operation, low cost and rapidness in turning and circulation.

0) CN203654455U – STEEL AND CONCRETE COMBINATION FRAME OF OPPOSIT...

25) Family number: 56053829 (CN203654455U) © PatBase

Title: STEEL AND CONCRETE COMBINATION FRAME OF OPPOSITELY–PENETRATING BOLT TYPE CONNECTION

Priority: CN201310598288 20131122 CN201320747374U 20131122

Family:

Publication number	Publication date	Application number	Application date
CN103669565 A	20140326	CN201310598288	20131122
CN103669565 B	20161130	CN201310598288	20131122
CN203654455 U	20140618	CN201320747374U	20131122

Probable Assignee: UNIV TSINGHUA

Assignee(s):(std)**:** TSINGHUA UNIV ; UNIV TSINGHUA

Inventor(s):(std)**:** HAN LINHAI ; LI WEI ; QIAN WEIWU ; ZHAO XIAOLIN

International class (IPC 8–9)**:** E04B1/19 E04B1/58 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP2003206569 A2, CN203654455 U, CN203238783 U, CN201474083 U, CN1603536 A, CN103306376 A, CN101624842 A,

Forward Citations: CN103669565, CN103669565,

Abstract:
Source: CN203654455U The utility model belongs to the field of structural engineering in civil engineering and discloses a steel and concrete combination frame of oppositely–penetrating bolt type connection. Oppositely–penetrating bolts penetrate through a hole in an end plate and a hole in an inner steel pipe column so that the end plate, the inner steel pipe column and a steel pipe part can be closely connected, then peripheral longitudinal ribs and stirrups are bounded to form a peripheral reinforcement cage, a pipe outer formwork is supported outside the peripheral reinforcement cage, pipe inner core concrete is poured into the inner steel pipe column, and a pipe outer concrete layer is poured into a pipe outer formwork so that a floor can be formed. The steel and concrete combination frame is high in rigidity, large in bearing force, good in fire resistance and simple and convenient to construct; concrete construction of the lower floor and the steel structure construction of the upper floor can be carried out at the same time, and the frame is suitable for a tall building structure; meanwhile, construction organization of the frame is efficient and fast, and the frame is suitable for the structure with the requirement for construction time.

0) CN106400960A – BUILDING FRAMEWORK

26) Family number: 64936649 (CN106400960A) © PatBase

Title: BUILDING FRAMEWORK

Priority: CN201610320732 20160516

Family:

Publication number	Publication date	Application number	Application date
CN106400960 A	20170215	CN201610320732	20160516

Probable Assignee: SUZHOU SHIHAO ENERGY SAVING MACHINERY MFG CO LTD

Assignee(s):(std)**:** SUZHOU SHIHAO ENERGY SAVING MACHINERY MFG CO LTD

Assignee(s): SUZHOU GOOD ENERGY SAVING MACHINERY MFG CO ; SUZHOU SHIHAO ENERGY SAVING MACHINERY MFG CO

Inventor(s):(std)**:** SHI SHIYING ; SHI XITING ; SHI XIZHEN

International class (IPC 8–9)**:** E04B1/30 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN106400960A The invention relates to a building framework. The building framework is applied to a building of a concrete–filled steel tube structure. The building framework is formed by setting up stand column steel tubes, ring beam steel tubes and floor beam steel tubes. The stand column steel tubes are sleeved with connecting parts provided with first clamping grooves and second clamping grooves. The first clamping grooves are used for allowing one ends of the corresponding ring beam steel tubes to be clamped into and fixing the corresponding ring beam steel tubes. The second clamping grooves are used for allowing one ends of the corresponding floor beam steel tubes to be clamped into and fixing the corresponding floor beam steel tubes. According to the building framework, the stand column steel tubes, the ring beam steel tubes and the floor beam steel tubes which are arranged in three different directions are connected together, so that the overall strength and shock resistance of the building are improved.

0) CN105951991A – PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM ...

27) Family number: 63590326 (CN105951991A) © PatBase

Title:	PREFABRICATED STEEL STRUCTURE FRAMEWORK SYSTEM
Priority:	CN201610397779 20160607

Family:

Publication number	Publication date	Application number	Application date
CN105951991 A	20160921	CN201610397779	20160607

Probable Assignee:	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):(std)**:**	SHANDONG ZHONGTONG STEEL STRUCTURE ENG CO LTD
Assignee(s):	SHANDONG ZHONGTONG STEEL STRUCTURE ENGINEERING CO ; SHANDONG STEEL CONSTRUCTION CO LTD
Inventor(s):(std)**:**	HU SHUQING ; MA GUORUN ; WANG PEIJUN ; YUAN JIANCHENG ; ZHANG LULU
International class (IPC 8–9):	E04B1/14 E04B1/30 E04B1/343 E04B2/56 E04C3/08 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105951991A A prefabricated steel structure framework system comprises stand columns, a steel beam and a shear wall slab. Each stand column comprises a pipe column formed by welding peripheral steel plates, a concrete–filled layer and reinforcing ribs, wherein the pipe column is filled with concrete to form the concrete–filled layer, and the reinforcing ribs are arranged on the inner walls of the peripheral steel plates. The tops of the stand columns are connected with the two ends of the steel beam through friction type high–strength bolts, the cross section of the steel beam is in an H shape, the steel beam comprises an upper flange plate, a lower flange plate and a web for connecting the upper flange plate and the lower flange plate, the web is provided with holes, and a pipeline is arranged through the holes in the web. The shear wall slab is hinged to the outer sides of the peripheral steel plates of the pipe columns and provided with inclined long–strip holes. Hinging is adopted for framework beam–column joints, vertically–distributed force and horizontally–distributed force in the framework shear wall structure system are separated, stress is definite, the energy dissipation performance of the joints is improved, the deformation of the joints is improved, and too early fracture damage of the joints is avoided.

0) JP6306946A – CONCRETE–FILLED CIRCULAR–SECTIONAL STEEL PIPE S...

28) Family number: 11674512 (JP6306946A) © PatBase

Title: CONCRETE–FILLED CIRCULAR–SECTIONAL STEEL PIPE STRUCTURE AND EXECUTION METHOD THEREOF

Priority: JP19930120458 19930426

Family:

Publication number	Publication date	Application number	Application date
JP6306946 A2	19941101	JP19930120458	19930426

Probable Assignee: NIPPON STEEL CORP

Assignee(s):(std)**:** NIPPON STEEL CORP

Inventor(s):(std)**:** YANAGI NAOTAKA ; SUZUKI TAKAHIKO ; KATONO AKIO

International class (IPC 8–9)**:** E04B1/30 E04C3/34 (Advanced/Invention); E04B1/30 E04C3/30 (Core/Invention)

International class (IPC 1–7)**:** E04B1/30

Classification Explorer

Forward Citations: KR101282922, KR101282921,

Abstract:
Source: JP6306946A PURPOSE: To increase bearing force and rigidity through a simple means by installing a screw type joint to a circular–sectional steel pipe column and working specified compressive force or tensile force to concrete filled into the steel pipe column and the steel pipe column. CONSTITUTION: Filling concrete 4 is placed into steel pipe columns 2 connected by a screw type joint 3 consisting of a male screw 10 and a female screw cylinder 11. A diaphragm 18 transmitting force over concrete 4 from beam materials 5 is mounted, and adhesive force between the steel pipe columns 2 and concrete 4 are separated previously. Concrete 4 is cured, and the screw cylinder 11 is rotated, and moved from the steel pipe column 2 in an upper section to the steel pipe column 2 in a lower section. Its own weight of an upper floor is worked to filling concrete 4, and compressive axial tension is introduced. The screw cylinder 11 is turned so as to be lifted, and the upper and lower steel pipe columns 2 are screwed and the upper and lower steel pipe columns 2 are connected. Accordingly, bearing force and rigidity can be increased in the whole framework.

0) CN202787664U – CONCRETE FILLED STEEL TUBULAR COLUMN

29) Family number: 53218132 (CN202787664U) © PatBase

Title: CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201220444481U 20120831

Family:

Publication number	Publication date	Application number	Application date
CN202787664 U	20130313	CN201220444481U	20120831

Probable Assignee: ZHEJIANG JIANGXIN STEEL TRUSS CO LTD

Assignee(s):(std)**:** ZHEJIANG JIANGXIN STEEL TRUSS CO LTD

Assignee(s): ZHEJIANG JIANGXIN STEEL TRUSS CO

Inventor(s):(std)**:** JIANG ZHONGLIANG

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103669724,

Abstract:
Source: CN202787664U The utility model discloses a steel concrete column, used in steel buildings, mainly by the outer pipe (1) and the concrete column (2) constitutes the outer pipe (1) there is an inner pipe (6), concrete column (2) into a hollow concrete column inside the tube (6) is a cavity (4) between the outer pipe filling (1) and the inner pipe (6). Concrete column (2) of the top and bottom surfaces are higher than the outer pipe (1) at both ends of the flange (1a) of the top and bottom surfaces, concrete column (2) has a top surface and a bottom surface of a through–uniform distribution of hollow concrete column (2) of the straight groove, a group of up and down the strip connection (3) is embedded in each of the above straight groove of the outer pipe (1) and the inner pipe (6) is connected into one. The utility model reduces the weight of steel pipe concrete column and protect the multilayered steel concrete column lower concrete column (2) of concentricity in order to protect the quality of housing.

0) CN105350458A – CONSTRUCTION METHOD OF COMPOSITE STRUCTURE PLAT...

30) Family number: 61718786 (CN105350458A) © PatBase

Title: CONSTRUCTION METHOD OF COMPOSITE STRUCTURE PLATFORM FOR CONSTRUCTION OF Y−SHAPED PIER OF BRIDGE

Priority: CN201510785177 20151116

Family:

Publication number	Publication date	Application number	Application date
CN105350458 A	20160224	CN201510785177	20151116
CN105350458 B	20170322	CN201510785177	20151116

Probable Assignee: CHINA CONSTR 6TH ENG DIVISION

Assignee(s):(std)**:** CHINA CONSTR 6TH ENG DIVISION

Assignee(s): CHINA CONSTRUCTION SIXTH ENGINEERING DIVISION CORP ; CHINA STATE CONSTRUCTION ENGINEERING BUREAU CO SIXTH

Inventor(s):(std)**:** GAO PU ; LIU YUEWU ; WANG ANXIN ; YU LIU ; ZHOU JUNLONG

International class (IPC 8−9): E01D21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP2000045229 A2, CN203007846 U, CN202323772 U, CN104746435 A, CN102888815 A, CN101200877 A,

Forward Citations: CN105951607, CN105821770,

Abstract:
Source: CN105350458A The invention discloses a mounting method of a composite structure platform for construction of a Y−shaped pier of a bridge. The method comprises the following steps that (1) a plurality of vertical pre−embedded steel plates are arranged on the left side and the right side of a bearing platform formwork at intervals respectively, and a plurality of horizontal pre−embedded steel plates are arranged on the top faces of the positions, on the left side and the right side of a stand column of the Y−shaped pier to be poured, of the bearing platform formwork at intervals respectively; (2) a bearing platform is poured; (3) a plurality of section steel beams are erected on the two sides of the stand column of the Y−shaped pier to be poured respectively; (4) the stand column of the Y−shaped pier is poured; (5) the bottom ends of a plurality of concrete−filled steel tube inclined struts are welded and connected to the vertical pre−embedded steel plates and the horizontal pre−embedded steel plates respectively, and the other ends of the concrete−filled steel tube inclined struts are welded to the correspondingly−arranged section steel beams respectively; (6) bailey beams and distribution beams are sequentially laid on the section steel beams on the same side; and (7) Y−shaped pier formwork supporting frames are distributed on the distribution beams on the left side and the right side respectively. According to the method, the shear strength of concrete is greatly improved.

0) CN105804241A – SINGLE–LAYER PREFABRICATED ASSEMBLY TYPE REINFO...

31) Family number: 63006209 (CN105804241A) © PatBase

Title: SINGLE–LAYER PREFABRICATED ASSEMBLY TYPE REINFORCED CONCRETE BEAM–COLUMN JOINT

Priority: CN201610165264 20160322

Family:

Publication number	Publication date	Application number	Application date
CN105804241 A	20160727	CN201610165264	20160322

Probable Assignee: HARBIN INST TECHNOLOGY

Assignee(s):(std)**:** HARBIN INST OF TECHNOLOGY ; HARBIN INST TECHNOLOGY

Inventor(s):(std)**:** LIU CHANGYONG ; YANG LIGUI ; YUAN CHANGCHUN

International class (IPC 8–9)**:** E04B1/20 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105804241A The invention relates to a prefabricated reinforced concrete beam–column joint, in particular to a single–layer prefabricated assembly type reinforced concrete beam–column joint. In order to solve the problem that the connection integrity of existing prefabricated beams and prefabricated columns is hard to guarantee, the prefabricated joint for one–piece casting manufacturing of a column section and part of beam sections is provided according to the concept of the point of inflection. The single–layer prefabricated assembly type reinforced concrete beam–column joint is formed by overall manufacturing of a vertical column section (1) and joint superposed beam sections (2) in a factory for prefabrication. A manufacturing method comprises the steps of beam–column longitudinal bar and stirrup binding, connector pre–burying, formwork erecting and concrete pouring and curing. The height of the vertical column section (1) of the joint is 1/2 of the storey height, and the length of each joint superposed beam section (2) is 1/3 of the span of adjacent columns. The vertical column section (1) comprises a pouring section (1–1), a concrete filled steel tube connector (1–2), a steel tube connector (1–3) and column section longitudinal bars (1–4). Each joint superposed beam section (2) comprises a groove–shaped pouring section (2–1), inverted–T–shaped structural steel connectors (2–2) and a reinforcement cage framework (2–3). The single–layer prefabricated assembly type reinforced concrete beam–column joint is applied to the construction industry.

32) Family number: 762909 (US3232842A) © PatBase

Title: Deformable metal chain device for regulating the power of a reactor

Priority: CH19640007815 19640616 FR19630939251 19630625 FR19630952336 19631030 FR19630952351 19631030 FR19640991268 19641013

Family:

Publication number	Publication date	Application number	Application date
BE649518 A	19641016	BE19640649518	19640619
BE654768 A	19650215	BE19640654768	19641023
BE670163 A	19660117		19650927
CH419362 A	19660831	CH19640007815	19640616
CH423011 A	19661031	CH19640013388	19641015
CH461649 A	19680831	CH19650013569	19651001
DE1214333 B	19660414	DE1964C034265	19641030
DE1237234 B	19670323	DE1964C033125	19640612
DE1254778 B	19671123	DE1965C036980	19650927
FR1368891 A	19640807	FR19630939251	19630625
FR1381531 A	19641214	FR19630952336	19631030
FR84641 E	19650319	FR19630952351	19631030
FR86619 E	19660311	FR19640991268	19641013
GB1064382 A	19670405	GB19640024697	19640615
GB1067914 A	19670510	GB19640004355D	19641026
GB1076708 A	19670719	GB19650041008	19650927
IL24389 A1	19690129	IL19650024389	19650930
LU46323 A	19720101		19640615
LU47198 A	19641223	LU19640047198	19641023
NL6407176 A	19641228	NL19640007176	19640624
NL6412624 A	19650503	NL19640012624	19641029
NL6513241 A	19660414	NL19650013241	19651013
NO116095 B	19690127	NO19640153760	19640622
NO116096 B	19690127	NO19650159913	19650930
US3232842 A	19660201	US19640375487	19640616

Probable Assignee: COMMISSARIAT ENERGIE ATOMIQUE

Assignee(s):(std)**:** COMMISSARIAT ENERGIE ATOMIQUE

Assignee(s): COMMISSARIAT A L ENERGIE ATOMIQUE

Inventor(s):(std)**:** AGERON PAUL ; DENIELOU GUY ; DIDIER COSTES ; JACQUES LEBEY ; ROGER MARTIN ; MARTIN ROGER ; MARTIN R ; LEBEY JACQUES ; LEBEY J ; COSTES DIDIER ; COSTES D ; PAUL AGERON ; GUY DENIELOU

International class (IPC 8–9): G21C1/14 G21C7/08 G21C7/12 G21C7/14 (Advanced/Invention); G21C1/00 G21C7/08 (Core/Invention)

International class (IPC 1–7): G21C1/14 G21C7/06 G21C7/08 G21CA

CPC: G21C1/14 G21C7/08 G21Y2002/201 G21Y2004/302 Y02E30/39 G21C7/12 G21C7/14 G21Y2002/301 G21Y2002/402 G21Y2004/30 G21Y2004/305

European class: G21C1/14 G21C7/08 G21C7/12 G21C7/14 S21C1/14 S21Y2/201 S21Y2/301 S21Y2/402 S21Y4/30 S21Y4/302 S21Y4/305 Y02E30/39

US class: 376/227 376/335 976/DIG.118 976/DIG.26

Classification Explorer

Cited documents: IT583677 A, FR1347126 A, FR1322620 A, FR1322339 A, FR1188583 A, DE1092572 B,

Forward Citations: US4452754, US4158602, US4019954, US4001078, US3438856, DE2058619,

Abstract:
Source: GB1064382A 1,064,382. Reactor control rods. . June 15, 1964 [June 25, 1963; Oct. 30, 1963], No. 24697/64. Heading G6C. A neutron absorbing device in the form of a metal chain disposed in a vertical reactor channel has means for displacing it from a withdrawn position, in which it is entirely outside the core, to a deployed position in which it occupies substantially the entire height of the core, and is characterized in that in the withdrawn position it is housed in a detachable container aligned with the channel. The container may be above or below the core; and the chain or chains may be of stainless, boron or cadmium steel. The reactor is graphite moderated, and cooled by CO 2. The control channel through the top reactor shield 4 has a tubular lining which contains three concrete filled metal plugs 10, 12, 14. Plug 10 houses a winch 24 for handling a cable 26 on which is suspended the absorbing device 90, in this case a plurality of chains 92. The plugs are removable, and are provided with handling grooves 44, 46, 48. Moderator column 58 is lined (62) to provide a control channel 64. The column 58 rests on a core support floor 74 to which is attached a housing 78 for the detachable chain container 84. Orifices 104, 106 are provided in the housing and container to allow coolant flow through both the container and the control channel. A gripping head 96 is fixed to the lower end of the hoist cable and is releasably attached to a chain head 94 by means of cam surfaces on the two heads arranged so that they automatically couple and uncouple (Fig. 4, not shown). To remove the neutron absorber, the chain head 94 is lowered until it rests in seating 98; the loss of tension in the cable releases the coupling and the gripping head 96 is withdrawn into a housing 38. The entire contents of the control channel may now be removed piece by piece (members 10, 12, 14, 66, 62, 86 and 84), and a new neutron absorber inserted. In a second embodiment (Figs. 5, 6, 7, not shown) the container is mounted above the core, and the neutron absorber comprises a single chain controlled by a meshing sprocket arranged above its container. The sprocket and associated driving means may be mounted in either a separate channel plug to that containing the chain container, or in the same plug. In this arrangement, the drive and neutron absorber may be replaced without removing shielding plugs situated below them, thus retaining partial shielding.

0) US3475873A – MODULAR,BONDED BUILDING WALL

33) Family number: 394532 (US3475873A) © PatBase

Title: MODULAR,BONDED BUILDING WALL

Priority: GB19660041093 19660914 GB19660041094 19660914

Family:

Publication number	Publication date	Application number	Application date
DE1658991 A1	19701210	DE19671658991	19670912
GB1202871 A	19700819	GB19660041094	19660914
US3475873 A	19691104	US19670667251	19670912

Probable Assignee: STEADMAN WILLIAM DAVID

Assignee(s):(std)**:** STEADMAN WILLIAM D ; STEADMAN WILLIAM DAVID

Assignee(s): WILLIAM D STEADMAN ; WILLIAM DAVID STEADMAN

Inventor(s):(std)**:** STEADMAN WILLIAM D ; STEADMAN WILLIAM DAVID

Inventor(s): WILLIAM D STEADMAN ; WILLIAM DAVID STEADMAN

International class (IPC 8–9): E04B1/20 E04B2/38 E04B2/42 E04B2/52 (Advanced/Invention); E04B2/02 (Advanced/Non–invention); E04B1/20 E04B2/28 E04B2/42 (Core/Invention); E04B2/02 (Core/Non–invention)

International class (IPC 1–7): E02D27/32 E04B1/00 E04B1/18 E04B1/56 E04B2/52 E04B5/19 E04C1/04 E04C2/46 E04C5/01

CPC: E04B1/20 E04B2/38 E04B2/42 E04B2/52 E04B2002/0245

European class: E04B1/20 E04B2/38 E04B2/42 E04B2/52 P04B2/02M3A

US class: 52/293.1 52/417 52/429 52/444 52/463 52/562 522/930

Classification Explorer

Cited documents: US508968 A, US3280525 A, US320698 A, US2940294 A, US2882712 A, US2700294 A, US2049907 A, US1999741 A, US1953287 A, US1377718 A, US1079152 A, IT567813 A, GB190918527 A, DK28772 A, DE402971 A, CH12285 A,

Forward Citations: WO13005183, WO13005183, US8484907, US7347029, US7032357, US6609340, US6526713, US6481178, US6438918, US6363683, US6336301, US6318040, US6314697, US6170220, US5485703, US5007218, US4967528, US4924641, US4860515, US4741140, US4696140, US4214408, US4133156, US3803788, US2017081847, US2010107514, US2005108963, EP2314779, BE1018783,

Abstract:
Source: US3475873A ABSTRACT OF THE DISCLOSURE A building structure comprises a multiplicity of modules made of insulating material, each module being shaped around terminal faces to provide, between ad–15 jacent modules, channels containing a mortar set to form a structural skelton such as one comprising a lattice of intersecting orthoganal reinforced concrete filled passages. The terminal faces of adjacent modules are located in predetermined relative positions by elongated frame 20 members which engage these adjacent faces. The frame members may be tied together by tie members, such as reinforcing rods or wires, and the elongated frame members may be provided in two orthoganal directions so that they cross at a multiplicity of intersections to form 23 a lattice engaging and locating the terminal faces. Each module can comprise two initially separable layers positioned and retained in back–to–back relationship. A pair of such lattices may be provided, one to each side of the building structure, tied together by the bolts passing 30 through the lattice members at the positions of intersection. A stronger concrete column is provided in an upright wall by omitting the modules and filling the space with a column of reinforced concrete monolithically cast with the skelton of the structure. The insulating material 35 may be shaped around the terminal faces to generally concave surfaces with terminal faces provided with elongated frame engaging formations, the module being adapted for combining in terminal face–to–face relationship with adjacent modules, with the elongated frame members engaging between the adjacent faces. B

0) CN106121086A – A CONCRETE–FILLED SQUARE STEEL TUBULAR COLUMN W...

34) Family number: 63998181 (CN106121086A) © PatBase

Title: A concrete–filled square steel Tubular column with a lug and the connections of precast shear wall structures and practices (Machine translation)

Priority: CN201610460865 20160622

Family:

Publication number	Publication date	Application number	Application date
CN106121086 A	20161116	CN201610460865	20160622

Probable Assignee: BEIJING UNIV OF TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY

International class (IPC 8–9): E04B2/58 E04B2/60 E04B2/64 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN106121086A A prefabricated concrete filled steel Tubular column connections with precast shear wall structures and practices, the joint structure includes a fabricated composite thermal insulation masonry shear wall, with ear plate fabricated of concrete filled square steel Tubular column and column side studs, shear wall side a semicircular ribbed grooves, high–strength grout. Referred to common residential structure seismic performance of structures, formed with two seismic fortification lines of the system, and ultimately destroy a ductile failure, and avoid construction or member that causes the entire system to collapse. By said of side with ear Board and the short tied nail of party pipe concrete column, and semicircle with rib concave slot type cut force wall, assembly type cut force wall and light steel framework connection firm, and overall sex good, Assembly simple and duration short, construction Shi not produced new of building garbage, meet energy–saving, and environmental of requirements, also meet residential industrialization, and scale of requirements, is applies Yu current village lower building seismic energy–saving Assembly integration of a new wall body connection structure.

0) CN106499249A – A PREFABRICATED LATERAL RESISTANCE OF COLD–FORM...

35) Family number: 65164404 (CN106499249A) © PatBase

Title: A prefabricated lateral resistance of cold–formed thin–walled steel frame system (Machine translation)

Priority: CN201611180440 20161219

Family:

Publication number	Publication date	Application number	Application date
CN106499249 A	20170315	CN201611180440	20161219

Probable Assignee: CHONGQING UNIV

Assignee(s):(std)**:** CHONGQING UNIV

International class (IPC 8–9): E04B1/24 E04B1/58 E04B1/98 E04H9/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN106499249A The invention relates to a prefabricated lateral resistance of cold–formed thin–walled steel frame system, which belongs to the field of structural engineering. The lateral force resisting system includes a u–shaped section of cold–formed thin–walled steel, cold–formed thin–walled concrete–filled rectangular steel tubular columns, cold–formed thin–walled concrete–filled rectangular steel tube brace and c–shaped cold–formed wall stud, self drilling and self tapping screws. By said u shaped section cold bent thin–walled type steel beams, and cold bent thin–walled rectangle pipe concrete column, and cold bent thin–walled rectangle pipe concrete oblique support through since drill since attack screws mosaic in with, formed anti–side support framework; by said c shaped section cold bent thin–walled wall frame column through since drill since attack screws connection u shaped section cold bent thin–walled type steel beams and cold bent thin–walled rectangle pipe concrete oblique support. The invention provides a prefabricated lateral resistance of cold–formed thin–walled steel frame system, can be used for multiple cold–formed thin–walled steel structure residence system, can improve the seismic capacity of structures, easy Assembly of construction, has broad application prospects.

0) GB878158A – APPARATUS FOR THE STORAGE OF FLUIDS

36) Family number: 20791766 (GB878158A) © PatBase

Title: Apparatus for the storage of fluids

Priority: GB19580031021 19580929

Family:

Publication number	Publication date	Application number	Application date
GB878158 A	19610927	GB19580031021	19580929

Probable Assignee: MECHELIN JOEL LANGLEY ROGERS

Assignee(s):(std)**:** BRITISH PETROLEUM CO ; GEORGE BRUCE MARRIOTT ; MECHELIN JOEL LANGLEY ROGERS

Assignee(s): THE BRITISH PETROLEUM COMPANY LIMITED

International class(IPC 8–9)**:** B63B35/44 B65D88/78 (Advanced/Invention); B63B35/44 B65D88/00 (Core/Invention)

International class(IPC 1–7)**:** B63B35/44 B65D88/78

CPC: B63B35/44 B65D88/78

European class: B63B35/44 B65D88/78

Classification Explorer

Forward Citations: FR2586227,

Abstract:
Source: GB878158A 878,158. Submerged tanks. BRITISH PETROLEUM CO. Ltd., MARRIOTT, G. B., and ROGERS, M. J. L. Dec. 29, 1959 [Sept. 29, 1958], No. 31021/58. Class 68(2). [Also in Group XXXIII] Open bottom tanks for storage of fluids having a lower specific gravity than water and which are of low miscibility therewith comprising a roof capable of floating on water (see Group XXXIII) and a skirt of sheet material depending virtually therefrom, may be used in the submerged condition. The tank in Fig. 8 comprises a pontoon 44, skirt 42, and a sleeve 46 in which an anchor post 47 is a sliding fit. The pontoon has an air connection 51, and a water connection 52, admission of water causing the tank to sink until held by pipes 48 extending from the bed of the waterway. The tank 27 in Fig. 7 has a roof 30 and skirt 28 of flexible material and a flexible inflatable tube 31, and is secured by hawsers 36. The tank 54 in Fig. 9 is incorporated with an off shore platform 55 and comprises a pontoon roof 58 and skirt 56. The platform 55 has legs 63 with stops 62. The tank has sleeves 60, 61 surrounding the legs 63 to prevent upward, downward and lateral movement of the tank.

0) CN205348384U – ANTIDETONATION LOCAL –STYLE DWELLING HOUSES STE...

37) Family number: 61769926 (CN205348384U) © PatBase

Title: ANTIDETONATION LOCAL –STYLE DWELLING HOUSES STEEL FRAMEWORK

Priority: CN201510827285 20151124 CN201520948036U 20151124

Family:

Publication number	Publication date	Application number	Application date
CN105369890 A	20160302	CN201510827285	20151124
CN205348384 U	20160629	CN201520948036U	20151124

Probable Assignee: YUNNAN KISC STEEL STRUCTURE CO LTD

Assignee(s):(std)**:** YUNNAN KISC STEEL STRUCTURE CO LTD

Assignee(s): YUNNAN KUNMING STEEL STEEL CO LTD ; YUNNAN KISC STEEL STRUCTURE CO

Inventor(s):(std)**:** ZOU ZIYAO ; ZHOU QUANWANG ; ZHAN XIE ; XU CAIYU ; TIAN RUI ; LIU HONGJIN ; DENG MINGMING

International class (IPC 8–9): E04B1/00 E04B1/24 E04B5/40 (Advanced/Invention)

Classification Explorer

Cited documents: EP1321592 A1, CN205348384 U, CN202273319 U, CN201050117 Y, CN200946327 Y,

Forward Citations: CN105369890,

Abstract:
Source: CN205348384U The utility model discloses an antidetonation local –style dwelling houses steel framework, including integrated unit of a plurality of roof beam, post and the integrated units of the horizontal building carrier plate of a plurality of pieces, each roof beam, the integrated unit of post include that the overlap joint becomes two piece lambdoid roof girder, and the tower connects between two roof girder and downwardly extending's center pillar, and the tower connects the side column at two roof girder limit portions or tip and downwardly extending respectively, the tower connect between center pillar and side column and with center pillar and side column looks vertically horizontal gird, a plurality of roof beam, the integrated unit of post do not set up according to the house length interval of building ground side by side, link to each other through the flat longeron in many genshui between roof beam, the integrated unit of post, set up the integrated unit of horizontal building carrier plate on the rectangle frame that horizontal gird and longeron formed, and the integrated unit of horizontal building carrier plate includes the bottom plate, and the interval sets up the skeleton on the bottom plate, the concrete of watering between bottom plate top and skeleton. The utility model discloses on –the –spot simple to operate, swift, installation effectiveness, installation accuracy height, construction cycle is short, safe and reliable, and construction quality is good, effectively practices thrift manpower and materials, has better maneuverability.

0) KR20160137705A – CFT JOINT STRUCTURE OF CFT COLUMN AND COMPOSITE...

38) Family number: 64163538 (KR20160137705A) © PatBase

Title:	CFT JOINT STRUCTURE OF CFT COLUMN AND COMPOSITE GIRDER
Priority:	KR20150070148 20150520

Family:

Publication number	Publication date	Application number	Application date
KR20160137705 A	20161201	KR20150070148	20150520

Probable Assignee:	OF SEOUL IND COOPERATION FOUNDATION UNIV
Assignee(s):(std):	OF SEOUL IND COOPERATION FOUNDATION UNIV
Assignee(s):	UNIVERSITY OF SEOUL INDUSTRY COOPERATION FOUNDATION ; ACT CO LTD PARTNER ; ACT PARTNER CO LTD
Inventor(s):	CHOI SUNG MO ; YOM KYONG SOO
International class (IPC 8–9):	E04B1/19 E04B1/30 E04B1/58 E04G13/04 (Advanced/Invention)
CPC:	E04B1/5825 E04B1/1903 E04B1/30 E04G13/04
Classification Explorer	
Cited documents:	KR101511172 B1, KR100817685 B1,

Abstract:
Source: KR20160137705A The present invention relates to a joint structure of a concrete filled tube (CFT) column and a composite girder including: a hollow column structure with a closed cross section; a girder structure attached to an outer surface of the column structure; and concrete placed in the column structure and the girder structure. The girder structure includes: multiple corner vertical members arranged on each corner of a cross section of a column desired to construct; multiple templates forming a framework of the column by integrally connecting the corner vertical members; and a closure member forming the remaining outer surface of the column by closing open portions formed by the adjoining corner vertical members. Horizontal steel reinforcements penetrating through the column structure coming into contact with an upper part of an end of the girder structure are arranged on the upper part of the end of the girder structure.

- **search:** SS15 FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) (Results 2527)
- **search:** SS16 FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) and (holes or perforations or bores) (Results 651)
- **search:** SS17 FT=steel and (plate or sheet) and column and (concrete filled or in–filled or filled) and concrete and reinfor* (Results 555)
- **search:** SS18 FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor* (Results 590)
- List: SS18 1–50 (FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor*) (Results 590)

0) US2015345159A – REINFORCING STRUCTURE FOR CONCRETE COLUMN

1) Family number: 55381052 (US2015345159A) © PatBase

Title: REINFORCING STRUCTURE FOR CONCRETE COLUMN

Priority: JP20130006483 20130117 JP20130006486 20130117 WO2014IB58277 20140115

Family:

Publication number	Publication date	Application number	Application date
AU2014206512 AA	20140724	AU20140206512	20140115
AU2014206512 BB	20160317	AU20140206512	20140115
CA2892302 AA	20150522	CA20142892302	20140115
CA2892302 C	20170314	CA20142892302	20140115
EP2946048 A1	20151125	EP20140702645	20140115
HK1216111 A1	20161014	HK20160104128	20160412
JP2014136923 A2	20140728	JP20130006483	20130117
JP2014136924 A2	20140728	JP20130006486	20130117
JP5361100 B1	20131204	JP20130006486	20130117
JP5411367 B1	20140212	JP20130006483	20130117
US2015345159 AA	20151203	US20140653341	20140115
US9353536 BB	20160531	US20140653341	20140115
WO14111851 A1	20140724	WO2014IB58277	20140115

Probable Assignee: SANYO HOME CO LTD

Assignee(s):(std)**:** SANYO HOME CO LTD ; SANYOHOME CO LTD

Assignee(s): YAMAKAWA HIROSHI ; SANYOHOME CO

Inventor(s):(std)**:** YAMAKAWA HIROSHI

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; BERESKIN AND PARR LLP SENCRL SRL; UEXKUELL AND STOLBERG; RENNER OTTO BOISSELLE AND SKLAR LLP; YAMAMOTO SHUSAKU ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D37/00 E04G23/00 E04G23/02 (Advanced/Invention); E04G (Subclass/Invention)

CPC: E04G23/0218 E04G2023/0251 E04G23/0225

US class: 1/1 52/514.5

Classification Explorer

Cited documents: US6006488 A, US4892601 A, US4439071 A, US4306821 A, US4071996 A, US3798867 A, US3355852 A, US2013055660 AA, US2003089063 AA, JP9177334 A2, JP9095910 A2, JP9095910, JP2012127130, JP2012036636 A2, JP2012036636, JP2012007418 A2, JP2012007418, JP2009095910 A2, JP2007002512 A2, JP2007002512, JP2005350878 A2, JP2005023745 A2, JP2005023745, JP2003113674, JP2000110365, JP11081554 A2, JP10220030 A2,

Forward Citations: WO16198913, US9476212, US2016145882, US2015354238, JP6117974, JP6095187, JP6047704, JP6047704, JP6016313, JP5984273, JP5869717, JP5850480, JP5830803, JP5780442, JP5641530, JP2017020261, JP2017014713, JP2017002549, JP2016204844, JP2016108806, JP2015206178, JP2015143465, JP2015086690, JP2015063890,

Abstract:
Source: US2015345159A A reinforcing structure for a concrete column is provided, which is capable of preventing the concrete column from being destroyed. A reinforcing structure for a concrete column comprises: a plurality of steel plates 6, overlapping portions of which are arranged to be slidable with each other by vibration due to an

external force; grout material 7 filled into a space portion 3 formed in between the plurality of steel plates 6 and a concrete column 1; and a reinforcing sheet 5 with adhesive wound around an outer circumference of the plurality of steel plates 6, wherein: the plurality of steel plates 6 are bound by the reinforcing sheet with adhesive. Preferably, a restricting portion 12 is provided for restricting sliding movement of the overlapping portions, at the overlapping portions of the plurality of steel plates 6.

0) US4722156A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

2) Family number: 29121419 (US4722156A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority:

CA19860503158 19860303
CA19860505996 19860407
JP19850042979 19850305
JP19850045285 19850307
JP19850087172 19850423
CA19880568735 19880606
JP19850193388 19850902
JP19850210453 19850924
JP19850210454 19850924
JP19850210456 19850924
JP19850087173 19850423
JP19850146386 19850703
JP19850156365 19850716
JP19850156366 19850716
JP19860001463 19850703
US19870107680 19871009
US19860899549 19860822
US19860847495 19860403
US19860835954 19860304
JP19870234374 19870918
JP19880080444 19880401
JP19860003179 19860110
JP19850299531 19851228
JP19850241049 19851028
JP19850295377 19851225

Family:

Publication number	Publication date	Application number	Application date
CA1259808 A1	19890926	CA19860503158	19860303
CA1273179 A1	19900828	CA19860505996	19860407
CA1300920 A1	19920519	CA19880568735	19880606
CN1008461 B	19900620	CN19861001986	19860303
CN1008643 B	19900704	CN19861006236	19860902
CN1009291 B	19900822	CN19861003232	19860506
CN1017364 B	19920708	CN19881004690	19880730
CN1032375 A	19890412	CN19881004690	19880730
CN86101986 A	19860903	CN19861001986	19860303
CN86103232 A	19870318	CN19861003232	19860506
CN86106236 A	19870805	CN19861006236	19860902
DE3676021 D1	19910117	DE19863676021	19860822
DE3679957 D1	19910801	DE19863679957	19860403
DE3681944 D1	19911121	DE19863681944	19860305
DE3884117 D1	19931021	DE19883884117	19880610
DE3884117 T2	19940505	DE19883884117T	19880610
EP0195552 A2	19860924	EP19860301552	19860305
EP0195552 A3	19870527	EP19860301552	19860305
EP0195552 B1	19911016	EP19860301552	19860305
EP0214800 A2	19870318	EP19860306519	19860822
EP0214800 A3	19870527	EP19860306519	19860822
EP0214800 B1	19901205	EP19860306519	19860822
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KR940009460 B1	19941013	KR19880007707	19880625	
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Inventor(s): HOSOKAWA OSAMU SUGINAMI KU TOKYO JP ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD CHUO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L... ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L CHUO K ; NAKAMURA YASUKAZU MATSUDO SHI CHIBA KEN JP ; NAKAJIMA HIDEO SHIMIZU CONSTRUCTION CO LTD ; KOSHIDA KAZUNORI HINO SHI TOKYO JP ; KITAGAWA SEIHO SHIKI SHI SAITAMA KEN JP ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI... ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI KANAGAWA KE ; SHIOKAWA HIDEYO INBA GUN CHIBA KEN JP ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD CHUO K ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI TOKYO JP ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI SHIMIZU CONSTRUCTION CO L ; SATO TAKANORI SETAGAYA KU TOKYO JP ; SANO TAKESHI TAMA SHI TOKYO JP ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD CHUO KU T ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD CHUO K ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD CHUO ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LT ; WANTANABE YASUSHI OHTA KU TOKYO JP ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO ; SATO TAKANORI SHIMIZU CONSTRUCTION CO ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO

Agent(s): MARKS AND CLERK

Designated states: DE FR GB

International class (IPC 8–9): B23K9/02 B23K9/028 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/22 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 (Advanced/Invention); B23K9/02 B23K9/028 E02D5/24 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/20 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): B23K31/06 C04C3/36 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 E04C3/36

CPC: E04B1/165 E04B1/30 E04C3/34 E02D5/30 Y02T10/7005

European class: E02D5/30 E04B1/16D E04B1/30 E04C3/34

US class: 264/256 264/262 52/263 52/721 52/721.4 52/724 52/725 52/726 52/726.1 52/726.3 52/742.14 52/834 52/848 52/98

Classification Explorer

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Forward Citations: WO9851883, WO13120138, WO13016683, WO11072451, WO10018491, WO09090301, WO08157768, WO03054321, US9677273, US9523188, US9248957, US9096999, US9067721, US8941270, US8888413, US8850750, US8484915, US8468775, US8250833, US8104242, US8056297, US7811495, US7475651, US7143554, US7107730, US6665990, US6655877, US6189286, US6141918, US6119425, US6061992, US5934035, US5678375, US5577857, US5423634, US5399169, US5285614, US5218802, US5174080, US5066834, US4864797, US2016251865, US2014000207, US2013133278, US2012114425, US2010319280, US2010071275, US2009313913, US2009038263, US2009021019, US2007261356, US2007199252, US2007175577, US2007028541, US2006174549, US2004055234, US2003029111, RU2597909, RU2496949, RU2495987, JP7139090, JP7034540, JP64062535, JP64033343, JP63223250, JP6093357, JP5915425, JP5734169, JP5033493, JP4491099, JP4304039, JP4094004, JP3941899, JP3778348, JP3013329, JP2697394, JP2575761, JP2080729, JP2014527470, JP2014015773, JP2013112973, JP2009061727, JP2005113413, JP2003138648, JP2000282578, JP1142146, JP11181957, JP1062535, JP1033343, ITTV20090161, FR2841579, FR2833632, EP0982447, EP0308038, EA10211, EA017610, EA010211, DE10261604, CN105178512, CN104790976, CN104763162, CN104405123, CN104120833, CN104006283, CN104006283, CN103967209, CN103924738, CN103924738, CN103422620, CN103422620, CN103122676, CN103122676, CN103061566, CN102677824, CN102635064, CN102635063, CN102409809, CN102322113, CN102134891, CN102011432, CN101982629, CN101806118, CN101793055, CH691691, AT502604,

Abstract:
Source: US4722156A An concrete filled steel tube column and method of constructing same. The concrete filled steel tube column includes a steel tube having an inner face; a concrete core disposed within the steel tube; and a separating layer interposed between the inner face of the steel tube and the concrete core for separating the concrete core from the inner face of the steel tube so that the steel tube may not be bonded to the concrete core. After the separating layer is formed on the inner face of the steel tube, the concrete is charged into the steel tube to form a concrete core.

0) US2015321838A – STEEL PLATE AND CONCRETE TANK UNIT, TANK GROUP ...

3) Family number: 57052994 (US2015321838A) © PatBase

Title: STEEL PLATE AND CONCRETE TANK UNIT, TANK GROUP AND OFFSHORE PLATFORMS

Priority: AU20130375773 20130122 CN201480001337 20140122 US20150805398 20150721 WO2013CN070808 20130122 WO2014CN071120 20140122 WO2014CN071121 20140122

Family:

Publication number	Publication date	Application number	Application date
AU2013375773 AA	20140731	AU20130375773	20130122
AU2013375773 BB	20160204	AU20130375773	20130122
AU2014210247 AA	20140731	AU20140210247	20140122
AU2014210247 BB	20160211	AU20140210247	20140122
CA2897223 AA	20150706	CA20142897223	20140122
CA2897267 AA	20150706	CA20132897267	20130122
CA2897267 C	20160906	CA20132897267	20130122
CN104321247 A	20150128	CN201480001335	20140122
CN104321247 B	20170412	CN201480001335	20140122
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CN104395530 B	20160824	CN201480001337	20140122
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CN104968583 B	20161221	CN201380069107	20130122
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WO14114235 A1	20140731	WO2014CN71120	20140122
WO14114236 A1	20140731	WO2014CN71121	20140122

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Inventor(s):(std)**:** WU ZHIRONG

Inventor(s): ZHIRONG WU

Agent(s): FB RICE; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; BEIJING SANYOU INTELLECTUAL PROPERTY AGENCY LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B35/44 B65D88/02 B65D88/78 E02B17/00 E02B17/02 E02B17/06 E02D23/02 E02D23/10 E02D25/00 E02D27/12 E02D27/18 E02D27/20 E02D27/38 E02D27/52 E02D29/00 E02D29/09 E04H7/02 E04H7/04 E04H7/18 E21B43/01 (Advanced/Invention)

CPC: F17C2201/0104 F17C2201/054 F17C2203/0341 F17C2203/0362 F17C2203/0379 F17C2203/0631 F17C2203/0639 F17C2203/0678 F17C2205/0111 F17C2221/033 F17C2221/035 F17C2223/0153 F17C2223/0161 F17C2223/033 E02B2017/0069 B65D88/02 E04H7/04 E04H7/18 E02B17/0017 E02B17/027 E02D27/12 E02D27/38 E02D27/525 E02D29/00 E02B2017/0043 E02B2017/0056 E02B17/02 B63B35/4413 E02B17/06 B63B2035/442 B63B2035/448 E02B2017/0039 E02D27/20 E02D23/02 E02D23/10 E02D25/00 E02D27/18 E02D27/52 E02D29/06 E04H7/02 E02B17/025 B63B35/44 B65D88/78 E02B17/00 E02B2017/0078

US class: 220/567.1 405/203 405/204 405/205 405/210 405/211 405/224.1 405/8

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Cited documents: WO9729948 A1, US7114884 BB, US6786679 BB, US6408780 BA, US6340272 BA, US6244785 BA, US5791819 A, US5609442 A, US4966495 A, US4733993 A, US4703709 A, US4498412 A, US4428702 A, US429575 A, US4234270 A, US4202647 A, US4124989 A, US3999395 A, US3921558 A, US3766583 A, US3709307 A, US3630161 A, US3550385 A, US3537268 A, US3510892 A, US34426 A, US2402790 A, US2013032075 AA, US2012003048 AA, US2011013989 AA, US2010051624 AA, US2007140795 AA, US2005039667 AA, US2003152429 AA, US2003140838 AA, US2003024459 AA, US2002154954 AA, JP55075009 A2, GB2324778 B2, CN201678202 U, CN201647096 U, CN200971492 Y, CN102756793 A, CN102080369 A, CN101966868 A, CN101666080 A, CN101544272 A, CN101544270 A, CN101255701 A, CN101148951 A, CN101032997 A,

Forward Citations: WO16115426, WO16057958, WO16004847, US2017107713, US2016101836,

Abstract:
Source: US2015321838A A steel plate and concrete composite tank unit, tank groups and offshore platforms with new type of tank units are disclosed. The tank unit comprises an outer concrete tank that comprises an outer tank shell, two heads and ring shell connections at both ends, an inner steel tank that comprises an inner tank shell, epitaxial structures at both ends of the inner steel tank. Inner tank shell is connected to the outer tank shell by epitaxial structures, and an isolation layer that is formed from the gap between the outer concrete tank and the inner steel tank where it is filled with isolation medium.

0) US6041561A – SELF–CONTAINED MOLDED PRE–FABRICATED BUILDING P...

4) Family number: 23411547 (US6041561A) © PatBase

Title: Self–contained molded pre–fabricated building panel and method of making the same

Priority: US19970916626 19970822 US19990470943 19991222 WO1998US17169 19980819

Family:

Publication number	Publication date	Application number	Application date
AU199891992 A1	19990316	AU19980091992	19980819
CA2272588 AA	19990521	CA19982272588	19980819
EP0972121 A2	20000119	EP19980944455	19980819
US6041561 A	20000328	US19970916626	19970822
US6401417 BA	20020611	US19990470943	19991222
WO9910607 A2	19990304	WO1998US17169	19980819
WO9910607 A3	19990514	WO1998US17169	19980819

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Assignee(s): DENNIS LEBLANG ; LEBLANG WAYNE

Inventor(s):(std)**:** LEBLANG DENNIS

Inventor(s): DENNIS LEBLANG

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BORDEN LADNER GERVAIS LLP

Designated states: AM AT AU AZ BE BR BY CA CH CN CY CZ DE DK EE ES FI FR GB GR HU IE IL IT JP KG KR KZ LI LT LU LV MC MD MX NL NO NZ PL PT RO RU SE SG SK TJ TM TR UA

International class (IPC 8–9): E04B1/14 E04B1/16 E04B1/76 E04B2/00 E04B5/29 E04B7/20 E04C2/06 E04C2/284 E04C2/38 E04H4/00 (Advanced/Invention); E04B1/76 (Advanced/Non–invention); E04B1/02 E04B1/16 E04B5/17 E04B7/00 E04C2/06 E04C2/38 E04H4/00 (Core/Invention); E04B1/76 (Core/Non–invention)

International class (IPC 1–7): E04B2/00 E04C2/284 E04C3/02 E04H1/00

CPC: E04B1/14 E04B1/164 E04B5/29 E04B7/20 E04B2001/7679 E04C2/06 E04C2/384 E04H4/0087

European class: E04B1/14 E04B1/16C E04B5/29 E04B7/20 E04C2/06 E04C2/38C E04H4/00D2 P04B1/76M

US class: 52/234 52/309.12 52/481.1 522/340

Classification Explorer

Cited documents: USRE29965 E, US6023898 A, US6006484 A, US5943838 A, US5930968 A, US5797233 A, US5787665 A, US5709058 A, US5695443 A, US5678361 A, US5655344 A, US5526629 A, US5524412 A, US5491947 A, US5483777 A, US5218803 A, US5216863 A, US5092100 A, US5055252 A, US4934121 A, US4930278 A, US4909007 A, US4885884 A, US4751803 A, US4669240 A, US4649682 A, US4638615 A, US4622796 A, US4619032 A, US4605529 A, US4570398 A, US4494353 A, US4435936 A, US4276730 A, US4271111 A, US4235054 A, US4194336 A, US4047355 A, US4021989 A, US3965635 A, US3885008 A, US3730476 A, US3562970 A, US3305981 A,

Forward Citations: WO12135954, WO11077386, WO10014192, WO08007986, WO07096888, WO04001146, WO0133006, US9677268, US9663952, US9631363, US9493938, US9447557, US9399867, US9315988, US9260874, US9132461, US9074380, US9033303, US9016027, US8993462, US8991133, US8973334, US8950231, US8938926, US8904737, US8800227, US8763331, US8671637, US8656673, US8627636, US8607531, US8499526, US8495846, US8444789, US8429866, US8341907, US8297018, US8297016, US8281535, US8234833, US8201368, US8176696, US8161699, US8136248, US8109058, US8109055, US8079189, US8015771, US7998571, US7958687, US7905073, US7905062, US7805908, US7790784, US7788879, US7757454, US7713615, US7685789, US7596915, US7524555,

US7523591, US7421828, US7409800, US7313891, US7254925, US7137225, US7127858, US7040066, US7032356, US7017316, US6907708, US6907695, US6729094, US6698150, US6676102, US6622452, US6519900, US2015159372, US2015121791, US2014308509, US2014115989, US2014115988, US2013234002, US2012317902, US2012137610, US2012079784, US2012066988, US2012000593, US2011225910, US2011099940, US2011099930, US2011016800, US2011011006, US2010325988, US2010313500, US2010300012, US2010257805, US2010218446, US2010146874, US2010139177, US2010132291, US2010107539, US2010107536, US2010088975, US2010058700, US2009255196, US2009235598, US2009224134, US2009199500, US2009193733, US2009126305, US2009126304, US2009107065, US2009062431, US2009062413, US2009056257, US2008245013, US2008120942, US2008115450, US2008083180, US2007289239, US2007286688, US2007227087, US2007227086, US2007204540, US2007186497, US2007062151, US2007062144, US2006236653, US2006197257, US2006185290, US2006177279, US2006137269, US2006096236, US2006096222, US2006075701, US2006037282, US2006026925, US2005284101, US2005284071, US2005257494, US2005209414, US2005193678, US2005188635, US2005087908, US2005086900, US2005055935, US2005034418, US2005000178, US2004255534, US2004139674, US2004118069, US2004016194, US2003167722, US2003159391, RU2548262, GB2502713, FR2914664, FR2885624, EP1754842, CN103132690, CN103132690, BE1019464, AU2010334410,

Abstract:
Source: US6041561A The invention provides pre−fabricated self−contained building panels, including a panel incorporating a truss structure as a part thereof, and combinations thereof. The panels include a skeletal assembly comprising generally an array of plural structural steel channels, rigid sheeting proximate to said channels, support members adjacent the rigid sheeting, the channels supported between suitable base plates, angles for defining portions of said skeletal assembly and a forming structure as a part of said skeletal assembly, said skeletal assembly and forming structure being oriented horizontally on a planar surface. A self−hardening material, such as concrete, clay, etc. is introduced to the forming structure for embedding at least a portion of said skeletal assembly. The forming structure becomes an integral part of the completed building panel and is not disassembled therefrom. Angles are included as a part of the skeletal assembly for defining receiving chambers for self−hardening material such as concrete, clay and the like. A building truss including a pair of double−angle struts and a web−reinforcement bar threaded therealong, as well as rigid sheeting arranged to define a receiving chamber for the self−hardening material, is provided and combined as a part of the above mentioned building panels. A moulding and means to enable press−seating thereof in a wet concrete wall are disclosed as is a flexible brick facing also pressed into a wet concrete wall. The skeletal structures function as forms for forming the panel and/or the truss combined therewith. Forms also are described forming various architectural bodies and forms.

0) US2016298333A – THREE–DIMENSIONAL LIGHTWEIGHT STEEL TRUSS WITH ...

5) Family number: 56407188 (US2016298333A) © PatBase

Title: THREE–DIMENSIONAL LIGHTWEIGHT STEEL TRUSS WITH BI–DIRECTIONAL CONTINUOUS DOUBLE BEAMS

Priority: CN201410035766 20140124 CN201510038133 20150126 WO2015CN071574 20150126 CN201520052886U 20150126

Family:

Publication number	Publication date	Application number	Application date
CN103790231 A	20140514	CN201410035766	20140124
CN105297887 A	20160203	CN201510038133	20150126
EP3085844 A1	20161026	EP20150740446	20150126
IN201617027483 A	20161230	IN201617027483	20160811
JP2017503942 T2	20170202	JP20160548224T	20150126
PH2016500906 A	20160704	PH20160500906	20160516
TW201529938 A	20150801	TW20140113340	20140411
TW201608086 A	20160301	TW20150102603	20150126
TWM522974 Y	20160601	TW201502012431U	20150126
US2016298333 AA	20161013	US20150037584	20150126
WO15110081 A1	20150730	WO2015CN071574	20150126

Probable Assignee: CHENGDU CHANGMIN CENTURY CONSTRUCTION CO LTD

Assignee(s):(std)**:** CHENGDU CHANGMIN CENTURY CONSTRUCTION CO LTD ; CHUN HSIEH YING ; HSIEH YING CHUN ; XIE YINGJUN

Assignee(s): CHENGDU CHANG CHINA CENTURY TECHNOLOGY CO LTD BUILDING ; CHENGDU CHANGMIN CENTURY CONSTRUCTION CO

Inventor(s):(std)**:** CHUN HSIEH YING ; HSIEH YING CHUN ; XIE YINGJUN

Agent(s): BECKER KURIG STRAUS; OHNUKI SHINSUKE; ITOH TADAHIKO; ITOH TADASHIGE; BEIJING GLOBE LAW LAW FIRM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/19 E04B1/24 E04B1/28 E04B1/30 E04B1/38 E04B1/58 E04B1/62 E04B1/80 E04B2/56 E04B2/86 E04B5/40 E04B7/20 E04C3/04 E04C3/08 E04C3/36 E04C5/06 E04C5/065 E04C5/16 (Advanced/Invention)

CPC: E04B2/845 E04B2/847 E04B2/8658 E04B5/40 E04B2001/2415 E04B2001/2448 E04B2001/2454 E04B2001/2457 E04B2001/2463 E04B2001/2466 E04B2001/2472 E04B2001/2478 E04B2001/2481 E04B2001/2484 E04B2001/2496 E04C3/34 E04C5/065 E04C5/0636 E04C5/162 E04C3/04 E04C3/08 E04C3/36 E04B1/28 E04B2/86 E04B7/20 E04C2003/0413 E04C2003/0404 E04B1/24 E04C2003/0491

US class: 52/649.2

Classification Explorer

Cited documents: US9512616 BB, US8915042 BB, US8281534 BB, US7642550 BB, US7299596 BB, US5941035 A, US5289665 A, US4342177 A, US3600868 A, TWM377446 Y, CN204940522 U, CN203296170 U, CN201502135 U, CN201310664792, CN201310044986, CN201110023291, CN201010216616, CN200920171128, CN200920158989, CN200920147815, CN1338548 A, CN103790231 A, CN103711230 A, CN103114668 A,

Forward Citations: WO15110081, CN104963408,

Abstract:
Source: US2016298333A Disclosed is a three–dimensional lightweight steel framework formed by two–way

continuous double beams. The three–dimensional lightweight steel framework comprises beams (1), purlines and/or stringers (16), pillars (2), walls (62, 63), slabs (31) and/or a roof and anti–lateral force bracings (41) and/or pull rods (42), wherein the beams (1) are continuous double beans, and the continuous double beams are formed by combining continuous single beams having the same structure or different structures, and the continuous single beams are respectively arranged at two sides of the outer edges of the pillars (2), and keep continuous and uninterrupted with the pillars (2) at the crosswise junctions; and reinforced lightweight composite slabs can be selected as the slabs (31) completely or partly. The three–dimensional lightweight steel framework simplifies the production of a lightweight steel member, and simplifies the site installation by using bolts to conduct fixing.

6) Family number: 7174690 (US5410847A) © PatBase

Title: JUNCTION STRUCTURE BETWEEN STEEL MEMBER AND STRUCTURAL MEMBER

Priority: JP19900401568 19901212 JP19900402791 19901217 JP19910004324 19910118 JP19910030002 19910225 JP19910051890 19910318 JP19910051891 19910318 US19940192066 19940204 US19910805049 19911211

Family:

Publication number	Publication date	Application number	Application date
GB2252142 A1	19920729	GB19910026323	19911211
GB2252142 B2	19941109	GB19910026323	19911211
GB9126323 A0	19920212	GB19910026323	19911211
JP1943314 C3	19950623	JP19900402791	19901217
JP2006029 C3	19960111	JP19900401568	19901212
JP2027057 C3	19960226	JP19910004324	19910118
JP2027062 C3	19960226	JP19910051890	19910318
JP4213639 A2	19920804	JP19900401568	19901212
JP4216737 A2	19920806	JP19900402791	19901217
JP4237734 A2	19920826	JP19910004324	19910118
JP4269230 A2	19920925	JP19910030002	19910225
JP4289349 A2	19921014	JP19910051891	19910318
JP4289350 A2	19921014	JP19910051890	19910318
JP6074612 B4	19940921	JP19900402791	19901217
JP7033684 B4	19950412	JP19900401568	19901212
JP7042732 B4	19950510	JP19910004324	19910118
JP7042733 B4	19950510	JP19910051890	19910318
US5410847 A	19950502	US19940192066	19940204

Probable Assignee: KAJIMA CORP

Assignee(s):(std)**:** ARTES KK ; ARUTESU KK ; KABUSHIKIKAISHA ARTES ; KAJIMA CORP

Inventor(s):(std)**:** HAYASAKA HIROSHI ; ITO AKIYOSHI ; ITO SHOEI ; OKAWA YASUO ; SAEKI TOSHIO ; SUGAWARA KIYOBUMI ; TANAKA NAOKI

Inventor(s): TOSHIO SAEKI ; YASUO OKAWA ; KIYOBUMI SUGAWARA ; NAOKI TANAKA ; HIROSHI HAYASAKA ; AKIYOSHI ITO

International class (IPC 8–9): E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 F16B13/14 (Advanced/Invention) ; E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 (Core/Invention)

International class (IPC 1–7): E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 F16B7/04

CPC: Y10T403/7001 Y10T403/75 E04B1/30 F16B13/141

European class: E04B1/30 F16B13/14C

US class: 403/346 403/408.1 52/272 52/295 52/583.1 52/721 52/724.2 52/737.2 52/838

Classification Explorer

Cited documents: US4905436 A, US4111578 A, US3787134 A, US3513610 A, US3369334 A, US3261135 A, US2920475 A, US2569669 A, US1333523 A, JP63186809 B4, JP59171154 A2, JP57012739 A2, JP54033217 A2, JP49038447 A2, JP3125735 A2, JP3090760 A2, JP3021735 A2, JP2272125 A2, JP2272122 A2, JP2072122 A2, JP2061142 A2, JP2061141 A2, JP2061140 A2, JP1278637 A2, JP1278636 A2, JP1275820 A2, JP1275819 A2, JP1275818 A2, JP1260135 A2, JP1260134 A2, GB893213 A, GB1418192 A, GB1037570 A, FR921528 A, FR1067871 A,

Forward Citations: WO9851883, WO9836134, WO07066228, WO07066228, US9422717, US9399868, US9255408, US9145682, US8915043, US8468775, US8393118, US8381479, US8375678, US7975444, US7637076, US7107730, US6061992, US2015259917,

US2015259916, US2014311059, US2010319280, US2009139177, US2009038263, US2007261356, US2007209314, JP2007023682, JP2002129661, DE4318771, CN104075040, CN104075040, CN104075038, CN104075038, CN104005516, CN102733491, CN102733486,

Abstract:
Source: US5410847A A junction for connecting a steel member to a structural member, such as a beam in a steel framed construction to a column in a reinforced concrete construction, a steel framed concrete construction or a steel framed construction. Junction hardware connect to the steel member and a rod−like orthogonal metal connector is provided in concrete structural members. The elements are connected by tightening bolts or by screw joints through a coupler. Since the metal connector is in a form of rod, the concrete member has a high packing property. Field welding work is omitted by connecting the metal connector to the junction hardware by a bolt connection method or by a screw joint method to facilitate assembly. Furthermore, the intermediate portion of the metal connector may have a flat or curved shape or a metal connector orthogonal to the intermediate portion may have a passable through hole, and thus the bolt portion of both metal connectors are positioned at the same level as are the heights of the top ends of the steel beams intersecting at right angles.

0) US2010180519A – PRECAST WALL PANELS AND METHOD OF ERECTING A HI...

7) Family number: 46169228 (US2010180519A) © PatBase

Title: PRECAST WALL PANELS AND METHOD OF ERECTING A HIGH–RISE BUILDING USING THE PANELS

Priority: CN201280008218 20120208 EP20120744820 20120208 US20090356414 20090120 US20110023062 20110208 WO2009US31573 20090121 US20130874760 20130501 WO2012US24219 20120208

Family:

Publication number	Publication date	Application number	Application date
AU2009338184 AA	20100729	AU20090338184	20090121
AU2009338184 BB	20160512	AU20090338184	20090121
AU2012214539 AA	20120816	AU20120214539	20120208
AU2012214539 BB	20170406	AU20120214539	20120208
CA2826202 AA	20130730	CA20122826202	20120208
CN103403277 A	20131120	CN201280008218	20120208
CN103403277 B	20160113	CN201280008218	20120208
CN105714932 A	20160629	CN201610061038	20120208
DE602012021511 D1	20160929	DE201260021511T	20120208
EP2430250 A1	20120321	EP20090838994	20090121
EP2430250 A4	20140604	EP20090838994	20090121
EP2430250 B1	20160810	EP20090838994	20090121
EP2673428 A1	20131218	EP20120744820	20120208
EP2673428 A4	20140813	EP20120744820	20120208
EP2673428 B1	20160810	EP20120744820	20120208
IN05476DN2011 A	20131004	IN2011DN05476	20110715
IN07043DN2013 A	20160429	IN2013DN07043	20130807
JP2014508233 T2	20140403	JP20130553504T	20120208
JP6027983 B2	20161116	JP20130553504T	20120208
US2010180519 AA	20100722	US20090356414	20090120
US2011126484 AA	20110602	US20110023062	20110208
US2014047786 AA	20140220	US20130874760	20130501
US8074414 BB	20111213	US20090356414	20090120
US8631616 BB	20140121	US20110023062	20110208
WO10085245 A1	20100729	WO2009US31573	20090121
WO12109293 A1	20120816	WO2012US24219	20120208

Probable Assignee: NEWCO VENTURES LLC

Assignee(s):(std): BAKER WILLIAM F ; BESJAK CHARLES ; CARRION JUAN ; CAVANAGH JOHN A ; SKIDMORE OWINGS AND MERRILL LLP ; NEWCO VENTURES LLC ; MACDONALD JAMES E ; MERRILL LLP ; STEWART ROBERT C

Assignee(s): SKIDMORE OWINGS AND MERRILL LLP NEW YORK ; NEWCO VENTURES LLC SOUTH PLAINFIELD

Inventor(s):(std): BAKER WILLIAM F ; BESJAK CHARLES ; CARRION JUAN ; CAVANAGH JOHN A ; CHARLES BESJAK ; JUAN CARRION ; MACDONALD JAMES E ; STEWART ROBERT C ; MACDONALD JAMES C

Inventor(s): CAVANAGH JOHN A CENTERPORT ; BESJAK CHARLES WATCHUNG ; BAKER WILLIAM F EVANSTON ; STEWART ROBERT C ANNANDALE ; MACDONALD JAMES E NORTH BERGEN ; STEWART ROBERT ; MACDONALD JAMES ; CAVANAGH JOHN ; BAKER WILLIAM

Agent(s): GRIFFITH HACK; FINLAYSON AND SINGLEHURST; PIERROU MATTIAS; AWAPATENT AB; KOIKE AKIRA; IGA SEIJI; FUJII TOSHIYA; SONNENSCHEIN NATH AND ROSENTHAL LLP; SNR DENTON US LLP; DENTONS US LLP; BURTON THOMAS J ET

AL; KAPMAR DIMITRY ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/04 E04B1/18 E04B1/24 E04B1/30 E04B1/34 E04B1/61 E04B2/00 E04B2/64 E04B2/84 E04B5/00 E04C2/06 E04C3/00 E04C5/08 E04C5/16 E04D1/36 E04G21/16 E04G21/26 E04G3/00 E04H1/00 (Advanced/Invention); E04B2/00 E04H1/00 (Core/Invention)

CPC: E04C5/161 E04C5/162 E04B2/64 E04C2/06 E04B1/04 E04B1/24 E04B1/2403 E04B1/34 E04B2001/2415 E04B2001/2496 E04G21/16 E04G21/26

European class: E04B1/04 E04B1/24 E04B1/34 E04C5/16A E04C5/16B E04G21/16 E04G21/26 P04B1/24B P04B1/24B4 P04B1/24W

US class: 52/223.1 52/235 52/236.1 52/236.3 52/236.5 52/236.7 52/236.9 52/250 52/252 52/253 52/426 52/426P 52/578 52/578S 52/583.1 52/586.1 52/586.2 52/745.1 52/745.100S 52/79.14 52/79.140P

Classification Explorer

Cited documents: US8307601 BB, US8166717 BB, US7941985 BB, US7665264 BA, US7204060 BB, US7185467 BB, US7140155 BA, US7121520 BB, US7121061 BB, US7114695 BB, US6959515 BA, US6955016 BA, US6892498 BA, US6658799 BA, US6557316 BB, US6543371 BA, US6516583 BA, US6496996 BA, US6493996 BA, US6477814 BA, US6457281 BA, US6301851 BA, US6230465 BA, US6076319 A, US5813175 A, US5761862 A, US5737895 A, US5706620 A, US5493836 A, US5184808 A, US5065558 A, US5048257 A, US5035100 A, US4936069 A, US4649682 A, US4635422 A, US4606165 A, US4294051 A, US4219978 A, US4145861 A, US4142340 A, US4065905 A, US4059939 A, US4018021 A, US3952471 A, US3882649 A, US3851024 A, US3640039 A, US3512819 A, US3435580 A, US3398498 A, US3355852 A, US3292331 A, US3261135 A, US2751776 A, US2664740 A, US2618146 A, US2142305 A, US2011094182 AA, US2011030288 AA, US2011023397 AA, US2010180519 AA, US2010162658 AA, US2010058686 AA, US20100058686, US2009249725 AA, US2008083181 AA, US2006272251 AA, US2006185305 AA, US2004211140 AA, US2004118080 AA, US2004118069 AA, US2004118066 AA, US2004052589 AA, US2004020145 AA, US2003183742 AA, US1990656 A, US1501288 A, US1031926 A, US04649682, JP1230843 A2, JP01230843, CN1514901 A, CN101680227 A, CA1147928 A1,

Forward Citations: US9617724, US9328528, US9243398, US8919058, US2015275499, US2015040505, US2014030051, US2014005807, US2012174522, US2012110928, KR20140013926, KR101702933, EP2685019, CN103569568, CN103403277, CN103403277,

Abstract:
Source: US2010180519A A precast wall system and a method for constructing a high−rise building using the precast wall system is disclosed. The system includes a plurality of interconnected precast panels. Each precast panel has a top end plate, a bottom end plate, a plurality of vertical bars disposed between and attached to the end plates and a cementitious material encasing the vertical bars and defining a plurality of sides of the respective panel. A first group of the interconnected precast panels are arranged vertically on a second group of the interconnected precast panels and the top end plate of each panel corresponding the first group is connected to the bottom end plate of a respective one of the panels corresponding to the second group. Methods for horizontally and vertically connecting the precast panels to each other are also disclosed.

0) US5713130A – PARTIALLY THICK–WALLED ELONGATED METALLIC MEMBE...

8) Family number: 8538890 (US5713130A) © PatBase

Title: PARTIALLY THICK–WALLED ELONGATED METALLIC MEMBER AND METHODS OF MAKING AND CONNECTING THE SAME

Priority: CA19952139829 19950109 JP19940023167 19940124 JP19940156744 19940614 JP19940336196 19941222 JP19940059889 19940304 JP19940156774 19940614 JP19940336197 19941222

Family:

Publication number	Publication date	Application number	Application date
AU199510044 A1	19950803	AU19950010044	19950104
AU685878 B2	19980129	AU19950010044	19950104
CA2139829 AA	19950725	CA19952139829	19950109
CA2139829 C	20030812	CA19952139829	19950109
DE69424857 D1	20000713	DE19946024857	19941229
DE69424857 T2	20001228	DE19946024857T	19941229
EP0672475 A1	19950920	EP19940309896	19941229
EP0672475 B1	20000607	EP19940309896	19941229
JP2614417 B2	19970528	JP19940156774	19940614
JP2742395 B2	19980422	JP19940336197	19941222
JP2821095 B2	19981105	JP19940336196	19941222
JP7292771 A2	19951107	JP19940336196	19941222
JP8007635 A2	19960112	JP19940156774	19940614
JP8060747 A2	19960305	JP19940336197	19941222
US5713130 A	19980203	US19940365638	19941228

Probable Assignee: DAI ICHI HIGH FREQUENCY CO LTD

Assignee(s):(std)**:** NAT HOUSE IND ; DAI ICHI HIGH FREQUENCY CO LTD ; DAIWA HOUSE IND ; PANAHOME CO LTD

Assignee(s): WATANABE YASUO ; DAI ICHI HIGH FREQUENCY CO ; DAIWA HOUSE IND CO ; DAIWA HOUSE IND CO LTD ; NATL HOUSE IND CO LTD ; DAIWA HOUSE INDUSTRY CO ; DAIWA HOUSE INDUSTRY CO LTD ; DAIWA HOUSE INDUSTRY CO LTD OSAKA ; HANYOH SUSUMU ; FUKUDA AKIRA ; FURUMI KENJI

Inventor(s):(std)**:** FUKUDA AKIRA ; FUKUDA AKIRA C O DAIWA HOUSE I ; FURUMI KENJI ; FURUMI KENJI C O DAIWA HOUSE I ; FURUUMI KENJI ; HANYOH SUSUMU ; HANYOH SUSUMU C O DAI ICHI HIG ; WATANABE YASUO ; WATANABE YASUO C O DAI ICHI HI ; MORIMOTO TAIJI ; NAKAAGE SUSUMU ; YOKOYAMA KATSUMI

Inventor(s): AKIRA FUKUDA ; SUSUMU HANYOH ; WATANABE YASUO C O DAI ICHI HIGH FREQ CO ; WATANABE YASUO C O DAI ICHI HIGH FREQ CO LTD ; YASUO WATANABE ; HANYOH SUSUMU C O DAI ICHI HIGH FREQ CO ; HANYOH SUSUMU C O DAI ICHI HIGH FREQ CO LTD ; KENJI FURUMI ; FURUMI KENJI C O DAIWA HOUSE IND CO ; FURUMI KENJI C O DAIWA HOUSE INDUSTRY CO ; FURUMI KENJI C O DAIWA HOUSE INDUSTRY CO LTD ; FUKUDA AKIRA C O DAIWA HOUSE IND CO ; FUKUDA AKIRA C O DAIWA HOUSE INDUSTRY CO ; FUKUDA AKIRA C O DAIWA HOUSE INDUSTRY CO LTD

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT ATTORNEYS PTY LTD; SMART AND BIGGAR

Designated states: DE FR GB

International class (IPC 8–9)**:** B21C37/15 B21C37/16 B21D39/04 B21J5/08 B21J9/08 E04B1/24 E04B1/58 E04C3/32 F16B35/04 F21S4/00 F21S8/04 F21V17/00 F21V21/02 (Advanced/Invention); B21J5/08 B21J9/08 F16B35/04 (Advanced/Non–invention); B21C37/15 B21J5/06 B21J9/00 E04B1/24 F21S4/00 F21S8/04 F21V17/00 F21V21/02 (Core/Invention); B21J5/06 B21J9/00 F16B35/04 (Core/Non–invention)

International class (IPC 1–7)**:** B21C37/16 B21D21/04 B21D26/00 B21D39/04 B21J15/04 B21J5/08 B21J9/08 B21K21/08 E04B1/24 E04B1/38 E04B1/58 E04C3/32 F16B29/00 F16B35/04 F21S3/02 F21V17/00

	F21V21/02
CPC:	B21C37/15 Y10T29/49623 Y10T29/49631 Y10T29/49634 Y10T29/49771 Y10T29/49948 Y10T29/49963 B21C37/16 B21J5/08 B21J9/08 E04B1/24 E04B2001/2415 E04B2001/2418 E04B2001/2445 E04B2001/2448 E04B2001/2451 E04B2001/2454 E04B2001/2457 E04B2001/246 E04B2001/2472 E04B2001/2496
European class:	B21C37/15 B21C37/16 B21J5/08 B21J9/08 E04B1/24 P04B1/24B22 P04B1/24B4 P04B1/24B40 P04B1/24B41 P04B1/24B42 P04B1/24B5 P04B1/24B50 P04B1/24B51 P04B1/24C3 P04B1/24W
US class:	29/407.05 29/525.02 29/525.11 29/897.3 29/897.33 29/897.35 298/973 72/342.5 72/342.6
Classification Explorer	
Cited documents:	US4625533 A, US4014089 A, US3842644 A, US3487196 A, US3198928 A, JP60009543 A2, JP60009543, JP59206134 A2, JP59087943 A2, JP54037125 U1, JP52000470 A2, JP4179754 A2, JP4041735 A2, JP4034358 U, JP4004937 A2, JP3212533 A2, JP3212533, JP3166440 A2, JP3166438, JP2147140 A2, JP1143408 U, GB2242378 A1,
Forward Citations:	WO09150728, US8833127, US8245734, US7667157, US7231798, US6911089, US6238156, US6206392, US2012003496, US2006065651, US2006065035, US2004083957, KR101546665, KR101449188, JP5902882, JP3649575, JP2011016662, JP2009197472, JP2002038471, JP10220432, EP0960754, DE102009008944,

Abstract:
Source: US5713130A A method of and an apparatus for manufacturing an elongated metallic member (1) having at least one thickened wall area defined at a portion thereof. That portion of the elongated metallic member (1) is heated to a plasticizable temperature to form a heated area (5) while the latter is moved along the metallic member (1) and, at the same time, axially inwardly compressed to allow upsetting at the heated area (5), to thereby form a thickened wall area. A trailing portion (1a) of the thickened wall area of the elongated metallic member (1) immediately after the heated area (5) is cooled. The ratio (V/W) of a compressing speed V relative to the moving speed W of the position of the heated area (5) in reference to the thickened portion (1a) of the metallic member (1) is progressively increased from a small value, employed at an initial stage of wall thickening, along the metallic member (1) to an aimed value, employed at a steady stage of wall thickening, to thereby progressively increase a wall thickening ratio along the metallic member (1) to a designed value. The subsequent wall thickening is carried out while the ratio is maintained at said designed value for the steady stage of wall thickening. A method of connecting two metallic members (1) in end−to−end fashion and a method of connecting a beam to the metallic member (1) are also disclosed.

0) US2002064426A – COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR...

9) Family number: 34422367 (US2002064426A) © PatBase

Title: COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR METAL PLATE ARCH–TYPE STRUCTURES

Priority: JP19980501014 19970611 JP19980501014 19970611 US19980097860 19980616 WO1997CA00407 19970611 US19960662070 19960612 US19970662070 19970612

Family:

Publication number	Publication date	Application number	Application date
AU199730211 A1	19980107	AU19970030211	19970611
AU715030 B2	20000113	AU19970030211	19970611
BRPI9709714 A	20000111	BR1997PI09714	19970611
CA2255903 AA	19981124	CA19972255903	19970611
CA2255903 C	20030325	CA19972255903	19970611
CN1125908 C	20031029	CN19971095436	19970611
CN1221467 A	19990630	CN19971095436	19970611
DE69715194 D1	20021010	DE19976015194	19970611
DE69715194 T2	20030430	DE19976015194T	19970611
EP0904465 A1	19990331	EP19970924831	19970611
EP0904465 B1	20020904	EP19970924831	19970611
ES2182082 T3	20030301	ES19970924831T	19970611
JP2000511978 T2	20000912	JP19980501014T	19970611
JP2007071022 A2	20070322	JP20060343624	20061220
JP4031811 B2	20080109	JP20060343624	19970611
JP4031811 B2	20080109	JP20060343624	20061220
JP4035168 B2	20080116	JP19980501014	19970611
KR20000016602 A	20000325	KR19980710198	19981212
NO318605 B1	20050418	NO19980005825	19981211
NO985825 A	19981215	NO19980005825	19981211
NO985825 A0	19981211	NO19980005825	19981211
NZ333129 A	20000327	NZ19970333129	19970611
PL184271 B1	20020930	PL19970330546	19970611
PL330546 A1	19990524	PL19970330546	19970611
PT904465 T	20030131	PT19970924831T	19970611
RU2244778 C2	20050120	RU19990100392	19970611
RU99100392 A	20001027	RU19990100392	19990112
US2002064426 AA	20020530	US19980097860	19980616
US5833394 A	19981110	US19960662070	19960612
US6595722 BB	20030722	US19980097860	19980616
WO9747825 A1	19971218	WO1997CA00407	19970611

Probable Assignee: AIL INT INC

Assignee(s):(std)**:** AIL INTERNAT CORP ; AIL INTERNAT INC ; WILSON MICHAEL W ; AIL INTERNATIONAL INC ; AIL INTERNATL INC

Assignee(s): MICHAEL W WILSON ; MCCAVOUR THOMAS C ; AIL INTERNATIONAL INC NEW BRUNSWICK ; AIL INTERNATIONAL INC SACKVILLE ; AIL INTERNATIONAL CORP ; AIL INT ; AIL INT INC

Inventor(s):(std)**:** MCCAVOUR THOMAS C ; MCCAVOUR C ; MAKKAVUR TOMAS S

Inventor(s): THOMAS C MCCAVOUR

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SIM AND MCBURNEY

Designated states:	AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN YU
International class (IPC 8–9):	E01D4/00 E01F5/00 E02D29/045 E03F3/04 E04B1/32 E21D11/20 (Advanced/Invention); E01D4/00 E02D29/045 E03F3/04 (Advanced/Non–invention); E01D4/00 E01F5/00 E02D29/045 E03F3/04 E21D11/14 (Core/Invention)
International class (IPC 1–7):	E01D4/00 E01F5/00 E02D E02D29/045 E02D29/45 E03F3/00 E03F3/04 E04B1/32 E21D11/20
CPC:	E01F5/005 E02D29/045
European class:	E01F5/00B E02D29/045
US class:	405/126 405/288
Classification Explorer	
Cited documents:	US5375943 A, US5326191 A, US4563107 A, US4390306 A, US4318635 A, US4186541 A, US4141666 A, US4099386 A, US4099359 A, US3855801 A, US3673806 A, US3509725 A, US3508406 A, US2067493 A, GB2140848 A1, FR2508072 A1, DE2657229 A1, CA862402 A,
Forward Citations:	WO14134859, WO13023275, WO11092331, WO11092331, WO10056691, WO07073075, WO07073017, WO07021114, WO07003044, USD566852, US9617750, US9163392, US9151577, US9088142, US9085977, US9038328, US8955262, US8256173, US8220220, US8157475, US7861346, US7217064, US7056064, US7052209, US7052209, US6550816, US6050746, US2015252579, US2015007758, US2012301223, US2012020738, US2011250024, US2010122504, US2009214297, US2008307744, US2008298903, US2007000077, US2006150567, US2003136455, RU2593854, RU2471039, RU2471038, RU2471037, RU2471036, RU168800, KR20090091052, KR101654931, KR100837212, ITRM20090259, ES2330397, EP2354447, EP1966450, EP1966450, EP1896659, EP1896659, EA017922, CN105544608, CN105484759, CN105442463, CN105401596, CN104213515, CN103276675, CN103161349, CN103161349, CN103114520, CN102433846, CN102359062, CN102322275, CN102322275, AU2009200615,

Abstract:
Source: US2002064426A A composite concrete reinforced corrugated metal arch–type structure comprises: i) a first set of shaped corrugated metal plates interconnected in a manner to define a base arch structure with the corrugations extending transversely of the longitudinal length of the arch; ii) a second series of shaped corrugated metal plates interconnected in a manner to overlay the first set of interconnected plates of the base arch, the second series of plates having at least one corrugation extending transversely of the longitudinal length of the arch with the troughs of the corrugation of the second series of plates secured to the crests of the first set of plates; iii) the interconnected series of second plates and the first set of plates define individual, transversely extending, enclosed continuous cavity filled with concrete to define an interface of the concrete enclosed by the metal interior surfaces of the second series of crests and first set of troughs; iv) the interior surfaces of the cavity for each of the first and second plates having means for providing a shear bond at the concrete–metal interface to provide individual curved beams traversing the arch whereby the structure provides positive and negative bending resistance and combined bending and axial load resistance to superimposed loads.

0) US2009107065A – BUILDING CONSTRUCTION FOR FORMING COLUMNS AND B...

10) Family number: 43198191 (US2009107065A) © PatBase

Title: BUILDING CONSTRUCTION FOR FORMING COLUMNS AND BEAMS WITHIN A WALL MOLD

Priority: US20070000112P 20071024 US20080137224P 20080729 US20080231875 20080908 US20090208224P 20090223 US20090456707 20090622 US20090456707 20090722 WO2009US04335 20090727 US20110628044P 20111024 US20110629442P 20111118 US20120398243 20120216 US20120400103 20120219 US20120398168 20120217 US20120437707 20120402 US20120437630 20120402

Family:

Publication number	Publication date	Application number	Application date
AU2009277150 AA	20100204	AU20090277150	20090727
IN00351MN2011 A	20110826	IN2011MN00351	20110223
US2009107065 AA	20090430	US20080231875	20080908
US2010058700 AA	20100311	US20090456707	20090622
US2012144765 AA	20120614	US20120398243	20120216
US2012144767 AA	20120614	US20120400103	20120219
US2012174512 AA	20120712	US20120398168	20120217
US2012186174 AA	20120726	US20120437630	20120402
US2012186180 AA	20120726	US20120437707	20120402
US8161699 BB	20120424	US20090456707	20090622
US8176696 BB	20120515	US20080231875	20080908
US8671637 BB	20140318	US20120400103	20120219
US8756889 BB	20140624	US20120398168	20120217
US8763331 BB	20140701	US20120437630	20120402
US8800227 BB	20140812	US20120437707	20120402
WO10014192 A1	20100204	WO2009US04335	20090727

Probable Assignee: LEBLANG DENNIS WILLIAM

Assignee(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Assignee(s): DENNIS LEBLANG

Inventor(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Inventor(s): DENNIS LEBLANG

Agent(s): BAXTER IP; BAXTER PATENT ATTORNEYS PTY LTD; DENNIS LEBLANG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/16 E04B1/18 E04B1/38 E04B1/64 E04B2/00 E04B2/08 E04B2/30 E04B2/32 E04B2/76 E04B2/84 E04B2/86 E04C1/42 E04C2/10 E04C2/20 E04C2/52 E04C3/09 E04G11/06 E04G9/00 (Advanced/Invention); E04B2/86 E04C3/04 (Advanced/Non–invention); E04B1/18 E04B2/04 E04G11/00 E04G9/00 (Core/Invention)

CPC: E04B1/164 E04B2/7412 E04B1/80 E04B2/58 E04B1/14 E04B1/165 E04B2/763 E04B2/8617 E04B2/8635 E04B2/8641 E04B2/8647 E04C3/09 E04C2003/0473

European class: E04B1/14 E04B1/16C E04B1/16D E04B1/80 E04B2/58 E04B2/76C1 E04C3/09 P04B2/74C2P P04B2/86E1 P04B2/86G P04B2/86G1 P04B2/86H P04C3/04S3U

US class: 249/19 249/192 249/192S 249/19S 52/220.1 52/220.100P 52/220.2 52/220.200P 52/252 52/252P 52/302.1 52/302.100P 52/309.11 52/309.12 52/309.4 52/309.400S 52/426 52/426P 52/426S 52/439 52/439P 52/479 52/479S 52/506.05 52/506.050P 52/588.1 52/588.100S 52/698 52/698S 52/762 52/762S

Cited documents: US8161699 BB, US8109058 BB, US8037652 BB, US7908807 BB, US7790302 BB, US7681368 BA, US7666258 BB, US7415805 BB, US7409800 BB, US7395999 BB, US7308778 BB, US7278244 BA, US7254925 BB, US7232605 BB, US7231746 BB, US7185467 BB, US7162845 BB, US7077988 BB, US7028440 BB, US7028439 BB, US6988347 BB, US6978581 BA, US6952905 BB, US6935081 BB, US6880304 BA, US6869669 BB, US6851235 BB, US6837013 BB, US6817151 BB, US6754995 BA, US6729094 BA, US6708459 BB, US6701684 BB, US6698710 BA, US6681539 BB, US6662516 BB, US6647686 BB, US6609340 BB, US6588168 BB, US6584742 BA, US6568138 BA, US6564521 BA, US6541097 BB, US6523312 BB, US6519904 BA, US6481178 BB, US6438918 BB, US6430890 BA, US6408594 BA, US6401417 BA, US6378260 BA, US6355193 BA, US6308491 BA, US6293067 BA, US6269608 BA, US6263628 BA, US6256960 BA, US6250033 BA, US6247280 BA, US6240692 BA, US6167624 BA, US6167624 B1, US6164035 A, US6151858 A, US6134861 A, US6131365 A, US6125608 A, US6122888 A, US6119432 A, US6044603 A, US6041562 A, US6041561 A, US6026620 A, US5992114 A, US5950389 A, US5943775 A, US5864993 A, US5842314 A, US5842276 A, US5839249 A, US5819496 A, US5809726 A, US5809724 A, US5758463 A, US5722198 A, US5655350 A, US5638651 A, US5628158 A, US5596860 A, US5566518 A, US5526629 A, US5524400 A, US5505031 A, US5497589 A, US5381635 A, US5365716 A, US5353560 A, US5335472 A, US5279091 A, US5279088 A, US5207045 A, US5138813 A, US5062250 A, US4930278 A, US4909007 A, US4889310 A, US4813193 A, US4774794 A, US4744185 A, US4724794 A, US4703602 A, US4602467 A, US4357783 A, US4338759 A, US3678638 A, US2008127607 AA, US2008066408 AA, US2007278381 AA, US2007227086 AA, US2007199266 AA, US2007062134 AA, US2007044392 AA, US2006260267 AA, US2006251851 AA, US2004068948 AA, US2003106280 AA, US2001027630 AA, US1892605 A, US1850402 A,

Forward Citations: WO16032537, WO14128047, WO14059546, WO12092108, WO11127522, US9677285, US9617724, US9611656, US9598891, US9593491, US9574347, US9566742, US9534397, US9512621, US9493940, US9469984, US9464444, US9464443, US9422713, US9388566, US9382709, US9340966, US9328506, US9324730, US9322162, US9316006, US9267294, US9260869, US9255414, US9222261, US9157233, US9115503, US9115500, US9097016, US9091068, US9074369, US9068350, US9038343, US9032685, US9016027, US8997421, US8978334, US8978331, US8950130, US8875465, US8863463, US8839580, US8776468, US8769891, US8756890, US8661762, US8631623, US8621798, US8615952, US8607523, US8601761, US8578675, US8544233, US8375670, US8375669, US8359799, US8307598, US8276332, US2017121958, US2017067245, US2015354205, US2015300018, US2015267393, US2015218831, US2015001764, US2014332658, US2014250828, US2014165490, US2014150368, US2014116000, US2014115991, US2014115989, US2014115988, US2014109503, US2014069040, US2014059963, US2014059958, US2014000199, US2013326984, US2013295338, US2013273310, US2013192161, US2013180190, US2013118104, US2013074432, US2013036688, US2012285108, US2012231231, US2012227346, US2012225236, US2012144765, US2012124927, US2012096785, US2012040135, US2012036803, US2011302875, US2011220966, US2011113724, US2011091679, US2011036048, US2011036046, US2010176525, US2010058686, US2010005746, US2009282759, US2009277119, US2009064619, RU2610951, ITVI20100078, FR3002251, CN105569255, CN103758249, CN103031905, CN102587502,

Abstract:
Source: US2009107065A The present invention relates to an improved wall system where a wall form mold has a structural insulated core assembled to form a structural insulated panel (SIP) to form a concrete beam and concrete column to be poured anywhere within the wall as well as between building modules when placed together and erected vertically. The interlocking wall molds interlock within the wall as well as between panels and modules. The wall panels allow concrete columns and beams to be formed in any size and shape. The structural insulated core consists of interlocking foam spacers and support channels which can be glued or screwed together to form an independent wall or as part of a precast wall with columns and beams integrated within the wall panels. Insulated flanges within the wall forming mold separates the wall forming structure from the wall surfaces.

0) US2015068138A – CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM...

11) Family number: 58688176 (US2015068138A) © PatBase

Title: CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM ASSEMBLY PLATFORM

Priority: US20130876475P 20130911 US20140061285P 20141008 US20140484051 20140911 US20150878420 20151008 US20160148546 20160506 WO2015US54685 20151008

Family:

Publication number	Publication date	Application number	Application date
IN201747010246 A	20170414	IN201747010246	20170323
US2015068138 AA	20150312	US20140484051	20140911
US2016076269 AA	20160317	US20150878420	20151008
US2016251853 AA	20160901	US20160148546	20160506
US9506266 BB	20161129	US20150878420	20151008
WO15038805 A1	20150319	WO2014US55236	20140911
WO16057790 A1	20160414	WO2015US54685	20151008

Probable Assignee: ADITAZZ INC

Assignee(s):(std)**:** ADITAZZ INC

Inventor(s):(std)**:** FOLDENAUER DONALD ; KIM SUNGMIN ; RUBEL ZIGMUND ; REID NICHOLAS ; MOORE MARK ; HAMOUDA EHAB ; FOLDENAUER DONALD J

Agent(s): WILSON MARK A ET AL; WILSON MARK A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/04 E04B1/06 E04B1/19 E04B1/348 E04B1/38 E04B1/41 E04B5/00 E04B5/02 E04B5/04 E04B5/10 E04B5/14 E04B5/17 E04B5/44 E04C2/06 E04C5/01 E04C5/04 E04C5/08 E04C5/16 E04F13/02 E04H1/00 E04H1/04 E04H12/14 E04H12/16 E04H12/34 (Advanced/Invention); E04B1/24 (Advanced/Non–invention)

CPC: E04H12/16 E04C5/08 E04H12/14 E04H12/34 E04H1/04 E04B1/3483 E04B5/10 E04B5/44 E04B5/17 E04B5/023 E04B2005/176 E04C2/044 E04B1/24 E04B5/04 E04B5/14 E04B2001/2424 E04B2001/2442 E04B2001/2454 E04B2001/2484 E04C2/06 E04C5/04 E04C5/16 E04C5/0645 E04B2005/173

US class: 52/223.6 52/414 52/649.1 52/653.1 52/741.3 52/745.13 52/98

Classification Explorer

Cited documents: WO9733788 A1, US938458 A, US8840341 BB, US8448280 BB, US8245469 BB, US7963073 BA, US7281356 BB, US6857241 BA, US6804923 BA, US6793436 BA, US6568139 BB, US6484471 BB, US6467223 BA, US6308478 BA, US6178710 BA, US6178710 B1, US5953864 A, US5950378 A, US5809712 A, US5806273 A, US5802652 A, US5758467 A, US5678372 A, US5671582 A, US5642968 A, US5425214 A, US5399050 A, US5396747 A, US5216860 A, US5113625 A, US4972537 A, US4800697 A, US4330970 A, US4300320 A, US4285173 A, US4144369 A, US4120131 A, US4080765 A, US4037375 A, US3842562 A, US3832817 A, US3429092 A, US3029561 A, US2780150 A, US2215975 A, US2137009 A, US2016251853 AA, US2016130798 AA, US2015068138 AA, US2015013255 AA, US2014202795 AA, US2014041328 AA, US2012233945 AA, US2011283643 AA, US2011131905 AA, US2010251656 AA, US2010101160 AA, US2009308005 AA, US2009272067 AA, US2009266010 AA, US2009188193 AA, US2009057486 AA, US2008295433 AA, US2008083181 AA, US2008010943 AA, US2007101675 AA, US2007000077 AA, US2006179750 AA, US2004060249 AA, US1912290 A, US1624802 A, US1523811 A, US1319731 A, US1061665 A,

Forward Citations: US9506266, US2016076269, US2014202795,

Abstract:
Source: US2015068138A Embodiments of a deck assembly module for a steel framed building include a modular concrete deck platform. The platform includes a concrete slab having a top major surface and a bottom major surface and a structural grid pattern of reinforcing bar within the concrete slab. The concrete slab further includes a shear connector opening on a side surface of a side of the concrete slab. The shear connector opening is a recess on the side surface of the concrete slab. The platform further includes an integrated attachment assembly within the shear connector opening on the side of the concrete slab. The integrated attachment assembly includes a shear connector rebar including an extension of continuous reinforcing bar extending out of the shear connector opening and back into the shear connector opening. The shear connector rebar and the shear connector opening form a closed loop.

0) US2013224020A – FLOATING HYBRID COMPOSITE WIND TURBINE PLATFORM...

12) Family number: 51083443 (US2013224020A) © PatBase

Title: FLOATING HYBRID COMPOSITE WIND TURBINE PLATFORM AND TOWER SYSTEM

Priority: US20100410127P 20101104 US20110883652 20111104 US20130863074 20130415 US20120624050P 20120413 US20120653816P 20120531 US20130883652 20130506 WO2011US59335 20111104 WO2013US36596 20130415 US20160346320 20161108

Family:

Publication number	Publication date	Application number	Application date
BR112013011146 A2	20160802	BR20131111146	20111104
CA2870349 AA	20141010	CA20132870349	20130415
CL2013001239 A1	20141017	CL20130001239	20130506
CL2014002753 A1	20150605	CL20140002753	20141013
CN103282274 A	20130904	CN201180062603	20111104
CN103282274 B	20170329	CN201180062603	20111104
CN104619984 A	20150513	CN201380030463	20130415
EP2635489 A2	20130911	EP20110838877	20111104
EP2635489 A4	20150128	EP20110838877	20111104
EP2836708 A1	20150218	EP20130775201	20130415
EP2836708 A4	20160210	EP20130775201	20130415
JP2013545020 T2	20131219	JP20130537865T	20111104
JP2015513046 T2	20150430	JP20150505978T	20130415
JP5950923 B2	20160713	JP20130537865T	20111104
US2013224020 AA	20130829	US20110883652	20111104
US2013233231 AA	20130912	US20130863074	20130415
US2017051724 AA	20170223	US20160346320	20161108
US9394035 BB	20160719	US20130863074	20130415
US9518564 BB	20161213	US20110883652	20111104
WO12061710 A2	20120510	WO2011US59335	20111104
WO12061710 A3	20120628	WO2011US59335	20111104
WO13155521 A1	20131017	WO2013US36596	20130415
WO13155521 A8	20131128	WO2013US36596	20130415

Probable Assignee: UNIV MAINE SYS BOARD TRUSTEES

Assignee(s):(std)**:** GOUPEE ANDREW ; GOUPEE ANDREW J ; UNIV MAINE SYS BOARD TRUSTEES ; UNIV MAIN SYSTEM BOARD OF TRUSTEES ; DAGHER HABIB J ; UNIV OF MAINE SYSTEM BOARD OF TRUSTEE ; VISELLI ANTHONY M ; UNIV OF MAINE SYSTEM BOARD OF TRUSTEES

Assignee(s): VISELLI ANTHONY M399 BUCK STREETBANGORME04401US ; UNIVERSITY OF MAINE SYSTEM BOARD OF TRUSTEES ; DAGHER HABIB J101 BUCK HILL DRIVEVEAZIEME04401US ; OF MAINE SYSTEM BOARD OF TRUSTEES UNIV107 MAINE AVENUEBANGORME04401US ; GOUPEE ANDREW37 TALL PINE LANEDEDHAMME04429US ; OF MAINE SYSTEM BOARD OF TRUSTEE UNIV ; OF MAINE SYSTEM BOARD OF TRUSTEES UNIV ; OF MAIN SYSTEM BOARD OF TRUSTEES UNIV

Inventor(s):(std)**:** DAGHER HABIB J ; GOUPEE ANDREW ; GOUPEE ANDREW J ; VISELLE ANTHONY M ; VISELLI ANTHONY M

Inventor(s): VISELLI ANTHONY M399 BUCK STREETBANGORME04401US ; GOUPEE ANDREW37 TALL PINE LANEDEDHAMME04429US ; HABIB J DAGHER ; DAGHER HABIB J101 BUCK HILL DRIVEVEAZIEME04401US ; ANDREW J GOUPEE ; ANTHONY M VISELLI

Agent(s): RIDOUT AND MAYBEE LLP; ESTUDIO FEDERICO VILLASECA Y CIA; ALESSANDRI Y COMPANIA; GILES ASHLEY SIMON; YAMAMOTO OSAMU; YAMAZAKI KOSAKU; ONO SHINJIRO; TAKEUCHI SHIGEO; KOBAYASHI YASUSHI; MACMILLAN SOBANSKI AND TODD LLC; GILLESPIE TED C

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B1/10 B63B21/50 B63B35/00 B63B35/44 B63B5/14 B63B5/24 E02D27/52 F03D11/00 F03D11/04 F03D13/25 F03D9/00 (Advanced/Invention); B63B1/10 B63B3/04 F03D1/00 (Advanced/Non–invention)

CPC: E02B2017/0091 B63B1/125 B63B5/20 B63B5/22 B63B2001/126 B63B2001/128 B63B21/50 F03D13/22 F05B2230/6102 B63B3/04 B63B5/14 B63B5/24 B63B35/44 B63B2035/442 B63B2035/446 B63B2231/04 B63B2231/50 B63B2231/52 B63B2231/66 B63B2231/68 F05B2240/912 F05B2240/93 F05B2240/95 Y02E10/727 Y02E10/728 Y10T29/49826 B63B2021/505 Y02P70/523 B63B2001/044 F03D13/30 B63B2231/60 F03D13/25 B63B1/107 F03D13/20 B63B1/048

European class: B63B35/44 B63B5/14 B63B5/24 F03D11/04 L63B1/10C L63B231/04 L63B231/50 L63B231/52 L63B231/66 L63B231/68 L63B3/04 L63B35/44C L63B35/44E7 R05B240/912 R05B240/93 R05B240/95

US class: 1/1 114/265 29/428 416/84 416/85

Classification Explorer

Cited documents: WO15120229 A1, WO15120227 A1, WO13160579 A1, WO13040871 A1, WO11137903 A2, WO10138978 A2, WO10110329 A1, WO09131826 A2, WO09087200 A2, WO04087494 A2, WO04061302 A2, WO02087959 A2, US9243418 BB, US8752495 BB, US8622011 BB, US8471396 BB, US8082719 BB, US7841143 BB, US7819073 BB, US7810756 BB, US7476074 BB, US7281881 BA, US7242107 BA, US7234409 BB, US7156037 BB, US7086809 BB, US6957519 BB, US6601649 BB, US6488446 BA, US6427403 BA, US5931602 A, US4470723 A, US3977344 A, US3958381 A, US3490406 A, US2016096599 AA, US2016075413 AA, US2016025064 AA, US2015071779 AA, US2013276687 AA, US2013233231 AA, US2013224020 AA, US2012103244 AA, US2012014752 AA, US2011210233 AA, US2011192333 AA, US2011155038 AA, US2011148115 AA, US2011037264 AA, US2011006539 AA, US2010186651 AA, US2010129162 AA, US2010101173 AA, US2010071275 AA, US2010008733 AA, US2009307998 AA, US2009072544 AA, US2008184654 AA, US2008014025 AA, US2006165493 AA, US2003168864 AA, US2003165361 AA, JP2012056333 A2, JP2011521820 T2, JP201064649, JP2010539378 T2, JP2010280301 A2, JP2010216273 A2, JP2010115978 A2, JP2010064649 A2, JP2010064648 A2, JP200947069, JP2009248792 A2, JP2009248792, JP2009162229 A2, JP2009162229, JP2009085167 A2, JP2009047069 A2, JP2006513344 T2, JP2006131025 A2, JP2003184729 A2, JP2003184729, GB2378679 A1, GB2344843 A1, GB2159468 A1, FRWO2013160579, FR2970938 A1, EP2143629 A1, DKWO2011137903, DE10300214 A1, CNWO2013040871, CN204415681 U, CN203652079 U, CN203158199 U, CN1817737 A, CN1767976 A, CN101939537 A,

Forward Citations: WO17001246, WO16138088, WO16094541, WO15131756, WO15120227, WO15048147, WO14030007, WO14013098, WO14013097, WO13093160, US9651029, US9592889, US9522716, US9518564, US9518402, US9394035, US9238896, US9011047, US2016362162, US2016215762, US2016075413, US2016017868, US2015159635, US2014079490, US2011219713, KR101488292, KR101487804, JP6059801, JP5758501, JP2015521710, EP3049668, EP2899111, CN105836062, CN105257076, CN104925231, CN104790426, CN104790426,

Abstract:
Source: US2013224020A A wind turbine platform is configured for floating in a body of water and includes a hull defining a hull cavity therein. The hull is formed from reinforced concrete. A tower is configured to mount a wind turbine and is also connected to the hull. An anchor member is connected to the hull and to the seabed.

0) WO0146526A1 – EARTH RETENTION AND PILING SYSTEMS RETENUE DE T...

13) Family number: 11486060 (WO0146526A1) © PatBase

Title: EARTH RETENTION AND PILING SYSTEMS

Priority: AU1999PQ04796 19991221 AU20010024927 20001221 AU20040101058 20041215 AU20050200758 20050221 AU20070100294 20070412 AU20080243212 20081112 WO2000AU01600 20001221 AU20120202472 20120430

Family:

Publication number	Publication date	Application number	Application date
AU200124927 A5	20010703	AU20010024927	20001221
AU2004101058 AD	20050224	AU20040101058	20041215
AU2005200758 AA	20050317	AU20050200758	20050221
AU2007100294 AE	20070503	AU20070100294	20070412
AU2008243212 AA	20081204	AU20080243212	20081112
AU2012202472 AA	20120517	AU20120202472	20120430
AU2012202472 BB	20120927	AU20120202472	20120430
AU479699 A0	20000203	AU1999PQ04796	19991221
WO0146526 A1	20010628	WO2000AU01600	20001221

Probable Assignee: TRISTANAGH PTY LTD

Assignee(s):(std)**:** MACDONALD IAN ROBERT ; TRISTANAGH PTY LTD

Inventor(s):(std)**:** MACDONALD IAN ; MACDONALD IAN ROBERT

Inventor(s): IAN MACDONALD ; IAN ROBERT MACDONALD

Agent(s): CULLENS PATENT AND TRADE MARK ATTORNEYS; CULLENS PTY LTD

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

International class (IPC 8–9): E02D11/00 E02D17/04 E02D5/02 E02D5/04 E02D5/74 E02D5/80 E02D7/00 (Advanced/Invention); E02D5/74 (Advanced/Non–invention); E02D11/00 E02D17/02 E02D5/02 E02D5/74 E02D5/80 E02D7/00 (Core/Invention)

International class (IPC 1–7): E02D11/00 E02D5/02 E02D5/04 E02D5/80 E02D7/00

CPC: E02D5/74 E02D17/04

European class: E02D17/04 E02D5/74

Classification Explorer

Cited documents: US4498323 A, FR2376917 A1, DE19915759 A1, AU7095396 A1, AU1524992 A1,

Forward Citations: WO09097355, WO09097355, US9085872, US8714877, US8322949, US7722293,

Abstract:
A method of stabilisation and confinement of earth structures including the steps of: (a) excavating an earth structure to a predetermined depth; (b) inserting earth anchors (76) into a wall structure formed by excavation; (c) tensioning each of said earth anchors (76) to a required value against bearing members (74) lying against the surface of the wall structure; (d) interconnecting the exposed ends of selected earth anchors with reinforcing members; and, (e) applying a sprayable cementitious composition to the wall surface to encapsulate part or all of said reinforcing members.

0) US4776145A – MULTI PURPOSE DOME STRUCTURE AND THE CONSTRUCTI...

14) Family number: 29371029 (US4776145A) © PatBase

Title: MULTI PURPOSE DOME STRUCTURE AND THE CONSTRUCTION THEREOF

Priority:

CA19870547969 19870928 CA19870616173 19870928 CA19875479690 19870928
CA19952153631 19950711 US19890436479 19891114 US19910753652 19910930
EP19870307967 19870909 US19900477715 19900209 US19880206849 19880615
US19830559911 19831209 US19890396377 19890821 US19860915269 19861003
US19970874494 19970613 US19940279635 19940722 US19930076261 19930611
US19930012986 19930129 US19910782436 19911025 US19910797904 19911126

Family:

Publication number	Publication date	Application number	Application date
AT76671 E	19920615	AT19870307967T	19870909
CA1300840 A1	19920519	CA19870547969	19870928
CA1315944 A1	19930413	CA19870616173	19870928
CA1315944 A2	19930413	CA19910616173	19910923
CA2153631 AA	19960123	CA19952153631	19950711
DE3779388 D1	19920702	DE19873779388	19870909
EP0262818 A2	19880406	EP19870307967	19870909
EP0262818 A3	19881026	EP19870307967	19870909
EP0262818 B1	19920527	EP19870307967	19870909
US4776145 A	19881011	US19830559911	19831209
US4879859 A	19891114	US19860915269	19861003
US5094044 A	19920310	US19900477715	19900209
US5105590 A	19920421	US19890436479	19891114
US5134830 A	19920804	US19890396377	19890821
US5177919 A	19930112	US19910753652	19910930
US5408793 A	19950425	US19930012986	19930129
US5675941 A	19971014	US19940279635	19940722
US5881530 A	19990316	US19970874494	19970613

Probable Assignee: DYKMANS MAXIMILIAAN JACOBUS

Assignee(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAN J ; DYKMANS MAXIMILLIAAN J

Assignee(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF ; DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF US

Inventor(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAAN J ; DYKMANS MAXIMILLIAN J

Inventor(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF

Agent(s): SMART AND BIGGAR

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

International class (IPC 8–9): B65D88/00 B65D88/34 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04B7/10 E04C5/08 E04C5/18 E04G11/04 E04G11/06 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 (Advanced/Invention);
E04B1/32 (Advanced/Non–invention);
B65D88/00 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04C5/00 E04C5/18 E04G11/00 E04G21/12 E04H7/00 (Core/Invention)

International class (IPC 1–7): B65D88/00 B65D90/00 E02D5/74 E04B1/16 E04B1/32 E04G11/04 E04H7/00

CPC: B65D88/34 E04B1/168 E04B1/3211 E04B7/08 E04B2001/3217 E04B2001/3264 E04C5/08 E04C5/18 E04G11/04 E04G11/065 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 E04B7/102 E04G11/045 E04G2021/127

European class: B65D88/34 E04B1/16F1 E04B1/32C E04B7/08 E04B7/10B E04C5/08 E04C5/18 E04G11/04 E04G11/06B2 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 P04B1/32H P04B1/32N1

US class: 156/143 220/319 264/32 264/34 405/229 405/244 417/38 427/496 427/501 427/508 427/513 52/169.7 52/2 52/2.15 52/215 52/223.14 52/223.2 52/223.3 52/223.4 52/223.6 52/223L 52/223R 52/224 52/235 52/245 52/247 52/249 52/297 52/298 52/309.16 52/309.17 52/573 52/573.1 52/741 52/741.1 52/741.4 52/745.01 52/745.06 52/745.07 52/745.2 52/80 52/80.1 52/800 52/801 52/81.1 52/81.6 522/980

Classification Explorer

Cited documents: USRE28689 E, US5675941 A, US5408793 A, US5134830 A, US5094044 A, US4884747 A, US4879859 A, US4875808 A, US4869467 A, US4776145 A, US4723751 A, US4696133 A, US4642856 A, US4629592 A, US4628861 A, US4593360 A, US4588541 A, US4578302 A, US4550544 A, US4514471 A, US4493286 A, US4468412 A, US4446083 A, US4442059 A, US4372733 A, US4365455 A, US4324074 A, US4321776 A, US4320075 A, US4317317 A, US4307554 A, US4302979 A, US4302978 A, US4289564 A, US4271647 A, US4269011 A, US4226677 A, US4170093 A, US4155967 A, US4148332 A, US4144680 A, US4126976 A, US4104097 A, US4102956 A, US4094110 A, US4077177 A, US4069642 A, US4068777 A, US4021972 A, US3984266 A, US3956816 A, US3927497 A, US3922426 A, US3914077 A, US3906700 A, US3892367 A, US3886961 A, US3872634 A, US3824751 A, US3801009 A, US3769763 A, US3765605 A, US3719341 A, US3676976 A, US3666190 A, US3666189 A, US3643910 A, US3619432 A, US3619431 A, US3616070 A, US3572596 A, US3557515 A, US3518748 A, US3510041 A, US3504474 A, US3462521 A, US3410039 A, US3409222 A, US3397503 A, US3338010 A, US3315343 A, US3280525 A, US3278128 A, US3277219 A, US3233376 A, US3153302 A, US3139464 A, US3118010 A, US2952947 A, US2892239 A, US2836529 A, US2833593 A, US2579183 A, US2544828 A, US2414310 A, US2413243 A, US2388701 A, US2335300 A, US2270229 A, US2250175 A, US2223418 A, US2185749 A, US1870487 A, US1668486 A, US1492327 A, SU7616799, SU761679 T, SU715757 T, SU596291 T, SU559009 T, SU236743 T, JP54022470 A2, GB938939 A, GB815942 A, GB776077 A, GB2092215 A1, FR94811 E, FR935724 A, FR549619 A, FR2490745 A1, FR1489329 A, FR1383795 A, DE3329296 A1, DE2722984 A1, DE2716325 A1, DE2013337 A1, DE1052103 B, DE1052103 A, DE1052103 A, CA707523 A, BE549619 A, AU788927 A1,

Forward Citations: WO9528538, WO16055840, WO15118258, WO14085629, WO14085629, WO05082747, WO0063503, USRE39554, USD746670, USD711214, USD608440, US9650800, US9611662, US9605423, US9556626, US9546495, US9453606, US9441389, US9284114, US9217255, US9181690, US8991137, US8973336, US8684220, US8650830, US8627612, US8621790, US8191318, US8167676, US7971602, US7913462, US7765746, US7682993, US7506483, US7260998, US6892505, US6843443, US6840013, US6771731, US6739103, US6675548, US6616381, US6421963, US6276095, US6240686, US6090465, US5918438, US5881530, US5759849, US5680739, US5675941, US5673528, US5672506, US5647503, US5542229, US5436385, US5408793, US5361550, US5313763, US5168676, US5094044, US5025605, US2015267434, US2015197953, US2015075099, US2014250803, US2014245691, US2014231617, US2014144916, US2012311941, US2012297698, US2012285575, US2012211391, US2012102875, US2012000546, US2011219707, US2010320915, US2010294778, US2010154320, US2010154319, US2010154318, US2010101163, US2009212168, US2009025306, US2008196348, US2008128030, US2007102063, US2007094938, US2006230985, US2006207337, US2006037278, US2005210767, US2005166475, US2005097830, US2005077293, US2004045227, US2004006926, US2003233798, US2003150188, US2003054542, US2002187730, US2002074444, RU2582682, GB2473017, GB2473017, GB2218453, FR3017123, ES2136521, EP2578235, EP1690585, EP1087069, EP0829586, EP0572243, EP0357151, EP0357151, DE202008017456, AU2007100985,

Abstract:
Source: US4776145A An improved dome structure on a base is disclosed comprising of a membrane sandwiched between layers of rigidifying material such as shotcrete which also serve to embed the circumferential and radial prestressing members. Circumferential prestressing can be applied to minimize bursting stresses. Further layers of rigidifying material can then be applied over the circumferential prestressing as a final protection and cover. The radial prestressing materials can contain spacers or hooks to preclude the circumferential prestressing material from riding up on the structure. The lower portion of the dome can include a reverse curvature to minimize stresses and stabilize the structure.

15) Family number: 43489452 (US2009173037A) © PatBase

Title: PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY EQUIPMENTS

Priority: CA20082642047 20081020 CA20082765207 20081020 US20080148051 20080415 US20080971018 20080108 US20080248051 20081009 US20090248051 20091009 US20080811199 20081017 US20080971018 20080107 US20080148051 20081009 WO2008CA01809 20081017

Family:

Publication number	Publication date	Application number	Application date
AU2008346725 AA	20090716	AU20080346725	20081017
BRPI0819947 A2	20150616	BR2008PI19947	20081017
CA2642047 AA	20090707	CA20082642047	20081020
CA2642047 C	20120626	CA20082642047	20081020
CA2765207 AA	20090707	CA20082765207	20081020
CN101910530 A	20101208	CN200880124304	20081017
EP2240652 A1	20101020	EP20080870040	20081017
EP2240652 A4	20140611	EP20080870040	20081017
IL206699 A0	20101230	IL20080206699	20081017
IN01385MN2010 A	20101112	IN2010MN01385	20100629
JP2011508837 T2	20110317	JP20100540994T	20081017
JP5336514 B2	20131106	JP20100540994T	20081017
KR20110016853 A	20110218	KR20107013188	20081017
MX2010007574 A1	20101110	MX20100007574	20081017
NZ586584 A	20130531	NZ20080586584	20081017
US2009173037 AA	20090709	US20080248051	20081009
US2010281784 AA	20101111	US20080811199	20081017
US2011120049 AA	20110526	US20080971018	20080108
WO09086617 A1	20090716	WO2008CA01809	20081017

Probable Assignee: LEO ANO

Assignee(s):(std)**:** ANO LEO ; LEO ANO

Inventor(s):(std)**:** ANO LEO ; LEO ANO

Agent(s): SPRUSON AND FERGUSON; ADE AND CO INC; THOMSON NEIL DAVID; ANO LEO; JEROME D JACKSON JACKSON PATENT LAW OFFICE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/18 E04B1/343 E04B1/348 E04B1/61 E04B1/62 E04B1/66 E04B1/70 E04B1/74 E04B1/76 E04B1/80 E04C2/20 E04C2/24 E04C2/26 E04C2/30 E04C2/38 E04C2/52 E04C3/02 E04C3/29 E04D13/08 E04D13/18 E04G E04G21/00 E04H1/00 E06B3/66 F24F5/00 (Advanced/Invention);
E04B1/00 E04B1/18 E04B1/61 E04B1/62 E04B1/66 E04C2/10 E04C2/30 E04C2/38 E04C3/29 E04G21/00 (Core/Invention);
E04G (Subclass/Invention)

International class (IPC 1–7): E04B1/18 E04B1/62 E04C2/30 E04G21/00

CPC: F24F2005/0078 E04B1/74 E04B1/80 E04B1/0023 E04B1/30 E04B1/803 E04B2/7412 E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/1625 E04D13/17 E04D2013/0893 E06B3/6612 E06B3/6722 F24F5/0075 F24F13/18 Y02B30/92 Y02B80/12 Y02B80/24

European class: E04B1/00C E04B1/30 E04B1/74 E04B1/80 E04B1/80B E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/16A1C E04D13/17 E06B3/66D F24F13/18 F24F5/00K P04B2/74C2P P04D13/08W P06B3/67F2 Y02B10/22 Y02B30/92 Y02B80/12 Y02B80/24

US class: 52/16 52/16P 52/173.1 52/173.100S 52/173.3 52/173.300S 52/220.1 52/220.100S 52/302.1 52/302.100S 52/309.4 52/309.400S 52/633 52/633S 52/64 52/64S 52/741.1 52/741.100S 52/741.4 52/741.400P 52/745.13 52/745.130S 52/782.1 52/782.100P 52/782.100S 52/786.1 52/786.100S 52/79.1 52/79.100S

Classification Explorer

Cited documents: WO06123005 A1, US7788868 BB, US6976337 BB, US6916392 BB, US6857237 BA, US6830791 BA, US6793971 BB, US6705939 BB, US6701681 BB, US6676506 BB, US6637644 BB, US6622456 BB, US6584735 BB, US6578331 BA, US6446402 BA, US6429961 BA, US6216688 BA, US6209269 BA, US6158190 A, US6105336 A, US6000192 A, US5953883 A, US5890341 A, US5873203 A, US5787652 A, US5765330 A, US5761864 A, US5753069 A, US5608995 A, US5573618 A, US5424111 A, US5347779 A, US5269109 A, US5265389 A, US5197242 A, US4981003 A, US4671032 A, US4642958 A, US4571909 A, US4465058 A, US4393861 A, US4380994 A, US4303058 A, US4295415 A, US4236360 A, US4062347 A, US3981294 A, US3736715 A, US3643394 A, US3641724 A, US3343474 A, US3258889 A, US3217455 A, US3161267 A, US2641449 A, US2011023759 AA, US2010287851 AA, US2007251164 AA, US2007094964 AA, US2006123723 AA, US2005252108 AA, US2004209567 AA, US2004172892 AA, US2003217522 AA, US2003167714 AA, US2003150174 AA, US2003101664 AA, US2003041557 AA, US06000192, US05890341, JP5024756 U1, JP2001065074 A2, JP05024756 U, EP0794294 A1, DE19804008 A1,

Forward Citations: WO17017608, US9617750, US9562351, US9435113, US9310132, US9297164, US9234355, US9109364, US8789328, US8677696, US8375670, US8272182, US8152608, US2016040424, US2015361654, US2015292204, US2014230354, US2014182224, US2014133092, US2014124053, US2012318475, US2012304562, US2012108158, US2011308184, US2011225916, US2011107693, US2011091679, RU2582241, JP2011052411, EP3133221, CN103958796, CN102561725, CN102561725, CN102561531, CN102535841,

Abstract:
Source: US2009173037A This continuing present patent offers the "repeat at will" built–in on/off vacuum effect after installed at site, coordinating with the forced fluid to create a window treatment effect, and as well as being able to provide the three stages insulation value at the same time. The other parts of this continued patent are supplementation of additional claims and to complete and improve the parent patent regarding energy conservation for buildings. It offers more efficient ways of constructing energy efficient buildings for residential, commercial and industrial use.

16) Family number: 32847771 (US2008083181A) © PatBase

Title: INTEGRAL COMPOSITE–STRUCTURE CONSTRUCTION SYSTEM

Priority: EC20030004697 20030718 EC2003SP04697 20030718 US20060306969 20060117 WO2004EC00003 20040430 WO2003EC00003 20030718

Family:

Publication number	Publication date	Application number	Application date
AT393271 E	20080515	AT20040730490T	20040430
CN1823203 A	20060823	CN200480020203	20040430
DE602004013329 D1	20080605	DE200460013329T	20040430
ECSP034697 A	20040628	EC2003SP04697	20030718
EP1650371 A1	20060426	EP20040730490	20040430
EP1650371 B1	20080423	EP20040730490	20040430
IN06002DN2005 A	20091002	IN2005DN06002	20051222
US2008083181 AA	20080410	US20060306969	20060117
US7624550 BB	20091201	US20060306969	20060117
WO05007986 A1	20050127	WO2004EC00003	20040430
WO05007986 B1	20050421	WO2004EC00003	20040430

Probable Assignee: OSPINA PEDRO

Assignee(s):(std)**:** NEL OSPINA CABEZAS PEDRO ; OSPINA CABEZAS PEDRO NEL ; OSPINA CABEZAS PEDRO NEL FERNANDO ; OSPINA PEDRO

Inventor(s):(std)**:** NEL OSPINA CABEZAS PEDRO ; OSPINA CABEZAS PEDRO NEL ; OSPINA CABEZAS PEDRO NEL FERNANDO ; OSPINA PEDRO

Agent(s): LORENTE BERGES ANA ET AL; FURR LAW FIRM; JEFFREY

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B1/24 E04B1/30 E04B2/84 E04B5/00 E04B5/16 E04B5/21 E04B5/29 E04B5/40 E04B5/43 E04B9/22 E04C3/294 (Advanced/Invention); E04B2/84 (Advanced/Non–invention); E04B1/16 E04B1/24 E04B1/30 E04B2/84 E04B5/00 E04B5/16 E04B5/17 E04B5/32 E04B5/43 E04B9/22 E04C3/29 (Core/Invention); E04B2/84 (Core/Non–invention)

International class (IPC 1–7): E04B2/84 E04B5/00 E04B5/29 E04B5/40

CPC: E04B1/161 E04B1/24 E04B1/30 E04B2/845 E04B5/29 E04B5/40 E04B5/43 E04B2001/2415 E04B2001/2445 E04B2001/2448 E04B2001/2481 E04B2001/2484 E04C3/294

European class: E04B1/16A E04B1/24 E04B1/30 E04B5/29 E04B5/40 E04B5/43 E04C3/294 P04B1/24B22 P04B1/24B4 P04B1/24B40 P04B1/24D P04B1/24E P04B2/84P2

US class: 52/262 52/299 52/331 52/333 52/334 52/335 52/336 52/341 52/351 52/600 52/687

Classification Explorer

Cited documents: US6112482 A, US5918428 A, US5809722 A, US5595034 A, US5544464 A, US4653237 A, US4592184 A, US4584803 A, US4527372 A, US4115971 A, US3736716 A, US3596421 A, US2003115815 AA, LU88443 A, GB2053308 A1, EP1227198,

Forward Citations: WO14094458, WO14047738, WO08019699, US9562355, US9540815, US9506266, US9447553, US9260866, US9194095, US9180323, US8978340, US8943776, US8863455, US8752347, US8695294, US8407959, US8341907, US2015330075, US2015196785, US2015139719, US2015068138, US2014144101, US2014047786, US2013305652, US2012324811, ITCS20120013, EA019161, CN104812972,

CN104812972, CN103953111, CN103953111, CN103835422, CN103835422, CN103485483, CN103485479, CN103485478, CN103485477, CN103397696, CN103397696, CN103061417,

Abstract:
Source: US2008083181A Composite structural system for floors or roofs comprising steel beams and reinforced concrete slab or shear walls comprising steel columns and reinforced concrete diaphragms. In both cases a steel plate with holes crossed with rebars is welded to the steel beam or to the steel column which performs the integral combination of the concrete, the structural element and the rebars.

0) US2008098687A – SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HI...

17) Family number: 41770225 (US2008098687A) © PatBase

Title: SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HIGH HIGH STRENGTH MASONRY STRUCTURES – WITH SUPERSTRONGBLOKS

Priority: US20060854913P 20061027 US20070925302P 20070419 US20070977470 20071025 WO2007US82488 20071025

Family:

Publication number	Publication date	Application number	Application date
AU2007317627 AA	20080515	AU20070317627	20071025
CA2667658 AA	20090427	CA20072667658	20071025
CA2667658 C	20131001	CA20072667658	20071025
CN101611202 A	20091223	CN200780046836	20071025
EP2074267 A2	20090701	EP20070854412	20071025
IL198399 A0	20100217	IL20070198399	20071025
IN02814DN2009 A	20090619	IN2009DN02814	20090428
JP2010508453 T2	20100318	JP20090534851T	20071025
KR20090076991 A	20090713	KR20097010754	20071025
MX2009004524 A1	20090619	MX20090004524	20071025
RU2009119974 A	20101210	RU20090119974	20071025
US2008098687 AA	20080501	US20070977470	20071025
US8850763 BB	20141007	US20070977470	20071025
WO08057778 A2	20080515	WO2007US82488	20071025
WO08057778 A3	20081106	WO2007US82488	20071025

Probable Assignee: PATRICIA MARSH

Assignee(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F ; ROGER MARSH ; PATRICIA MARSH ; PATRICIA M MARSH ; ROGER F MARSH

Assignee(s): 3B CONSTRUCTION SOLUTIONS INC ; BOLT A BLOK INC ; MARSH ROGER F ; MARSH PATRICIA M

Inventor(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F

Inventor(s): PATRICIA M MARSH ; ROGER F MARSH ; MARSH ROGER ; MARSH PATRICIA

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BENNETT JONES LLP; EVENS PAUL JONATHAN; RITCHISON LAW OFFICES PC JOHN D RITCHISON; BRANNON SOWERS AND CRACRAFT; KRAMER LESLIE P

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04C5/08 E04H5/00 E04H5/08 F16B17/00 (Advanced/Invention); E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04H5/00 F16B17/00 (Core/Invention); E04B (Subclass/Invention)

International class (IPC 1–7): E04B1/02

CPC: E04B2/16 E04B2002/0254

European class: E04B2/16 P04B2/02M3E

US class: 411/84 52/223.7 52/293.2 52/606

Classification Explorer

Cited documents: US962463 A, US952305 A, US6915614 BB, US6691471 BB, US6427390 BA, US6244785 BA, US6178714 BA, US6178714 B1, US6167669 BA, US6167669 B1, US6098357 A, US5950319 A, US5809732 A, US5511902 A, US4640071 A, US3763609 A, US3296758 A, US2963828 A, US2007186502 AA, US2007107333 AA, US2007017176 AA, US2006168906 AA, US2004020145 AA, US1892605 A, US1753451 A, JPS55160459 U, JP6040146 U1, JP55160459 U1, JP4020632 A2, JP2002081152 A2, JP2002030682 A2,

Forward Citations: WO11143248, US9523201, US9328501, US9045877, US8931223, US8893447, US8225578, US2016169526, US2014130434, US2013212965, US2013129444, US2011167749, ITBO20110240, CN102605876, CN102605876,

Abstract:
Source: US2008098687A An improved, high strength construction system that uses post tensioning. It is comprised of a series of interconnected, super heavy duty hollow core blocks 102 with minimal ducts 103, a series of tendons 105, and a plurality of anchors or plates 104 with additional features. The system 101 is configured with the plurality of adjacent blocks 102 contiguous and touching one another and demountably coupled to each other by means of the tendons 105 and anchors 103. The unique features include a strong, durable full plate 104 and bolt 105 both of which may be treated for corrosion resistance. This new coupling results in a structure that is far stronger than an ordinary block structure built with mortar and standard reinforcing. The SYSTEM has more predictable and controlled strength which is stronger than most reinforced concrete systems.

0) US6330776B – STRUCTURE FOR REINFORCING CONCRETE MEMBER AND R...

18) Family number: 12927850 (US6330776B) © PatBase

Title: STRUCTURE FOR REINFORCING CONCRETE MEMBER AND REINFORCING METHOD

Priority: JP19970251193 19970916 JP19970251194 19970916 JP19980146403 19980527 JP19980199317 19980714 JP19970251195 19970916 JP19980001126 19980106 WO1998JP04149 19980916 JP19980206985 19980722 JP19980206982 19980722 JP19980206984 19980722 JP19980206983 19980722

Family:

Publication number	Publication date	Application number	Application date
CA2302790 AA	20000303	CA19982302790	19980916
EP1016767 A1	20000705	EP19980942996	19980916
EP1016767 A4	20010801	EP19980942996	19980916
JP11152907 A2	19990608	JP19980206982	19980722
JP11152931 A2	19990608	JP19980206983	19980722
JP11256838 A2	19990921	JP19980206984	19980722
JP2000027446 A2	20000125	JP19980199317	19980714
JP2000045565 A2	20000215	JP19980206985	19980722
JP3870364 B2	20070117	JP19980199317	19980714
JP3870365 B2	20070117	JP19980206984	19980722
JP3882348 B2	20070214	JP19980206983	19980722
JP3882349 B2	20070214	JP19980206985	19980722
JP3918310 B2	20070523	JP19980206982	19980722
KR100408437 B1	20031206	KR20007002781	20000316
KR20010024043 A	20010326	KR20007002781	20000316
TW406160 B	20000921	TW19980115453	19980916
US6330776 BA	20011218	US20000517509	20000302
WO9914453 A1	19990325	WO1998JP04149	19980916

Probable Assignee: NIPPON STEEL CORP

Assignee(s):(std)**:** FUJITA TADAO ; IKETANI JUN ICHI ; INADA YASUO ; JINNO YASUO ; SHIMIZU CONSTRUCTION CO LTD ; NIPPON STEEL CORP ; TONEN CORP ; SAITO HIDETO ; TSUKAGOSHI HIDEO ; SAWAIDE MINORU ; SHIMIZU YOSHIHIKO ; NIPPON STEEL AND SUMITOMO METAL CORP

Assignee(s): SHIMIZU CORP

Inventor(s):(std)**:** IKETANI JUN ICHI ; IKETANI JUNICHI ; INADA YASUO ; JINNO YASUO ; SAITO HIDEO ; SAITO HIDETO ; SAWAIDE MINORU ; SHIMIZU YOSHIHIKO ; TSUKAGOSHI HIDEO ; FUJITA TADAO

Inventor(s): FUJITA TADAO AND

Agent(s): SIM AND MCBURNEY

Designated states: AT BE CA CH CY DE DK ES FI FR GB GR IE IT KR LU MC NL PT SE US

International class (IPC 8–9): D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02 (Advanced/Invention); E04G23/02 (Advanced/Non–invention); D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02 (Core/Invention)

International class (IPC 1–7): D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02

CPC: E04C5/07 E04G23/0218 E04H9/02 E04G23/0225 E04G2023/0251 E04G2023/0262

European class: E04C5/07 E04G23/02C E04H9/02

US class: 52/167.1 52/514 52/649.1 52/649.2 52/698 52/721.4

Classification Explorer

Cited documents: WO9621785 A1, US6189286 BA, US5960597 A, US5937606 A, US5924262 A, US5657595 A, US5649398 A, JP9144338 A2, JP9144334 A2, JP9072105 A2, JP9072101 A2, JP4189977 A2, JP3033360 A2, FR2754556 A1, DE19733065 A1, DE19702246 A1,

Forward Citations: WO16005941, WO14138092, WO04003316, WO0204759, US9290957, US9290956, US9194140, US9085898, US8567146, US8429877, US7493738, US7453544, US7311964, US7141284, US6964141, US6652187, US6457289, US2014245695, US2010147449, US2009013625, US2007199264, US2007121050, US2005139308, US2004040257, US2004025465, US2003181114, RU2494204, KR101736040, KR101681520, KR101618252, KR101395202, KR100806958, JP5848103, JP5757632, JP4952049, JP4639380, JP4182855, JP4043271, JP2014015791, JP2013108267, JP2013087934, JP2013007250, JP2012052293, JP2011196138, JP2008297871, JP2008231827, JP2007303100, JP2007009482, JP2007002468, JP2006052633, JP2005120629, JP2003293598, GB2450988, GB2450988, ES2342527, EP1726742, EP1726742, DE102007010574, CN104196256, CN104196256, CN102182326, CN102153369,

Abstract:
Source: US6330776B In the structure for reinforcing a concrete member and the reinforcing method of the present invention, a reinforcing sheet is arranged and joined to a various kinds of concrete member, such as column, beam, wall, floor, and the like, by applying the reinforcing sheet to the surface of the concrete member and attaching to the fixing anchors joined to the concrete member or the other concrete member surrounding the concrete member. The fixing anchor comprises a large amount of reinforcing fiber, and is obtained by bundling a part of the reinforcing fiber. The unbundled portion of the fixing anchor is spread along the surface of the concrete member. The reinforcing sheet is over−lapped to the unbundled portion using resin adhesives. In addition, reinforcing fibers, such as carbon fiber, aramid fiber, glass fiber, and the like are preferably used as the material comprising the fixing anchor and reinforcing sheet. Thereby, the reinforcing member can be joined via the fixing anchor to the concrete members. Therefore, it is possible to securely join the edges of the reinforcing member, and reliably exert the reinforcing effects on the concrete member.

0) US2004237435A – REINFORCED–CONCRETE COLUMN IN THE SOIL PIT AND ...

19) Family number: 30749632 (US2004237435A) © PatBase

Title: REINFORCED–CONCRETE COLUMN IN THE SOIL PIT AND METHOD OF ITS CONSTRUCTION

Priority: RU20030116153 20030602 RU20030132805 20031112 US20040854565 20040525 US20080193554 20080818 WO2004RU00100 20040317

Family:

Publication number	Publication date	Application number	Application date
AT364754 E	20070715	AT20040721401T	20040317
DE502004004096 D1	20070726	DE200450004096T	20040317
EA005441 B1	20050224	EA20030001092	20031105
EA200301092 A1	20041230	EA20030001092	20031105
EP1634999 A1	20060315	EP20040721401	20040317
EP1634999 A4	20060628	EP20040721401	20040317
EP1634999 B1	20070613	EP20040721401	20040317
ES2288680 T3	20080116	ES20040721401T	20040317
RU2229557 C1	20040527	RU20030116153	20030602
RU2251608 C1	20050510	RU20030132805	20031112
UA76914 C2	20050715	UA20050003389	20040317
US2004237435 AA	20041202	US20040854565	20040525
US2008304918 AA	20081211	US20080193554	20080818
US7445405 BB	20081104	US20040854565	20040525
US7585134 BB	20090908	US20080193554	20080818
WO04106640 A1	20041209	WO2004RU00100	20040317

Probable Assignee: YURKEVICH ENGINEERING BUREAU L

Assignee(s):(std)**:** LTD LIABILITY CO OINZHIEN ; LTD LIABILITY COMPANY OINZHIEN ; YURKEVICH ENGINEERING BUREAU L ; YURKEVICH PAVEL BORISOVICH

Assignee(s): YURKEVICH ENGINEERING BUREAU LTD ; LIABILITY CO OINZHIENIERNOIE BIURO YURKEVICHAOE LT ; LIABILITY CO OINZHIENIERNOIE BIURO YURKEVICHAOE LTD ; LIMITED LIABILITY COMPANY OINZHIENIERNOIE BIURO YU ; LIMITED LIABILITY COMPANY OINZHIENIERNOIE BIURO YURKEVICHAOE

Inventor(s):(std)**:** JURKEVICH P B ; JURKEVICH PB ; YURKIEVICH PAVEL BORISOVYCH ; YURKEVICH PAVEL BORISOVICH

Agent(s): FRISHAUF HOLTZ GOODMAN AND CHICK PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E02D5/00 E02D5/30 E02D5/34 E02D5/38 E02D5/48 E02D5/60 E02D5/66 E04C3/34 E04C5/06 (Advanced/Invention); E02D5/44 (Advanced/Non–invention); E02D5/24 E04C3/30 E04C5/01 (Core/Invention); E02D5/34 (Core/Non–invention)

International class (IPC 1–7): E02D5/00 E02D5/38 E02D5/60 E02D5/66 E04C3/30

CPC: E02D5/44 E02D5/48 E04C3/34 E04C5/0604

European class: E02D5/48 E04C3/34 E04C5/06A P02D5/44

US class: 405/239 405/257 52/378 52/381

Classification Explorer

Cited documents: US7445405 BB, US6293071 BA, US6219991 BA, US6123485 A, US5599599 A, US5542785 A, US5359829 A, US5359729 A, US4987719 A, US1706002 A, SU1615282 T, SU1177435 T, RU99118847 A, RU2206673 C2, RU2197578 C2, RU2094575 C1, JP4179727 A2, GB1527250 A, DE2724680 A1, CH691691,

Forward Citations: WO07120719, US8511013, US7585134, US2016251856, US2012301227, US2010132282, US2009178356, US2008304918, RU2577780, CN106087979, CN104727307, CN102251520,

Abstract:
Source: US2004237435A A reinforced−concrete column contains reinforcing cage and inserts made monolithic with concrete mix and comprises the upper bearing and lower foundation parts. The method of construction of the column includes operations of manufacture of the column reinforcing cage with inserts, placement of concrete in the non−removable casing in the project position in single− or multi−slit pit with the column making monolithic. The column reinforcing cage is loaded vertically into the pit, centered vertically, and the upper part is fixed from horizontal displacements, the lower foundation part of the column and the inner part of the non−removable casing with the closed−type casing in the upper bearing part of the column are made monolithic with concrete from down to top. After making monolithic, the soil base is widened and cemented via the process pipeline placed inside the reinforcing cage; the space between the non−removable casing and the pit walls in the upper bearing part is filled with granular material.

0) US5202132A – PRODUCTION LINE EQUIPMENT TO MANUFACTURE LARGE ...

20) Family number: 8967833 (US5202132A) © PatBase

Title: Production line equipment to manufacture large concrete panels

Priority: CA19922079039 19920924 US19910770086 19910930

Family:

Publication number	Publication date	Application number	Application date
CA2079039 AA	19930331	CA19922079039	19920924
CA2079039 C	19980526	CA19922079039	19920924
US5202132 A	19930413	US19910770086	19910930

Probable Assignee: ENCON PACIFIC LLC

Assignee(s):(std)**:** CONCRETE PRODUCTS INC ; FJELLAND R GARY ; MYERS DOUGLAS W

Assignee(s): ENCON PACIFIC LLC ; ENCON PACIFIC LLC SUITE

Inventor(s):(std)**:** FJELLAND GARY ; FJELLAND R GARY ; MYERS DOUGLAS W

Agent(s): RIDOUT AND MAYBEE LLP

International class (IPC 8–9)**:** B28B1/093 B28B1/16 B28B11/06 B28B13/04 B28B15/00 B28B7/00 B28B7/02 B28B7/08 E01F8/00 (Advanced/Invention); B28B1/08 B28B1/16 B28B11/04 B28B13/00 B28B15/00 B28B7/00 B28B7/02 E01F8/00 (Core/Invention)

International class (IPC 1–7)**:** B28B1/08 B28B7/06 B28B7/08 B28B7/36 B28B7/42

CPC: B28B1/093 B28B1/16 B28B7/0032 B28B7/007 B28B7/0091 B28B7/02 B28B7/082 B28B11/06 B28B13/04 B28B15/00 E01F8/0017

European class: B28B1/093 B28B1/16 B28B11/06 B28B13/04 B28B15/00 B28B7/00B2 B28B7/00F2 B28B7/00H B28B7/02 B28B7/08B E01F8/00A10

US class: 249/112 249/137 249/155 249/160 249/189 425/385 425/456 425/458 425/62 425/63

Classification Explorer

Cited documents: US4519768 A, US4386901 A, US4379683 A, US4375351 A, US4340351 A, US4321024 A, US4261694 A, US4050868 A, US4030873 A, US4005971 A, US3969056 A, US3910738 A, US3645490 A, US3255991 A, US3201845 A, US2689381 A, US1440618 A,

Forward Citations: WO09089379, US9321615, US8317502, US8162638, US8083510, US8025493, US7802409, US7665712, US7524180, US6923630, US6264867, US6000182, US5524405, US5372349, US2014145361, US2009173872, US2009173871, US2008069917, US2007234664, US2006174569, US2005238745, US2003020191, EP1417104, CN103847000, CN103406989, CN102275216,

Abstract:
Source: US5202132A Overall production line equipment is utilized in producing many large concrete panels, in an initial horizontal position, during each day of many operational days, with these panels preferably being later installed vertically with other like panels to form a sound barrier alongside a vehicle way. Each concrete panel has its own integral pilasters at respective edges, in turn having respective tongue and groove edges; respective patterns and color accents on each side, with the pattern on the then top side being formed by using a rockable stamp subassembly, mounted on a cart; reinforcing throughout the panels, inclusive of the integral pilasters; lifting subassemblies; and anchoring subassemblies, adapted to be later mated with a receiving subassembly anchored in a concrete footing, located where the panel with other panels forms a sound barrier alongside vehicle ways. This, production line equipment is extended longitudinally, utilizing tracks to support several electrically powered vehicles, respectively referred to as tarp roller cart, back rail cart, mesh cart, rebar cart, screed cart, color spreader cart, and stamp cart.

0) US2009217856A – FIXED STRUCTURE PLATFORM ON WATER

21) Family number: 34606707 (US2009217856A) © PatBase

Title: FIXED STRUCTURE PLATFORM ON WATER

Priority: TR20050005181 20051223 WO2006TR00072 20061220

Family:

Publication number	Publication date	Application number	Application date
AT498543 E	20110315	AT20060836010T	20061220
AU2006327288 AA	20070628	AU20060327288	20061220
CA2634916 AA	20080623	CA20062634916	20061220
CN101389527 A	20090318	CN200680053355	20061220
DE602006020175 D1	20110331	DE200660020175T	20061220
EA014336 B1	20101029	EA20080001503	20061220
EA200801503 A1	20090428	EA20080001503	20061220
EP1966037 A2	20080910	EP20060836010	20061220
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IN02963KN2008 A	20090206	IN2008KN02963	20080721
KR20080090456 A	20081008	KR20087018179	20061220
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TR200505181 A2	20070723	TR20050005181	20051223
US2009217856 AA	20090903	US20060158981	20061220
WO07073359 A2	20070628	WO2006TR00072	20061220
WO07073359 A3	20080717	WO2006TR00072	20061220

Probable Assignee: ALPAY INCE

Assignee(s):(std)**:** ALPAY INCE ; INCE ALPAY

Inventor(s):(std)**:** INCE ALPAY ; ALPAY INCE

Agent(s): SPRUSON AND FERGUSON; ROBIC; DERICIOGLU EKIN; VENABLE CAMPILLO LOGAN AND MEANEY PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B17/00 B63B35/44 B63B35/50 B63B9/06 E02B17/06 (Advanced/Invention); B63B17/00 B63B35/00 B63B35/44 B63B9/00 E02B17/00 (Core/Invention)

International class (IPC 1–7): B63B35/44 B63B9/06

CPC: B63B1/107 B63B21/29 B63B21/50 B63B35/44 B63B35/53

European class: B63B1/10C B63B21/50 B63B35/44 L63B21/29 L63B35/53

US class: 114/265

Classification Explorer

Cited documents: US3702105 A, US2399611 A, US1847551 A, US1670524 A, US1511153 A, RU2174930 C2,

Forward Citations: WO16161928, WO15133661, US2011064520, JP5838439, JP2012201191, CN104843151, CN104802952, CN104802952, CN104802949, CN104743080, CN104260843, CN103129716, CN102943432, CN102862655, CN102862655,

Abstract:
Source: US2009217856A The invention relates to the fixed platform which enables to locate on the water any

fixed structure such as the house, garden, road, airport, car park, children's park and holiday village in the seas, lakes and rivers. Our invention comprises the platform (7) where the floats (22) thereof capable of floating are submerged up to a safe zone 3–5 m from the water (10) surface, the floats (22) spending energy to come out on the water surface (5) produce forces to try to maintain the platform (7) always at the same point owing to the tightness of the ropes (3) of the floats (22) and where said platform (7) is prevented from being drifted by the violent storms and huge waves and the currents in the sea, wherein the platform (7) which is manufactured in a manner suitable for its purpose comprises the weight (4) to the end of which the ropes (3) are connected, the connecting ropes (3) serving to maintain the floats (22) at a constant distance from the floor and in submerged state, the floats (22) producing the buoyancy carried over by the platform (7), the carrier columns (21) connecting the floats (22) with the platform (7) and the connecting pieces (20) that connect the columns (21) with the platform (7).

0) WO15166504A2 – CONSTRUCTIONS – INSTANT AND ECONOMICAL BY MECHA...

22) Family number: 60729109 (WO15166504A2) © PatBase

Title: CONSTRUCTIONS – INSTANT AND ECONOMICAL BY MECHANIZATION/ USE OF NEW JIGS AND FIXTURES–REQUIRING SHUTTERING/NO SHUTTERING AT ALL

Priority: WO2014IN00285 20140429

Family:

Publication number	Publication date	Application number	Application date
WO15166504 A2	20151105	WO2014IN00285	20140429

Probable Assignee: SURESH CHAWLA

Assignee(s):(std)**:** SURESH CHAWLA

Inventor(s):(std)**:** SURESH CHAWLA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04G21/00 (Advanced/Invention)

CPC: E04G21/185 E04G11/06 E04G13/02 E04B2/8658 E04G17/06

Classification Explorer

Abstract:
Source: WO15166504A2 [Source: Claim 1] 1. I claim Constructions– Instant and Economical by mechanization/ use of new jigs and fixtures– requiring shuttering/no shuttering at all characterized as technology which reduces time for each activity such activities as reinforcement binding, centering and shuttering, pouring cement concrete mix, fixing wall tiles, external cladding, doors, windows and services etc. by use of mechanization and new jigs and fixtures and various other means due to which the cost of labor component, supervision and other costs can be reduced which forms quite a big chunk for construction sector, whereby the inflation in costs of materials can also be taken care of, the reinforcement binding can be economized, made easy and fast such as by mechanization and introducing rings for columns and beams over central pole/ pipe, the rings can be welded over slip pipe pieces with spacers, which can be slipped over the central pipe/pole to build columns and beams in very short time, whereby the rings, spacers and slip pipe pieces can be build in work shops or factories as per the requirement of sizes and shapes using machines, jigs and fixture as can also be manufactured at very less cost and time due to economy of scales since a column or beam can have one single ring or multiple rings of different diameters and sizes in big sized– column or beam if there is such design requirement but since normally the columns and beams are rectangular, square or round, once the new systems become popular, the rings of various sizes can be available in stores– off the shelf, and the rings can have u shaped pieces called – holders, pre –welded/pre fixed to rings at appropriate locations as per requirement of structural designs to receive the reinforcement bars for tying to it as the process makes it easy for even casual labor under the supervision of site engineer to build column or beam since the pre–stressed concrete panels of least thickness possible for 3mxl.2m size or bigger or smaller sizes can be cut to sizes or made as per sizes of the columns and beams which can be fixed on the outer surfaces of rings, to act as exterior concrete surfaces cum shuttering itself, also the pre stressed concrete panels can be directly fixed on outer surfaces of rings or spacer bars and can be provided if required to provide cover to the rings of columns and beams alternatively, even shuttering made out of wooden boards or polycarbonate sheets or other kinds for columns and beams can also be bound after fixing spacers made out of steel bars welded on outer surfaces of rings for providing gap and cap over the rings, further, such shuttering made in modules or self serving pre–stressed concrete panels can be tied together by nut and bolts fixed on rings or by pipe spacers having another 5 longer pipe with grooves of smaller diameter slipped in to the pipe spacers, such inner pipes can be pierced through the shuttering boards or concrete panels for driving the wedges in to grooves provided in longer pipes to keep the shuttering boards/ pre stressed concrete panels in place tight to introduce cement concrete mixture, also, the reinforcement of walls can again be bound in short time if L0 internal infrastructure of pipes is created by placing vertical pipes with holes at appropriate locations where walls have to be built and horizontal pipes are welded or joined using plumbers to join horizontal pipes to vertical pipes at appropriate heights as per design requirements to form a grid of the center line of walls or civil structure, the horizontal pipes are further fixed to central pipes .5 or poles of vertical columns, the vertical pipes are in turn joined to central pipe /pole of beams, the binding of walls, columns and beams thus form center line of the total structure and an internal infrastructure of the building or civil structure, as once the center line shell is ready, slip pipes with holes having spacers as per width of the walls attached to it can be introduced over the :0 vertical pipes, also loose jointing systems which can also be used to join spacers to vertical pipes, wedges can be fixed in holes of slip pipe pieces and the vertical pipes to form internal infrastructure, pipe runners can also be fixed as

alternative at ends of spacers in horizontal form to provide extra support for pre−stressed concrete panels/ shuttering plates/ shuttering boards/Synthetic 5 sheets etc to rest on both sides of spacers/pipe runners to form boxes for introduction of cement concrete mix and such pre−stressed concrete panels/ shuttering boards etc can be held together by use of more spacers other than the spacers used in pipe pieces slipped over vertical pipes, not to mention that the extra spacers can be made out of rectangular, square or round pipes with 0 internal pipes of lesser diameter to be bigger in length than spacers to come out of holes provided/drilled in pre−stressed concrete panels/shuttering boards etc, the internal pipes can have horizontal grooves provided for incursion of wedges to hold tight and together the boards/ pre stressed concrete panels placed on both sides of central infrastructure, the same system of pipe spacer can be used 5 for columns, beams and other structures, the central infrastructure or pipe grid can have pre−designed reinforcement tied to it in center or on sides or welded mesh tied to it for reinforcement requirements for reinforced cement concrete (RCC) walls, even insulation boards etc can be fixed on one side or both sides of reinforcement, the external boards and internal boards can be fixed to central infrastructure in turns, the internal board/shuttering panels/ pre−stressed concrete panels having holes/ hold fasts can be fixed first with hooks / steel wires etc or magnets to receive all services fixed to its internal side facing internal pipe infrastructure as per the designs, to fix all services, the support of the space in between the boards/shuttering panels/ pre−stressed concrete panels and reinforcement bars or welded mesh can be taken for proper placement of services in required locations, the pre−stressed concrete panels can be cut at places where boxes or plumbing /sanitary items etc. have to be fixed, after all services are in place, the external boards/shuttering panels/ pre−stressed concrete panels can be fixed to internal infrastructure to tie both internal boards/shuttering panels/ pre−stressed concrete panels with external boards/shuttering panels/ pre−stressed concrete panels together using more spacer pipes having internal pipe of lesser diameter to pierce through boards/shuttering panels/ pre−stressed concrete panels and the wedges can be inserted in the grooves of longer pipes to hold internal and external panels together tightly, once the external and internal boards/shuttering panels/ pre− stressed concrete panels are fastened well, the cement concrete mix can be introduced from above to create unified structure which will bind pre−stressed concrete panels into the cement concrete itself and become unified RCC structure while the shuttering materials or boards etc can be removed by removing wedges from grooves, the pre−stressed concrete panels can have tiles/external cladding pre bound to it at the time of casting the pre−stressed concrete panels like stone slabs /tiles etc which can be placed in the moulds, clamps can be attached to stone slabs/tiles etc where casting process has to commence, cement and coarse sand/ fine sand mix can be laid over the stone slabs /tiles and allowed to dry before placing pre−stressed steel bars, wires over the stone slabs /tiles in a removable frame to introduce cement concrete mix of appropriate mix ratio over the dried cement sand mix placed over stone slabs/tile, once the concrete cement is set, the wires can be de−tensioned and outer frame removed for the panel to go for curing and once the slabs with pre fixed external/internal claddings are ready, the panels can be fixed to internal infrastructure in place of normal pre−stressed concrete panels where ever there is such requirement like the external panels can have pre− fixed external cladding on panels fixed on external sides of internal infrastructure of pipes and panels having pre fixed tiles can be placed for toilet or kitchen walls before introducing cement concrete mix from above to provide finished surfaces where ever required, the roof can also be self supported by placing pre−stressed concrete panels resting on horizontal supports and these horizontal supports rest on internal infrastructure of pipes or after casting of cement concrete walls and these horizontal supports can rest on holes provided at appropriate spacing's on top of walls, also these horizontal supports can not only rest on holes or internal infrastructure but extend beyond walls to become self supporting platform for carrying out outside work or exterior jobs of the building where once self supporting pre−stressed concrete panels are in position, services can be provided by cutting pre−stressed concrete panels at locations where concealed boxes or other items have to be fixed on roof and once services are in position, the reinforcement as per requirement is placed over the pre−stressed concrete panels to cast further portion of the roof as per the requirement of thickness of the roof, also, the roofs can be casted by use of tee sections /other sections of steel, placed at appropriate spacing's on vertical pipes of walls as per design requirements with rectangular /round bars welded to it on extruding side of tee and the grid so formed can be placed with flat side of tee on top and round bars/square bars at the bottom of tee section, such grid can be placed on the walls infrastructure/after walls are casted, the square or rectangular bars can have welded mesh with least spaces in between the wires of the welded mesh and these welded mesh can be tied or fixed by welding to round or square boards from bottom to receive the cement concrete mix for roofing, the spaces in closely built welded mesh can be filled first by cement mixture or by dry stone chips or by other methods including fixing plastic sheets/polythene sheets at bottom of welded mesh /above welded mesh. Cement concrete mix can be casted on self supporting steel grid with welded mesh to cover all the member after placing services, more reinforcement if required is placed on steel members at required locations to form the roof, all the steel members perform as reinforcement including tee section, round or square bars and the welded mesh etc, roofs can also be built by first pouring cement concrete mix in walls, once walls are ready in twelve hours or so, holes can be provided at top of walls while casting the walls for pipes and steel structure to extrude out of walls for external scaffolding and to rest shuttering on pipes or steel structure placed in between the holes in the walls at the top, usual reinforcement can be placed with services to pour cement concrete mix 5 and to wait till the roof is solid enough for pipes, steel structure and shuttering to be removed from top of walls of each floor while other activities carry on as usual, with doors and windows duly painted along with frames and all fittings can also be fixed to internal infrastructure while pouring cement concrete mix itself by welding steel sheet frames/ aluminum sheet frames/stone slabs of the 10 size of doors and windows with the width of the sheets exceeding the width of doors and windows frames but not more than the size of the walls to seal the area in between width of door /window frames and shuttering area, where cement concrete mix has to be introduced, if the width of walls is more than the width of door /window frames, stone slabs can also be fixed in between door L5 window frames and walls to be casted, the door/windows can be covered from both sides at the time of pouring of cement concrete mix for protection, the external cladding and tiles can also be fixed to internal infrastructure at required locations by forming frames out of angle or tee section placed at appropriate spacing's both ways having welded mesh of appropriate size, welded to frame, 10 the frame also has hold fasts for frames to get fixed to cement concrete mix and the frames so formed

can be placed in horizontal plane to place all the tiles/stone pieces as per design on the welded mesh, cement sand mixture can be pasted on the outer surfaces of tiles/stone slabs to create soft layer on tiles/stone slabs. Once all the tiles/ stone pieces are placed neck to neck, !5 another frame of same sizes and design can be placed on top of first frame, both frames can be held tight by nut bolts/screwing together from top and sides through extruded pieces with holes, duly welded to frames, the internal frame with tiles/stone pieces will get fixed permanently along with tiles after setting of cement at required location of the buildings, the tiles/stone pieces with soft layer so will act as shuttering for cement concrete mix, the external frames can be removed by unscrewing or removing nut bolts, the voids left be treated later by plaster etc, for footing foundations and raft foundations, modules of cubicle's in self supporting steel structures with rectangular top or square top with height as per the design required can be prebuilt in workshops with reinforcement bound 15 in place by welding or through U shaped pieces placed at appropriate locations as per the designs, the reinforcement bars can extrude in all directions in horizontal plane for raft foundations, the modules can be joined by nut bolts or wedges to form a flat foundation structure and the extruding bars can also be tied together, with the columns in steel structure having reinforcement prebuilt in it can be placed at appropriate locations as per the design and tied or welded to the flat surface with bent reinforcement bars in columns can also be tied at bottom of frames/reinforcement bars as per the requirements of the design, central pipes in footing of columns and columns of raft foundation can be provided with sockets at top to join the pipes of upper floors with pipes coming out of foundation columns to create center line of entire building, for rapid road constructions, frames of channels / other sections / flats of appropriate size in width can be manufactured as per contour of the road in modules with nut bolts etc extruding out of frames for binding together the modules in length and breadth, the frames can have single layer or multiple layers of reinforcement or reinforcement on sides only as per the structural design tied to/welded to it or extruding out of holes provided in the frames for expansion, the modules can be placed on the flat surface of earth created before laying the modules, the flat surface of ground can have compacted layer/ layers of boulders/ stone chips of bigger size, cement and coarse sand mix called PCC can be laid before modules are placed, the lower layer can also be built by placing frames in modules duly joined together using nut bolts etc and cement concrete mix introduced in lower layer as well using bigger stone chips in place of smaller stone chips used in upper layer, for quick constructions of finishing layer, once each module is placed, cement concrete mix can be introduced in the frame by manual labor or through the pumps mounted on trucks to create flat surface of road on top, once one module or multiple modules tied together with nut bolts etc are filled with the cement concrete mix, more modules can be joined to construct roads in fastest way, the frames will remain embedded in cement concrete mix after casting and act as shuttering while casting, for roads in hills, flat sections of steel can be used for sides of road to form the contour easily by bending the flats as per the site condition and welding the reinforcement right at the spot or at a little distance using portable welding sets with generators if electricity is not available to repeat the process of pouring cement concrete mix, for flyover, bridges and structures for elevated railway transport etc the columns along with foundation and top beam can be prebuilt in workshops using methodology of columns as described for columns of buildings and creating self supporting steel structure with prebuilt reinforcement as per design for foundation of column and top beam of column– all tied in single piece can be transported to site for placing in position, for shuttering pre–stressed hollow concrete modules of the size of columns can be built in work shops or pres–stressed Hume pipe pieces/modules can be introduced from above if circular columns have to be built, alternatively regular shuttering as is being used can also be fixed to cast cement concrete mix in installments' as per design requirements, beams of the flyover, bridges and other structures can have self supporting /self loading steel structures which are not only capable of taking the load of self structure but the cement concrete load and the pressure experienced during casting of cement concrete by pressure pumps, the steel structures can also have pre–stressed tendons already provided in the steel structure, spacer bars are also fixed on outer surfaces to fix shuttering on top of spacer bars, the spacer bars provide cover over the steel structure surfaces, the shuttering is fixed by using spacer pipes having smaller, longer pipes in spacer pipes and wedges as described above are driven in grooves, the complete structure is transported to site for loading the self supporting structure on columns, the self supporting steel structure can be built in single unit as per the length required between two columns or in modules to be joined at site to receive the cement concrete mix, for columns on pile caps and well cap foundations, the columns can be prebuilt with reinforcement pre– bound in self supporting steel structures which can be fixed by tying or by welding on pile caps, well caps or by other methods to build columns for flyover and bridges as described above, for dams similar exercise of creating self supporting steel structures with reinforcement prefixed in structures can be manufactured in modules which can be joined together with nut bolts or pipes with grooves to form mega structures to pour cement concrete mix after placing the shuttering as used in columns and beams etc, the civil structures can also be built without the requirement of shuttering at all by welding welded mesh or by binding welded mesh on outer surfaces of structures where solid shuttering is required. "The welded mesh thus can replace shuttering", the welded mesh can be welded or fixed on horizontal pipes/wall runners fixed to spacers of the internal infrastructures, the welded mesh can be manufactured with very little spaces in between the wires, after the welded mesh has been fixed in outer surfaces, the cement concrete mix can be introduced in the boxes formed by the welded mesh surrounding like the usual shuttering, the welded mesh can be covered by thin plastic sheets/polythene sheets etc from outside or by fixing plastic sheets/polythene sheets in side of welded mesh, for flyover as well the outer surfaces can have welded mesh surrounding to act as shuttering. Foundation steel structures can also have welded mesh surrounding to receive the cement concrete mix, reinforced cement concrete structures can also float to create floating ports or floating cities etc by placing empty drums made out of steel or plastics at appropriate locations in self supporting steel structure or stainless structure with steel reinforcement or stainless steel reinforcement to create floating R.C.C. structures after casting of cement concrete mix in self supporting structure having shuttering pre built or by fixing pre stressed concrete panels on external surfaces, new shuttering material can be created by fixing strong shuttering materials like polycarbonate sheets etc on steel frames or aluminum frames having welded mesh below the polycarbonate sheets as support, the frames can have better joining systems like extruding flats with grooves to insert wedges in grooves to join steel /aluminum frames together in horizontal plane and holes in frames to join shuttering panels on both sides of internal infrastructure by spacer pipes as explained or for normal shuttering as in practice, by

creation of central infrastructure right from footing foundations to raft foundations provided in self supporting steel structures with central pipes coming out of structures to facilitate the creation of central infrastructure of columns, beams and walls, will reduce dependence on labor factor, the processes will also reduce mistakes in identifying horizontal and vertical center line for upper floors without creating any structure design issues as central infrastructure is restricted to walls alone which may or may not be load bearing while retaining the design of columns and beams as it is in practice, the columns and beams will be created very fast by use of pre designed and pre manufactured components in factories, after fixing the pre stressed concrete panels of least thickness possible in inside of the central infrastructure pipes, placing of services will become easy as the panels can be cut easily to fix electric boxes, sanitary pipes etc as per design requirements, once services are in place all that is required is to introduce cement concrete mix after fixing external pre stressed panels which can have pre cladding of stone slabs/tiles etc to provide finished surface right from beginning, the tiles cladding of pre stressed concrete panels meant for toilets and kitchen etc will further reduce number of activities already in use in constructions, like total elimination of shuttering, plaster, removal of shuttering, waiting for roofs to dry etc.

0) US2004093817A – REFINEMENTS TO THE CONSTRUCTION SYSTEMS FOR STR...

23) Family number: 28838032 (US2004093817A) © PatBase

Title: REFINEMENTS TO THE CONSTRUCTION SYSTEMS FOR STRUCTURES IN REINFORCED CONCRETE OR SOME OTHER MATERIAL BY MEANS OF HIGH–PRECISION INTEGRAL MODULAR FORMS

Priority: ES20020000264 20021118 ES20020002648 20021118 US20030697203 20031030 US20060495544 20060731

Family:

Publication number	Publication date	Application number	Application date
DE10353277 A1	20090507	DE20031053277	20031114
ES2281212 AA	20070916	ES20020002648	20021118
ES2281212 BA	20080816	ES20020002648	20021118
FR2850415 A1	20040730	FR20030005952	20030519
FR2850415 B1	20070406	FR20030005952	20030519
GB200310568 A0	20030611	GB20030010568	20030508
GB2395221 A1	20040519	GB20030010568	20030508
GB2395221 B2	20060104	GB20030010568	20030508
US2004093817 AA	20040520	US20030697203	20031030
US2006260238 AA	20061123	US20060495544	20060731

Probable Assignee: SIST S INDUSTRIALIZADOS BARCON

Assignee(s):(std): BARCONS SALVADOR P ; BARCONS SALVADOR PUJOL ; PUJOL BARCONS SALVADOR ; SIST S INDUSTRIALIZADOS BARCON

Assignee(s): SISTEMAS INDUSTRIALIZADOS BARCONS S L ; SISTEMAS INDUSTRIALIZADOS BARCONS S L PUERTO DESANTA MARIA ; SISTEMAS INDUSTRIALIZADOS BARCONS S L POLIGONOINDUSTRIAL LAS SALINAS DE LEVANTE ; SALVADOR PUJOL BARCONS ; SISTEMAS INDUSTRIALIZADOS BARCONS SL ; SISTEMAS INDUSTRIALIZADOS BARCONS S L POLIGONOINDU

Inventor(s):(std): PUJOL BARCONS SALVADOR ; BARCONS SALVADOR PUJOL ; BARCONS SALVADOR P

Inventor(s): SALVADOR PUJOL BARCONS

Agent(s): CABINET NETTER; CROWELL AND MORING LLP, INTELLECTUAL PROPERTY GROUP

International class (IPC 8–9): E02D27/01 E04B1/16 E04B1/18 E04G1/36 E04G11/02 E04G11/06 E04G11/08 E04G11/10 E04G11/20 E04G11/28 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/00 E04G15/02 E04G15/06 E04G17/00 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00 E04G21/00 E04G21/02 E04G21/12 E04G25/00 E04G27/00 E04G9/02 E04G9/08 (Advanced/Invention); E02D27/01 E04B1/16 E04B1/18 E04G1/36 E04G11/00 E04G13/00 E04G15/00 E04G17/00 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00 E04G21/00 E04G21/02 E04G21/12 E04G25/00 E04G27/00 E04G9/02 E04G9/08 (Core/Invention)

International class (IPC 1–7): B28B7/22 E02D1/00 E04B1/00 E04F10/00 E04G1/00 E04G11/02 E04G21/00

CPC: E04G19/00 E02D27/01 E04B1/161 E04G1/36 E04G11/02 E04G11/087 E04G11/10 E04G11/20 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/02 E04G15/06 E04G17/001 E04G17/002 E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/003 E04G19/006 E04G21/025 E04G21/122 E04G27/00 E04G15/00 E04G17/00 E04G25/00 E02D27/013 E02D27/016 E04G13/062 E04G13/066

European class: E02D27/01 E04B1/16A E04G1/36 E04G11/02 E04G11/08D E04G11/10 E04G11/20 E04G11/38 E04G11/48 E04G13/00 E04G13/02 E04G13/04 E04G13/06 E04G15/00 E04G15/02 E04G15/06 E04G17/00 E04G17/00B E04G17/00D E04G17/04 E04G17/06 E04G17/14 E04G17/16 E04G19/00A E04G19/00B E04G21/02B E04G21/12C E04G25/00 E04G27/00

US class: 249/13 52/294 52/414

Classification Explorer

Cited documents: WO9841714 A1, WO9728939 A1, WO0248479 A2, US6158710 A, US3357673 A, US2846749 A, US2526529 A, US2004079859 AA, US2003209648 AA, US1747036 A, FR622331 A, FR2384919 A1, FR1352779 A, ES2142222 AA, ES2120298 AA, EP0436392 A1, EP0123264 A2, DE3536523 C2, DE3536523 A1, DE3129838 A1,

Forward Citations: WO13023330, WO10112633, WO08145790, US9453345, US9441365, US9359780, US9315987, US9273479, US9273477, US9206614, US9080337, US8943774, US8844241, US8793953, US8763328, US8555590, US8458985, US8458969, US8326664, US7698866, US7658051, US7191528, US7055251, US2015191924, US2011301995, US2011131914, US2010223867, US2010119336, US2006207113, US2006107543, US2006042183, ES2308934, EP2461118, EP2461118, CN105019651, CN105019651, CN103470031, CN103276895, CN103276895, CN103195079, CN103104094, CN103104094, CN102720361, CN102425303, CN101942841,

Abstract:
Source: US2004093817A A foundation framework for structures in a reinforced setting material includes a foundation raft with a form having a plurality of modular panels and angular reinforcements for joining at least two faces of at least one right−angle dihedral formed by faces of the modular panels. A layout and positioning template is disposed on top of the form of the foundation raft for correctly dimensioning, positioning, and fitting walls, installations and reinforcements in the foundation raft. Adjustment legs for centering the layout and positioning template are provided, as well as self−centering clamps and a stabilizer having security pins and an anchorage mechanism for securing the form to a support surface.

0) US2010024332A – STRUCTURAL ELEMENT AND METHODS OF USE THEREOF

24) Family number: 40838886 (US2010024332A) © PatBase

Title: STRUCTURAL ELEMENT AND METHODS OF USE THEREOF

Priority: AU20060902631 20060517 AU20060902631P 20060517 WO2007AU00651 20070516 AU20070250534 20070516 AU20120247042 20121108

Family:

Publication number	Publication date	Application number	Application date
AU2007250534 AA	20071122	AU20070250534	20070516
AU2012247042 AA	20121129	AU20120247042	20121108
AU2012247042 BB	20150514	AU20120247042	20121108
AU2012247042 CA	20150917	AU20120247042	20121108
CA2652410 AA	20081117	CA20072652410	20070516
EP2021555 A1	20090211	EP20070718897	20070516
EP2021555 A4	20120118	EP20070718897	20070516
IN05153KN2008 A	20090327	IN2008KN05153	20081217
KR20090013830 A	20090205	KR20087030773	20081217
RU2008149771 A	20100627	RU20080149771	20070516
RU2418917 C2	20110520	RU20080149771	20070516
US2010024332 AA	20100204	US20070301002	20070516
WO07131284 A1	20071122	WO2007AU00651	20070516

Probable Assignee: ASSOCIATED VALAIRE PTY LTD

Assignee(s):(std)**:** ASSOCIATED VALAIRE PTY LTD ; ASSOSHIAJTET VALAJRE PTI LTD ; VALAIRE TREVOR

Inventor(s):(std)**:** VALAIRE TREVOR ; VALAJRE TREVOR

Inventor(s): TREVOR VALAIRE

Agent(s): WALSH AND ASSOCIATES; CASSAN MACLEAN; JEHAN ROBERT; SALTAMAR INNOVATIONS

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B5/04 E04B5/16 E04B5/17 E04C3/20 (Advanced/Invention); E04B5/16 E04B5/17 E04C3/20 (Advanced/Non–invention); E04B1/16 E04B5/04 E04B5/16 E04B5/17 E04C3/20 (Core/Invention)

International class (IPC 1–7): E04B5/17 E04C3/20

CPC: E04B5/38 E04B5/43

European class: E04B5/38 E04B5/43

US class: 52/250 52/250S 52/251 52/251S 52/252 52/252P 52/263 52/263S 52/602 52/602S

Classification Explorer

Cited documents: WO9606994 A1, WO0188297 A1, WO0007016 A1, US867251 A, US7810293 BB, US754783 A, US6817150 BA, US6631599 BA, US6578343 BA, US6272749 BA, US6094878 A, US505659 A, US4630414 A, US4120131 A, US3967426 A, US3956864 A, US3496691 A, US2579050 A, US2270114 A, US2017832 A, US2009049778 AA, US2008313990 AA, US2001045071 AA, US1792491 A, US1768181 A, US1508050 A, US1345156 A, US1093653 A, JP6322923 A2, DE538424 A, DE2403364 A1, DE2225344 A1,

Forward Citations: USD622867, USD622866, US8549805, US2011192108, RU2495204, KR101370930, KR101285487, KR101012321, FR2973407, CN103572874, CN103541478,

CN103541478, CN102312506, CN102312498,

Abstract:
Source: US2010024332A A pre−formed structural concrete element for use in the formation of a composite concrete floor of a building or the like, the element comprising: a generally planar base portion having opposing faces; a series of generally parallel spaced apart formations extending from one said faces of the base portion each defining along with an adjacent formation a void space therebetween and wherein the formations terminate in a plateau and have at least a narrow portion and a wide portion between the plateau and the one said faces of the base portion.

0) US2016376762A – CONSTRUCTION METHOD FOR PLANTING HOLLOW COLUMNS...

25) Family number: 60354859 (US2016376762A) © PatBase

Title: CONSTRUCTION METHOD FOR PLANTING HOLLOW COLUMNS IN A SEABED OF A MARINE ENVIRONMENT FOR SUPPORTING WATERBORNE STRUCTURES THEREON

Priority: CN201410095652 20140314 WO2015CN073980 20150311 WO2015CN73980 20150311

Family:

Publication number	Publication date	Application number	Application date
AU2015230478 AA	20150917	AU20150230478	20150311
CN104912045 A	20150916	CN201410095652	20140314
EP3118374 A1	20170118	EP20150762413	20150311
HK1213304 A1	20160630	HK20160101137	20160201
JP2017508087 T2	20170323	JP20160557075T	20150311
US2016376762 AA	20161229	US20160264049	20160913
WO15135471 A1	20150917	WO2015CN073980	20150311

Probable Assignee: CBJ HONG KONG OCEAN ENGINEERING LTD

Assignee(s):(std)**:** CBJ HONG KONG OCEAN ENG LTD ; CBJ HONG KONG OCEAN ENGINEERING LTD ; GUANGDONG CBJ OCEAN ENG CORP ; WONG CARLOS ; GUANGDONG QIANGGUANG OCEAN ENGINEERING CO LTD

Assignee(s): GUANGDONG QIANGGUANG OCEAN ENGINEERING CO ; GUANGDONG CBJ OCEAN ENGINEERING CORP

Inventor(s):(std)**:** HUANG CANGUANG ; WONG CARLOS

Agent(s): WRAYS PTY LTD; BOULT WADE TENNANT; NTD UNIVATION INTELLECTUAL PROPERTY AGENCY LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02B17/00 E02B17/02 E02D27/52 E02D7/00 (Advanced/Invention); E02B (Subclass/Invention)

CPC: E02B2017/0039 E02D7/00 E02D27/525 E02B17/0008 E02B17/027 E02B2017/0043

US class: 405/210

Classification Explorer

Cited documents: KR101134780 B1, JP2013224529 A2, CN1472400 A, CN103255752 A, CN102251530 A,

Abstract:
Source: US2016376762A In a construction method for planting a hollow column (21) in a seabed (2) for supporting a waterborne structure (11) thereon, a steel tube (101) is driven into the bed (2) to the founding stratum (5), with materials of the bed (2) within tube (101) excavated and any surplus steel tube (101) cut off. A first segment (1A) is inserted into tube (101), then second/subsequent segments (2A–8A) are joined tightly to its previous segment (1A–7A) to form column (21). Pressure grouting fills gaps between the tube (101) and column (21). Upon hardening, the tube (101) and column (21) form an integral unit adapted to take loads due to a surface friction resistance present between the steel tube (101) outer surface and soil materials (4) of the seabed (2), and due to an end bearing resistance present between the base of column (21) and the founding stratum (5).

0) US4715503A – INTERLOCKING JOINT WINE RACK

26) Family number: 29473000 (US4715503A) © PatBase

Title: INTERLOCKING JOINT WINE RACK

Priority:

US19860848573	19860407	US19870137100	19871223	US19910541547	19910621
US19900541547	19900621	US19870137101	19871223	US19880231379	19880812
US19910715910	19910614	US19910715908	19910614	US19910696922	19910508
US19930128800	19930928	US19930007079	19930121	US19920828499	19920131
US19910715912	19910614	US19940196650	19940214	WO1991US02434	19910411
WO1993US00888	19930201	US19990311338	19990513	US19970881974	19970625
US19970806031	19970126	US19950325981	19950126	US19940259431	19940614

Family:

Publication number	Publication date	Application number	Application date
AU199177976 A1	19920107	AU19910077976	19910411
AU199336039 A1	19930901	AU19930036039	19930201
CA2154341 AA	19950720	CA19932154341	19930201
CA2154341 C	20001226	CA19932154341	19930201
EP0742862 A1	19961120	EP19930904804	19930201
EP0742862 A4	19970226	EP19930904804	19930201
JP8509275 T2	19961001	JP19930513480T	19930201
US4715503 A	19871229	US19860848573	19860407
US4809146 A	19890228	US19870137101	19871223
US4825620 A	19890502	US19870137100	19871223
US4991726 A	19910212	US19880231379	19880812
US5024036 A	19910618	US19900541547	19900621
US5197818 A	19930330	US19910715910	19910614
US5222344 A	19930629	US19910715908	19910614
US5247774 A	19930928	US19910715912	19910614
US5285612 A	19940215	US19910696922	19910508
US5285613 A	19940215	US19920828499	19920131
US5319901 A	19940614	US19930007079	19930121
US5597629 A	19970128	US19950325981	19950126
US5617692 A	19970408	US19940196650	19940214
US5644888 A	19970708	US19940259431	19940614
US5749198 A	19980512	US19930128800	19930928
US5795424 A	19980818	US19970806031	19970126
US6286281 BA	20010911	US19990311338	19990513
WO9119871 A1	19911226	WO1991US02434	19910411
WO9315292 A1	19930805	WO1993US00888	19930201

Probable Assignee: EBERT COMPOSITES CORP

Assignee(s):(std)**:** EBERT COMPOSITES CORP ; GOLDSWORTHY W BRANDT ; KORZENIOWSKY GEORGE ; JOHNSON DAVID W ; KORZENIOWSKI GEORGE ; GEORGE KORZENIOWSKI ; BRANDT GOLDSWORTHY W

Assignee(s): DAVID W JOHNSON ; EBERT COMPOSITES A CORP OF CA CORP ; GOLDSWORTHY W

Inventor(s):(std)**:** GOLDSWORTHY W BRANDT ; JOHNSON DAVID W ; KORZENIOWSKI GEORGE ; KORZENIOWSKY GEORGE

Inventor(s): W BRANDT GOLDSWORTHY ; GEORGE KORZENIOWSKI ; DAVID W JOHNSON ; GOLDSWORTHY W

Agent(s): PATENT ATTORNEY SERVICES; BULL HOUSSER AND TUPPER LLP

Designated states:

AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR LK LU MC MG ML MN MR MW NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US

International class (IPC 8–9): A47B47/04 A47B73/00 B29C70/52 B65D6/08 E01D1/00 E04B1/19 E04B1/24 E04B1/58 E04C3/12 E04C3/28 E04C3/42 E04C3/46 E04G1/04 E04H12/02 E04H12/10 E04H12/24 E04H17/14 E06C7/08 F16B12/12 F16B7/04 (Advanced/Invention); E04B1/19 E04B1/24 E04B1/58 E04H12/24 (Advanced/Non–invention); A47B47/00 A47B73/00 B29C70/04 B65D6/00 E01D1/00 E04B1/19 E04B1/24 E04B1/58 E04C3/02 E04C3/12 E04C3/38 E04G1/00 E04H12/00 E04H17/14 E06C7/00 F16B7/04 (Core/Invention); E04B1/19 E04B1/58 (Core/Non–invention)

International class (IPC 1–7): A47B47/00 A47B73/00 B29D22/00 B31F1/00 E04B1/24 E04B1/58 E04C3/02 E04C3/30 E04H12/02 E04H12/04 E04H12/10 E04H12/18 F16D1/00 F21L7/00

CPC: Y10S52/10 Y10T403/34 Y10T403/342 Y10T403/347 Y10T403/44 Y10T403/46 Y10T403/4694 Y10T403/4602 Y10T403/4671 Y10T403/7001 Y10T403/7096 Y10T156/1008 Y10T156/101 Y10T156/1051 Y10T428/1362 Y10T428/24033 Y10T428/24446 Y10T428/24645 Y10T428/24686 Y10T428/24785 A47B73/00 F16B12/125 A47B73/006 A47B47/04 Y10T403/447 E01D1/00 E01D2101/10 E01D2101/26 E01D2101/30 E01D2101/40 E04B1/19 E04B2001/1927 E04B2001/1945 E04B2001/1948 E04B2001/1963 E04B2001/1975 E04B2001/5893 E04C3/12 E04C3/42 E04G1/04 E04H17/1439 Y10T403/343 B29C70/525 E04B2001/1924 E04B2001/1933 E04B2001/1984 E04B2001/199 E04B2001/1993 E04C3/28 E04H12/02 E04H12/24 E04B2001/1957 E04C3/46 E06C7/08 F16B7/0446

European class: A47B47/04 A47B73/00 A47B73/00E B29C70/52C E01D1/00 E04B1/19 E04C3/12 E04C3/28 E04C3/42 E04C3/46 E04G1/04 E04H12/02 E04H17/14E2 E06C7/08 F16B12/12M F16B7/04D2 P01D101/10 P01D101/26 P01D101/30 P01D101/40 P04B1/19C P04B1/19C1 P04B1/19C2 P04B1/19C6 P04B1/19C7 P04B1/19D P04B1/19D2 P04B1/19E P04B1/19G2 P04B1/19H P04B1/19K P04B1/58P P04H12/24

US class: 156/166 156/200 156/201 156/227 156/242 156/245 174/45R 211/189 211/205 211/74 256/22 256/65 256/65.04 264/137 273/160 312/263 362/367 403/169 403/171 403/172 403/176 403/217 403/219 403/230 403/231 403/255 403/263 403/346 403/382 405/262 405/272 428/102 428/152 428/176 428/181 428/193 428/36.1 428/361 446/106 52/282.1 52/309.14 52/309.9 52/592.1 52/600 52/646 52/648 52/648.1 52/650.1 52/651.01 52/651.02 52/651.03 52/651.04 52/651.09 52/655.1 52/697 52/720 52/724 52/728 52/731.3 52/736.2 52/736.3 52/736.4 52/835 52/844 52/849 52/DIG.1 52/DIG.10 526/970 527/280

Classification Explorer

Cited documents: US999267 A, US965185 A, US5864998 A, US5749198 A, US5644888 A, US5617692 A, US5319901 A, US5303916 A, US5285613 A, US5247774 A, US5096645 A, US5055242 A, US5028357 A, US4974987 A, US4934114 A, US4910932 A, US4828122 A, US4825620 A, US4809146 A, US4803819 A, US4788088 A, US4769967 A, US4715503 A, US470514 A, US4680224 A, US466012 A, US4619089 A, US4615154 A, US4569165 A, US4566818 A, US4564540 A, US4556337 A, US4534672 A, US4485597 A, US4477201 A, US4448832 A, US4369953 A, US4332501 A, US4312162 A, US4282619 A, US4254987 A, US4250679 A, US4246732 A, US4148489 A, US4073477 A, US4068346 A, US4065890 A, US4060950 A, US4055318 A, US4036371 A, US4027855 A, US3989397 A, US3984962 A, US3974611 A, US3973756 A, US3968602 A, US3959946 A, US3927950 A, US3868796 A, US3829999 A, US3776650 A, US3712005 A, US3606023 A, US3574104 A, US3571991 A, US3557422 A, US3509678 A, US3486287 A, US3342925 A, US3291899 A, US3291437 A, US3282006 A, US3276182 A, US3231054 A, US3228155 A, US3218446 A, US3196990 A, US3149704 A, US3100555 A, US3013584 A, US2990203 A, US2868602 A, US2712199 A, US2198964 A, US2186190 A, US2130231 A, US2110787 A, US2031324 A, US2005921 A, US2001215 A, US1917594 A, US1719440 A, US1636607 A, US1564568 A, US1542148 A, US1493811 A, US1388710 A, US1350039 A, US12842 A, US1057216 A, SU1146070 T, NO38867 A, IT427214 A, GB647330 A, GB452434 A, GB2117477 A1, FR673128 A, FR478968 A, FR2651523 A1, EP0519680 A1, EP0373021 A1, EP0053534 A1, DK19103 A, DE2415743 A1, DE2018648 A1, CH286156 A, CH286156, CA918882 A1, BR647330, BE836444 A2,

Forward Citations: WO9914451, WO9855771, WO9832591, WO9734053, WO9516838, WO9119871, WO15169414, WO14019959, WO11057377, WO10116012, WO10071466, WO10028376, WO10028376, WO10012120, WO07018962, WO06061617, WO06019478, WO05118985, WO05067544, WO05067544, WO04057120, WO04057120, WO04009912, USD760560, USD721189, USD720866, USD720865, USD625844, USD625843, USD624210, USD624209, USD624208, USD624206, USD623768, USD623767, USD588440, USD581253, USD574697, USD569993, USD564262, USD544784, USD540479, USD537537, USD523565, USD486146, USD446052, US9668573, US9611666,

US9593506, US9499983, US9453345, US9441365, US9416555, US9362021, US9340373, US9340171, US9328474, US9315987, US9290926, US9290901, US9273479, US9273477, US9249532, US9150072, US9149023, US9121194, US9062662, US9038834, US9038347, US9032694, US9022831, US9010069, US8974150, US8966856, US8959871, US8959867, US8927086, US8910447, US8905670, US8893662, US8782898, US8771538, US8756953, US8756895, US8742665, US8734705, US8671850, US8662326, US8646220, US8635830, US8631618, US8627966, US8607533, US8602123, US8597016, US8555603, US8550012, US8519050, US8516774, US8474221, US8458970, US8453386, US8429860, US8424269, US8376157, US8376156, US8371028, US8359814, US8353131, US8322268, US8322105, US8322093, US8307769, US8302363, US8293353, US8257119, US8245452, US8201698, US8186524, US8182643, US8161712, US8156712, US8105127, US8101107, US8065841, US8025754, US8024908, US7966786, US7901762, US7900411, US7875675, US7866249, US7856772, US7836661, US7827763, US7781039, US7752754, US7735290, US7707794, US7690167, US7665270, US7644896, US7608313, US7604438, US7461482, US7311470, US7276132, US7226245, US7216463, US7159370, US7140158, US7128094, US7116282, US7116282, US7114300, US7063219, US6999042, US6901715, US6893191, US6881288, US6872273, US6845871, US6834469, US6786233, US6779287, US6755212, US6722510, US6719009, US6698451, US6655102, US6615999, US6544624, US6520462, US6455131, US6453635, US6412250, US6412207, US6397545, US6361244, US6341922, US6309732, US6295783, US6286281, US6237299, US6226950, US6209276, US6205736, US6192651, US6182841, US6167673, US6155017, US6132129, US6059630, US6035597, US6032432, US6023902, US5964072, US5956920, US5950374, US5880404, US5873193, US5871307, US5870877, US5865007, US5832689, US5749198, US5743413, US5706597, US5704185, US5702090, US5661946, US5644888, US5605017, US5593047, US5560730, US5553433, US5529423, US5528870, US5513477, US5323583, US5285612, US5215490, US5207038, US5197253, US5185982, US5169009, US5058357, US5035098, US5024036, US4991726, US4903453, US4825620, US4809146, US2016144558, US2015225956, US2015157125, US2015096954, US2015089901, US2015021941, US2014360121, US2014174017, US2014161539, US2014130440, US2014113522, US2013341295, US2013312360, US2013295404, US2013288068, US2013263542, US2012324827, US2012233954, US2012199541, US2012187813, US2012180427, US2012102847, US2012048819, US2011293959, US2011239550, US2011220599, US2011152225, US2011135423, US2011134653, US2011126488, US2011115378, US2011114601, US2011081824, US2011044768, US2011044766, US2010319983, US2010319838, US2010307183, US2010293783, US2010242377, US2010236182, US2010223882, US2010157562, US2010064630, US2009308019, US2009308006, US2009307999, US2009307998, US2009223164, US2009188437, US2009084796, US2009019816, US2008302037, US2008274319, US2008223986, US2008202063, US2008199261, US2008172873, US2008053596, US2007213960, US2007193943, US2007193143, US2007175390, US2007151193, US2007144109, US2007125032, US2007117921, US2007116941, US2007095008, US2007094992, US2007044424, US2007000184, US2006257604, US2006254182, US2006254167, US2006239782, US2006185270, US2006150572, US2006113517, US2006005508, US2005271852, US2005170120, US2005167030, US2005160697, US2005078049, US2005011560, US2004211151, US2004182299, US2004174317, US2004149668, US2004134161, US2004134138, US2004060257, US2004013476, US2004013474, US2004000110, US2003159396, US2003127637, US2003074928, US2003067160, US2002123288, US2002121722, NL1017953, KR101206058, KR100913253, JP5146733, JP2013510965, JP2008522896, ITBZ20120033, ITBO20090051, GB2477735, GB2382021, GB2382021, FR2857385, ES2335559, EP2594121, EP1607541, EP1573141, EP1253252, EP1249551, EP0907807, EP0743999, EP0742862, DE19735496, DE19642242, DE19642242, DE102012223075, DE102012223075, DE102005010192, DE102005010192, CN105386631, CN105133908, CN104532961, CN104532961, CN104379854, CN104314352, CN103921457, CN102777068, CN102747856, CN101798882, BE1012983,

Abstract:
Source: US4715503A A wine rack has no fasteners or adhesives at the three−dimensional joints, but rather the joints are all formed so that the three intersecting cross pieces interlock in such a way that a tight joint construction occurs strictly by virtue of the way the members are cut in the joint region, and the way in which the members are interlocked. The interlocking and connecting of cubic cells provides a rigid structure capable of accepting loads in any direction and allowing the rack to be mounted in any orientation, with single point wall mounting possible wherein the rack can withstand full loading with no distortion. The modular cell configuration is adapted to the construction of lattice beams and other arrangements besides wine racks.

27) Family number: 64741691 (US4588443A) © PatBase

Title: SHAPED ARTICLE AND COMPOSITE MATERIAL AND METHOD FOR PRODUCING SAME

Priority: CA19810377702 19810515 DK19800001945 19800501 DK19810000538 19810206 DK19810000907 19810227 EP19810103363 19810504 DK19810001957 19810501 WO1981DK00048 19810501 FI19810004231 19811231

Family:

Publication number	Publication date	Application number	Application date
AT38218 E	19881115	AT19810103363T	19810504
AU198170787 A1	19811126	AU19810070787	19810501
BR8108596 A	19820406	BR19810008596	19810501
CA1197269 A1	19851126	CA19810377702	19810515
DE3176917 D1	19881201	DE19813176917	19810504
DK163298 B	19920217	DK19810001957	19810501
DK163298 C	19920706	DK19810001957	19810501
DK195781 A	19811102	DK19810001957	19810501
EP0042935 A1	19820106	EP19810103363	19810504
EP0042935 B1	19881026	EP19810103363	19810504
EP0042935 B2	19970910	EP19810103363	19810504
ES501814 A1	19830901	ES19810501814	19810430
ES8308523 A1	19831201	ES19810501814	19810430
FI72307 B	19870130	FI19810004231	19811231
FI814231 A	19811231	FI19810004231	19811231
FI814231 L	19811231	FI19810004231	19811231
FI88499 B	19930215	FI19900004527	19900913
FI88499 C	19930525	FI19900004527	19900913
FI904527 A0	19900913	FI19900004527	19900913
JP4048743 B4	19920807	JP19810501447T	19810501
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MX159969 A	19891017	MX19810188252	19810710
NO166634 B	19910513	NO19810004495	19811230
NO166634 C	19930929	NO19810004495	19811230
NO814495 A	19811230	NO19810004495	19811230
US4588443 A	19860513	US19810336380	19811230
WO8103170 A1	19811112	WO1981DK00048	19810501
ZA8102919 A	19820526	ZA19810002919	19810501

Probable Assignee: DENSIT A S

Assignee(s):(std)**:** AALBORG PORTLAND CEMENT ; DENSIT AS ; BACHE H

Assignee(s): BACHE HANS H ; AKTIESELSKABET AALBORG PORTLAND CEMENT FABRIK ; AALBORG AS ; AALBORG FORTLAND CEMENT FAB AB ; DENSIT A S ; AALBORG PORTLAND CEMENT FABRIK AKTIESELSKABET ; DENSHITO AS ; AALBORG PORTLAND CEMENT FABRIK ; AALBORG PORTLAND CEMENT FABRIK A CORP AS ; AALBORG PORTLAND CEMENT FABRIK A CORP OF DENMARK AS ; AALBORG PORTLAND CEMENT FABRIK AS

Inventor(s):(std)**:** BACHE H ; BACHE H H ; BACHE HANS H ; BACHE HANS HENRIK

Inventor(s): BACHE HH ; BATSUHIE HANSU HENRIKU ; HANS HENRIK BACHE

Agent(s): PHILLIPS ORMONDE FITZPATRICK; STEWART AND KOLASH LTD

Designated states: AT AU BE BR CH DE FI FR GB IT JP LI LU NL NO SE SU US

International class (IPC 8–9):	B28B23/00 B32B13/00 C04B14/00 C04B14/02 C04B14/30 C04B14/32 C04B18/04 C04B18/10 C04B18/14 C04B20/00 C04B22/06 C04B24/22 C04B28/00 C04B28/02 C04B28/04 C04B30/00 C04B40/00 C04B41/45 C04B41/68 C04B7/13 E06B1/00 (Advanced/Invention); B28B23/00 B32B13/00 C04B14/00 C04B14/02 C04B18/04 C04B20/00 C04B22/00 C04B24/00 C04B28/00 C04B30/00 C04B40/00 C04B41/45 C04B41/60 C04B7/00 E06B1/00 (Core/Invention); B32B C04B (Subclass/Invention)
International class (IPC 1–7):	B32B13/00 C04B13/02 C04B13/04 C04B14/00 C04B14/02 C04B14/04 C04B15/00 C04B18/04 C04B20/00 C04B28/00 C04B28/02 C04B28/04 C04B31/00 C04B31/02 C04B7/13 E01D7/00 E06B1/00
CPC:	C04B40/00 B28B23/0081 C04B18/146 C04B28/04 C04B30/00 Y02W30/94 Y02W30/91
European class:	B28B23/00Z C04B18/14F C04B28/04 C04B30/00 C04B40/00
US class:	106/644 106/672 106/676 106/681 106/703 106/711 106/717 106/726 106/737 106/816 106/89 106/90 106/97 106/98 428/2 428/542.2
Classification Explorer	
Cited documents:	WO8100252 A1, WO8000959 A1, US4255195 A, US4118242 A, US4111711 A, US4098755 A, US4061501 A, US4046583 A, US4040847 A, US3957520 A, US3883359 A, US3880664 A, US3754954 A, US3489582 A, US3467535 A, US3231401 A, US3131075 A, US3055831 A, US2410954 A, US2141569 A, JP53140324 A2, JP53123426 A2, JP53101023 A2, JP53054220 A2, JP48028527 A2, JP46001785 A2, GB2023566 A1, GB2003461 A1, GB1495811 A, EP0021936 A1, EP0010777 A1, EP0007269 A1, EP0006775 A1, EP0004509 A2, DE2806367 A1, DE2801932 A1, DE2756797 A1, DE2731612 A1, DE2708004 A1, CH300853 A,
Forward Citations:	WO9610477, WO9420274, WO9419172, WO9412693, WO9318190, WO9310972, WO9013524, WO8905712, WO8301592, WO8201674, WO14079920, WO12127064, WO10118744, WO09127198, WO09127198, WO09081277, WO07057510, WO05077857, WO05077857, WO04011219, WO03101727, WO0181687, WO0067973, USRE39339, USD781464, USD761447, USD583569, US9500112, US9423158, US9404480, US9302448, US9267211, US9260314, US9144630, US9133581, US9067383, US8993462, US8992679, US8936081, US8894830, US8883104, US8869477, US8857118, US8855982, US8834688, US8821633, US8745942, US8618445, US8603424, US8603238, US8597554, US8557102, US8555698, US8501320, US8491858, US8470275, US8470088, US8431100, US8409380, US8357270, US8333944, US8308470, US8297018, US8283026, US8281535, US8278372, US8192542, US8163081, US8137444, US8119707, US8083923, US8043025, US8039774, US8028438, US8006446, US7998571, US7993570, US7993511, US7993500, US7966250, US7939336, US7931809, US7923111, US7914685, US7906028, US7875163, US7815880, US7771684, US7754169, US7753618, US7744761, US7735274, US7713615, US7641731, US7603793, US7597952, US7524555, US7468154, US7452418, US7389569, US7347895, US7048795, US6857322, US6723162, US6679626, US6510743, US6467118, US6415824, US6358603, US6309570, US6200404, US6180037, US6168857, US6167912, US6108998, US6092350, US6090195, US6083586, US6081955, US6070378, US6044607, US6030673, US6023806, US5976235, US5928741, US5879722, US5851634, US5849155, US5843544, US5830548, US5830545, US5830305, US5810961, US5800756, US5800647, US5798151, US5794402, US5783126, US5778463, US5776388, US5769939, US5766525, US5753308, US5738921, US5736209, US5720913, US5716675, US5714217, US5709913, US5709827, US5707474, US5705242, US5705239, US5705238, US5705237, US5705203, US5695811, US5691014, US5683772, US5679381, US5679145, US5676905, US5674802, US5665442, US5665439, US5662731, US5660904, US5660903, US5660900, US5658603, US5654048, US5649568, US5641584, US5631097, US5631053, US5631052, US5626954, US5618341, US5614307, US5582670, US5580624, US5580409, US5571951, US5551976, US5549859, US5545450, US5545297, US5543186, US5527387, US5525155, US5508072, US5489333, US5482550, US5453310, US5433777, US5385764, US5338573, US5167710, US5135576, US5116420, US5050507, US4915741, US4881329, US4871395, US2014215930, US2014033638, US2014010721, US2013204589, US2012324813, US2012089237, US2011159182, US2011132234, US2011076350, US2010304095, US2010273902, US2010270001, US2010258310, US2010247410, US2010239487, US2010236242, US2010222201, US2010136340, US2010136269, US2010132591, US2010116683, US2010084280, US2010077922, US2010077691, US2010065542, US2010063902, US2010051859, US2010024686, US2010000444, US2009294092, US2009090278, US2009081112, US2009049779, US2009020044, US2009001020, US2008275149, US2008206518, US2008187742, US2008171811, US2008138622, US2008099122, US2008066650, US2008060299, US2007298172, US2007269605, US2007253773, US2007199205, US2007163470, US2006225376, US2006222836,

US2006196393, US2006188674, US2006180960, US2006147694, US2006108714, US2006105156, US2006090673, US2006054060, US2006054059, US2006012086, US2005166540, US2005077655, US2005011417, US2005005823, US2005001100, US2004234794, US2004177936, US2004144181, US2004094863, US2003188667, US2003154683, US2003046779, RU2484038, JP59227762, GB2250703, GB2250703, GB2241698, GB2241698, FR2900922, FR2866330, FR2858614, FR2774683, FR2722813, FR2621036, ES2318956, EP2072205, EP1511622, EP1269147, EP0934915, EP0714383, EP0714383, EP0713481, EP0713481, EP0686082, EP0686082, EP0678068, EP0678068, EP0678068, EP0662029, EP0662029, EP0426465, EP0269715, EP0165388, EP0067456, EP0052380,

Abstract:
Source: US4588443A PCT No. PCT/DK81/00048 Sec. 371 Date Dec. 30, 1981 Sec. 102(e) Date Dec. 30, 1981 PCT Filed May 1, 1981 PCT Pub. No. WO81/03170 PCT Pub. Date Nov. 12, 1981.Densified systems and articles made therefrom which contain a composite material comprising a coherent matrix of homogeneously arranged inorganic particles (A) of a size of from about 50 ANGSTROM to about 0.5 3/4, such as silica dust, and densely packed particles (B) having a size of from 0.5–100 mu such as Portland Cement and which are at least one order of magnitude larger than the particles A, and embedded in the matrix, solid particles C made from material having a strength exceeding that of ordinary sand and stone used for ordinary concrete, such as refractory grade bauxite and a surface active dispersing agent. Particles A are homogeneously distributed and especially densely packed, in the void volume between the particles B and are made from an easily flowable composite material containing a very low amount of liquid such as water and an extremely high amount of a dispersing agent such as a concrete superplastisizer. High quality concrete made from a Portland Cement/silica dust matrix with refractory grade bauxite embedded therein exhibits high compressive strength and may be used as a replacement for plastic, glass and steel. High performance fiber/metal matrix composites with substantially improved compressive strength and abrasion resistance are produced.

28) Family number: 60995939 (WO17045223A1) © PatBase

Title: PREFABRICATED PIER COLUMN MEMBER WITH STEEL–CONCRETE COMPOSITE STRUCTURE

Priority: CN201510601078 20150918 CN201516010783 20150918 WO2015CN090689 20150925

Family:

Publication number	Publication date	Application number	Application date
AU2015409344 AA	20170323	AU20150409344	20150925
CN105113389 A	20151202	CN201510601078	20150918
CN105113389 B	20170125	CN201510601078	20150918
EP3181755 A1	20170621	EP20150903296	20150925
WO17045223 A1	20170323	WO2015CN090689	20150925

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** FU ZHONGQIU ; JI BOHAI ; YU ZHENPENG

Agent(s): SHELSTON IP PTY LTD; WALSH MARIE GORETTI; NANJING SUGAO PATENT AND TRADEMARK FIRM ORDINARY PARTNERSHIP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E01D19/02 E01D21/00 (Advanced/Invention)

CPC: E01D19/02

Classification Explorer

Cited documents: WO14193022 A1, KR20140027701 A, KR101406035 B1, KR101263557 B1, JP2009161905 A2, CN204435210 U, CN204282199 U, CN202989763 U, CN202672025 U, CN202131563 U, CN202047358 U, CN104746422 A, CN104404869 A, CN104294753 A, CN104278621 A, CN103015309 A, CN101831875 A, CN101074554 A,

Forward Citations: CN105386405,

Abstract:
Disclosed is a prefabricated pier column member with a steel–concrete composite structure, comprising a reinforcing tube (2) buried in a pile foundation platform (1). The reinforcing tube is connected to the bottom of a lower section (3) of a hollow steel tube pier and is filled with concrete, and the upper and lower sections of the pier column are connected with each other via sections and are reinforced by a pre–buried local steel mesh. A steel beam (12) is connected to an upper section (8) of the hollow steel tube pier column in an assembly way. A pre–stressed tension duct is reserved on the steel beam and the upper section of the pier column. Disclosed is also a construction method for the prefabricated pier column member with a steel–concrete composite structure. The method can shorten the construction period, reduce the construction difficulties, and speed up the construction schedule. The connection mode used is safe, reliable and easy to control; and the advantages of compressive property of concrete and tensile property of steel are fully taken. The whole member has a good application prospect because it is cost–effective and convenient and the construction of which is simple and fast.

0) US4622788A – BUILDING STRUCTURE, ESPECIALLY AIR RAID SHELTER...

29) Family number: 2421806 (US4622788A) © PatBase

Title: Building structure, especially air raid shelter

Priority: CA19820408855 19820806 EP19820902385 19820805 SE19810004738 19810807 WO1982SE00254 19820805

Family:

Publication number	Publication date	Application number	Application date
AT13453 E	19850615	AT19820902385T	19820805
CA1195524 A1	19851022	CA19820408855	19820806
DE3263752 D1	19850627	DE19823263752	19820805
DK154483 A	19830407	DK19830001544	19830407
DK154483 A0	19830407	DK19830001544	19830407
EP0085081 A1	19830810	EP19820902385	19820805
EP0085081 B1	19850522	EP19820902385	19820805
FI831098 A	19830330	FI19830001098	19830330
FI831098 A0	19830330	FI19830001098	19830330
FI831098 L	19830330	FI19830001098	19830330
JP58501239 T2	19830728	JP19820502384T	19820805
NO155301 B	19861201	NO19830001222	19830406
NO155301 C	19870311	NO19830001222	19830406
NO831222 A	19830406	NO19830001222	19830406
SE427569 B	19830418	SE19810004738	19810807
SE8104738 A	19830208	SE19810004738D	19810807
SE8104738 L	19830208	SE19810004738	19810807
SE8204540 A	19820802	SE19820004540D	19820802
SE8204540 A0	19820802	SE19820004540	19820802
SE8204540 L	19820802	SE19820004540	19820802
US4622788 A	19861118	US19830486293	19830404
WO8300522 A1	19830217	WO1982SE00254	19820805

Probable Assignee: SKANSKA AKTIEBOLAG

Assignee(s):(std)**:** BLITZ LASS GOERAN F ; BLIXT LARS ; BLIXT LARS GOERAN FRANKLIN ; SKANSKA AKTIEBOLAG ; BLIXT LARS GORAN FRANKLIN ; SKANSKA CEMENTGJUTERIET AB

Assignee(s): SKANSKA CEMENTGJUTERIET NORDENSKIOLDSGATAN AB ; AB SKANSKA CEMENTGJUTERIET ; AB SKAONSKA CEMENTGJUTERIET ; LARS BLIXT ; SKAANSKA CEMENTGJUTERIET AB ; BLIXT LARS GORAN ; PAULSSON JAN ERIK H ; BLITZ LASS GORAN F ; BLIXT LARS GORAN F

Inventor(s):(std)**:** BLIXT LARS GORAN FRANKLIN ; BLIXT L G F ; BLIXT L G P ; BLIXT LARS ; BLIXT LARS GOERAN F ; BLIXT LARS GOERAN FRANKLIN ; PAULSSON J E H ; PAULSSON JAN ERIK H ; PAULSSON JAN ERIK HARALD

Inventor(s): BLIXT LARS GORAN F ; J E H PAULSSON ; JAN ERIK HARALD PAULSSON ; L G F BLIXT ; L G P BLIXT ; LARS BLIXT ; LARS GOERAN FRANKLIN BLIXT

Agent(s): BERESKIN AND PARR

Designated states: AT BE CH DE DK FI FR GB JP LI LU NL NO SE US

International class (IPC 8–9): E04B1/06 E04B1/92 E04B1/94 E04B1/98 E04H9/04 E04H9/10 (Advanced/Invention); E04B1/02 E04H9/04 (Core/Invention); E04H (Subclass/Invention)

International class (IPC 1–7): E04B1/06 E04B1/343 E04B1/92 E04B1/94 E04B1/98 E04H9/04 E04H9/10 E21D10/00

CPC: E04H9/10

European class: E04H9/10

US class: 52/169.6 52/223.6 52/227 52/438 52/79.11 D25/1 D25/33

Classification Explorer

Cited documents: US4228623 A, US4159602 A, US4129969 A, US4107886 A, US4073100 A, US3514910 A, US3468081 A, GB488013 A, DE1137545 B, AU72261 A1, AU491054 B1, AU491054,

Forward Citations: US8640409, US8407964, US6412231, US5956907, US4835936, US2014208672, US2011072734,

Abstract:
Source: US4622788A PCT No. PCT/SE82/00254 Sec. 371 Date Apr. 4, 1983 Sec. 102(e) Date Apr. 4, 1983 PCT Filed Aug. 5, 1982 PCT Pub. No. WO83/00522 PCT Pub. Date Feb. 17, 1983.A building structure, especially an air raid shelter is formed from prefabricated tubular concrete elements (10) and end wall elements (11), the tubular concrete elements (10) being clamped between the end wall elements (11) with the aid of prestressed prestressing means or ties (12). The tubular concrete elements (10) have at least one stiffening beam (17, 18) extending all around them and at least the interstices between successive stiffening beams are filled with in situ cast concrete (13) reinforced by means of a crossbar (24), which in situ cast concrete encloses the prestressed prestressing means or ties (12). Two or more rows of tubular concrete elements (10) with end wall elements (11) can be placed beside each other to form a large building structure, especially an air raid shelter in which the stiffening beams (17) on the adjoining tubular concrete elements (10) engage each other in a comb−like manner and constitute columns.

0) US2015071711A – PARTIALLY FLOATING MARINE PLATFORM FOR OFFSHORE...

30) Family number: 53328362 (US2015071711A) © PatBase

Title: PARTIALLY FLOATING MARINE PLATFORM FOR OFFSHORE WIND–POWER, BRIDGES AND MARINE BUILDINGS, AND CONSTRUCTION METHOD

Priority: CN201110284931 20110922 CN201210030258 20120210 WO2012CN073829 20120411

Family:

Publication number	Publication date	Application number	Application date
AU2012313196 AA	20130328	AU20120313196	20120411
CN103010415 A	20130403	CN201210030258	20120210
CN103010415 B	20150819	CN201210030258	20120210
EP2837554 A1	20150218	EP20120834043	20120411
EP2837554 A4	20160817	EP20120834043	20120411
IN08215CN2014 A	20160701	IN2014CN08215	20141111
JP2015519489 T2	20150709	JP20150504834T	20120411
JP6105044 B2	20170329	JP20150504834T	20120411
PH2014502301 A	20141222	PH20140502301	20141013
US2015071711 AA	20150312	US20120394400	20120411
US9567720 BB	20170214	US20120394400	20120411
WO13040871 A1	20130328	WO2012CN071136	20120214
WO13040890 A1	20130328	WO2012CN073829	20120411

Probable Assignee: CBJ CONCRETE OCEAN PLATFORM ENGINEERING SHANGHAI CORP

Assignee(s):(std)**:** CBJ CONCRETE OCEAN PLATFORM ENGINEERING SHANGHAI CORP ; CHEN LIQIANG ; HUANG CANGUANG ; WONG CARLOS

Inventor(s):(std)**:** CARLOS WONG ; CHEN LIQIANG ; HUANG CANGUANG ; LIQIANG CHEN ; WONG CARLOS

Agent(s): WRAYS; HELLMICH WOLFGANG; CHARTER IP LLC; MATTHEW J; SHENZHEN STANDARD PATENT AND TRADEMARK AGENT LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B63B21/50 B63B35/44 E02B17/00 E02D23/00 E02D25/00 E02D27/20 E02D27/32 E02D27/42 E02D27/52 E02D5/22 F03D11/00 F03D13/20 F03D9/00 (Advanced/Invention)

CPC: B63B5/14 B63B21/50 E02B17/00 E02B17/0008 E02B2017/0043 E02B2017/0073 E02B2017/0091 B63B21/502 B63B35/44 B63B2021/505 B63B2035/446 E02D27/20 E02D27/425 E02D27/525 F03D13/22 F03D13/25 F05B2240/93 F05B2240/95 Y02B10/30 Y02E10/727 B63B1/107 B63B2001/128

US class: 405/203 405/225 405/226

Classification Explorer

Cited documents: WO10094776 A1, WO09067023 A1, WO0103999 A1, US4895481 A, US4810135 A, US4645379 A, US4227831 A, US4118942 A, US3986367 A, US3916633 A, US3823563 A, US2001002757 AA, NL250154 A, NL246073 A, NL1008318 C2, JP58210208 A2, JP58210208, JP56090788 A2, JP56090788, JP48024501 A2, JP2011521820 T2, JP2011521820, JP2010280301 A2, JP2007160965 A2, JP2002285951 A2, JP2001063684 A2, GB1354549 A, GB1354549, EP2163691 A2, DE3224976 A1, DE20103421 U1, CN86108094 A, CN201210034805, CN1175232 A, CN102015435 A, CN101649813 A, CN101415939 A, CN101408027 A, CN101408027, CN101148890 B, CN101148890 B, CN100999247 A, BE459606 A,

Forward Citations: WO16109962, WO16004739, WO15047148, US9518564, US9394035, US9168984, US2015361685, US2014014020, US2013233231, KR101433749, GB2503104, GB2503104, EP2931597, EP2931597, DE102013222081, DE102013222081,

CN104260831, CN104229086, CN103863529, CN103863529,

Abstract:
Source: US2015071711A A partially floating supported marine platform for offshore wind turbines, bridges and offshore buildings includes horizontal beams and hollow, cylindrically−shaped and vertically disposed buoyancy tubes interconnected to form the marine platform. A cone matching technique may be employed to fast fix the buoyancy tubes onto concrete beds in the seabed that are prepared in advance. Piling support to enhance the foundation of the platform may be used, to be installed within the buoyancy tube interior using small diameter piles that are driven down into the concrete beds and socketed into bedrock. The buoyancy tubes are capped at top and bottom ends, providing buoyancy to the platform at temporary and/or at permanent states. All manual operations for installing piling support are performed in dry conditions, thus expensive piling vessels are not required, thereby providing an economical and safe technology for the development of the ocean.

0) US2016258160A – COMPOSITE STRUCTURAL MEMBER, METHOD FOR MANUFAC...

31) Family number: 59140951 (US2016258160A) © PatBase

Title: COMPOSITE STRUCTURAL MEMBER, METHOD FOR MANUFACTURING SAME, AND CONNECTING ASSEMBLIES FOR COMPOSITE STRUCTURAL MEMBERS

Priority: US20130897429P 20131030 US20140031300 20141030 WO2014CA51045 20141030

Family:

Publication number	Publication date	Application number	Application date
CA2928252 AA	20160421	CA20142928252	20141030
US2016258160 AA	20160908	US20140031300	20141030
US9637923 BB	20170502	US20140031300	20141030
WO15061906 A1	20150507	WO2014CA51045	20141030

Probable Assignee: SOCPRA SCIENCES ET GENIE SEC

Assignee(s):(std)**:** SOCPRA SCIENCES ET GENIE S E C ; SOCPRA SCIENCES ET GENIE SEC

Assignee(s): ABOUZIED AHMED ; DE SHERBROOKE UNIV ; MASMOUDI RADHOUANE

Inventor(s):(std)**:** ABOUZIED AHMED ; AHMED ABOUZIED ; MASMOUDI RADHOUANE ; RADHOUANE MASMOUDI

Agent(s): ROBIC; ROBIC LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/30 E04C3/29 E04C3/293 E04C3/34 E04C3/36 E04C5/06 E04C5/07 E04C5/16 E04H12/22 (Advanced/Invention); E04B1/21 (Advanced/Non–invention)

CPC: E04C5/168 E04C5/0613 E04C3/36 E04H12/2292 E04C3/34 E04B1/215 E04B1/30 E04C3/29 E04C3/293 E04C5/07

US class: 52/649.3

Classification Explorer

Cited documents: US6123485 A, US4166347 A, US2012124937 AA, US2009000214 AA, US2002159843 AA, US2001023568 AA, TNSN03010 A1, JP4330133 A2, CN101177966 A,

Abstract:
Source: US2016258160A A structural member having a longitudinal axis comprises: an exterior shell member defining an elongated channel with an inner surface; an interior shell member having an outer surface and defining an inner channel, inserted in the elongated channel of the exterior shell member and extending longitudinally therein and defining an inter–shell spacing therebetween; and concrete filling the inter–shell spacing and including at least one reinforcement bar having a longitudinally extending section extending in the inter–shell spacing and being disconnected from the inner surface of the exterior shell member and from the outer surface of the interior shell member.

0) US5678373A – MODULAR PRECAST WALL SYSTEM WITH MORTAR JOINTS ...

32) Family number: 29381658 (US5678373A) © PatBase

Title: Modular precast wall system with mortar joints

Priority: US19940335059 19941107 US19950490466 19950614 US19960758973 19961202 US19970872444 19970610 WO1995US14607 19951106

Family:

Publication number	Publication date	Application number	Application date
AU199641527 A1	19960617	AU19960041527	19951106
AU713710 B2	19991209	AU19960041527	19951106
CA2199842 AA	19970312	CA19952199842	19951106
EP0791113 A1	19970827	EP19950939867	19951106
EP0791113 A4	19980204	EP19950939867	19951106
MX9702902 A1	19980531	MX19970002902	19951106
NZ296818 A	19990429	NZ19950296818	19951106
US5678373 A	19971021	US19950490466	19950614
US5924254 A	19990720	US19970872444	19970610
US6098357 A	20000808	US19960758973	19961202
WO9616238 A1	19960530	WO1995US14607	19951106

Probable Assignee: MEGAWALL CORP

Assignee(s):(std)**:** MEGAWALL CORP

Assignee(s): FRANKLIN HOWARD M ; GARFINKEL ERIK

Inventor(s):(std)**:** ERIK GARFINKEL ; FRANKLIN HOWARD M ; GARFINKEL ERIK ; HOWARD M FRANKLIN ; FRANKLIN HOWARS M

Inventor(s): HOWARS M FRANKLIN

Agent(s): PHILLIPS ORMONDE FITZPATRICK; GOWLING LAFLEUR HENDERSON LLP

Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TT UA UG UZ VN

International class (IPC 8–9): E04B2/02 E04B2/14 E04B2/52 E04B2/86 E04C1/00 (Advanced/Invention); E04B2/02 (Advanced/Non–invention)

International class (IPC 1–7): E04B1/06 E04B2/00 E04B2/18 E04B2/26 E04B2/52 E04B2/86 E04C1/00 E04G21/14

CPC: E04B2/14 E04B2/52 E04B2002/0208 E04B2002/0254

European class: E04B2/14 E04B2/52 P04B2/02M1B P04B2/02M3E

US class: 52/223.7 52/293.2 52/295 52/439 52/442 52/592.6 52/600 52/606 52/745.1 524/390

Classification Explorer

Cited documents: US5337530 A, US5138808 A, US5103613 A, US5081805 A, US4787189 A, US4726567 A, US4583336 A, US4565043 A, US4475626 A, US4367615 A, US4328651 A, US4244155 A, US4124963 A, US3950902 A, US3435567 A, US3416272 A, US3378969 A, US3286418 A, US3255562 A, US3106751 A, US2776559 A, US2684589 A, US2627176 A, US2590685 A, US2315634 A, US2241169 A, US2008775 A, US1783383 A, US1704255 A, US1412113 A, US1377149 A, US1186592 A, GB822386 A, FR530705 A,

Forward Citations: WO13023190, WO12158031, WO12074829, WO12034570, WO12034570, WO08141038, WO07094809, WO07061443, WO04001151, WO0248475, WO0163056, WO0163056, US9677267, US9474390, US9453348, US9428901, US9328501, US9297176, US9206597, US9186813, US9163393, US9133619, US9086268, US9074362, US9021762, US8931223, US8898990, US8893447, US8850763, US8745930, US8667750, US8601759, US8596014, US8534022, US8522506, US8499511, US8464491, US8464482, US8453406, US8393123, US8381485, US8341907,

US8341788, US8297017, US8297012, US8225578, US8201379, US8181418, US8161691, US8122668, US8099918, US8061095, US7946090, US7934345, US7784231, US7568321, US7555872, US7549263, US7454871, US7444789, US7412805, US7237366, US7237362, US7185467, US7162844, US7124550, US7086811, US7024941, US6758020, US6735913, US6702522, US6402435, US6301851, US6244009, US6195946, US6178714, US6079175, US5992102, US2016319540, US2016208508, US2016160491, US2015300006, US2014202111, US2014197573, US2013036700, US2012180426, US2012090260, US2011278752, US2011167749, US2011167739, US2011162318, US2011030299, US2010132283, US2010064620, US2009313923, US2009301003, US2009288355, US2009217610, US2009094916, US2009074515, US2008276550, US2008256894, US2008193227, US2007186502, US2007137138, US2007107333, US2007074485, US2007056235, US2007022708, US2006254165, US2006248825, US2006156646, US2005252104, US2005229516, US2005072061, US2005058515, US2004255530, US2004226259, US2004168521, US2004134144, US2003208984, US2003182886, US2003009963, JP2009526928, ES2372039, EP2743422, CN104196148, CN102409796,

Abstract:
Source: US5678373A A modular construction system (10) which is directed toward the construction of structural walls (26). The construction system (10) employs precast wall units (12) and a variety of spacer/tensioning, spacer, tensioning, and extension assemblies (14, 16, 18, and 20). The wall units (12) contain a plurality of cavities (44) and are made of concrete with side walls (36) reinforced with prestressed tension wires (48). In the process of constructing a wall (26), the wall units (12) are stacked one upon the other onto threaded wall bars (24) that extend upwardly from a foundation (22). The spacer/tensioning assembly (14) and the spacer assembly (16) provide alignment during the stacking process and also create mortar joints (52). The spacer/tensioning assembly (14) and the tensioning assembly (18) are utilized in conjunction with the wall bars (24) to tension the wall units (12) onto lower wall units (12) and the foundation (22). When stacked, the internal structure of the wall units (12) creates vertically and horizontally extending passages (85 and 86) into which grout (84) is poured to create a monolithic wall (26).

33) Family number: 28247308 (US2002104469A) © PatBase

Title: PRECAST MODULAR CONCRETE SHAPES AND METHODS OF INSTALLATION TO FORM SHORELINE STABILIZATION, MARINE AND TERRESTRIAL STRUCTURES

Priority: US20010776971 20010205 US20020314099 20021207 US20030731263 20031208 US20060370074 20060306 US20070906057 20070928 US20070906058 20070928 US20100804632 20100726

Family:

Publication number	Publication date	Application number	Application date
US2002104469 AA	20020808	US20010776971	20010205
US2003091391 AA	20030515	US20020314099	20021207
US2004244667 AA	20041209	US20030731263	20031208
US2007283866 AA	20071213	US20060370074	20060306
US6491473 BB	20021210	US20010776971	20010205
US6659686 BB	20031209	US20020314099	20021207
US7007620 BB	20060307	US20030731263	20031208
US7373892 BB	20080520	US20060370074	20060306
US7603959 BA	20091020	US20070906057	20070928
US7762205 BA	20100727	US20070906058	20070928
US7992509 BA	20110809	US20100804632	20100726

Probable Assignee: SE VENTURES INC

Assignee(s):(std)**:** SE VENTURES INC ; VEAZEY SIDNEY E ; VEAZEY SIDNEY EDWIN

Assignee(s): RESOLVE MARINE GROUP INC

Inventor(s):(std)**:** VEAZEY SIDNEY E ; VEAZEY SIDNEY EDWIN

Inventor(s): VEAZEY SIDNEY

Agent(s): JAMES K POOLE ESQ; JAMES K; POOLE ESQ JAMES K

International class (IPC 8–9)**:** A01K61/00 B63B3/04 B63B3/08 B63B35/26 B63B35/44 B63B5/18 E02B3/06 E02D27/06 (Advanced/Invention); A01K61/00 B63B3/00 B63B35/14 B63B35/44 B63B5/00 E02B3/06 E02D27/04 (Core/Invention)

International class (IPC 1–7)**:** B63B3/02 B63B35/44 E01D19/12 E01D21/00 E02B3/00 E02B3/04 E02B3/12 G02B3/14

CPC: E02B3/102 E02B3/108 B63B3/08 B63B2035/4466 B63C1/04 E02B3/062 A01K61/59 A01K61/54 A01K61/70 B63B35/44 B63B3/04 B63B5/18 B63B35/26 E02B3/06 E02D27/06

European class: A01K61/00B A01K61/00D A01K61/00E B63B3/04 B63B3/08 B63B35/26 B63B35/44 B63B5/18 B63C1/04 E02B3/06 E02B3/06B E02B3/10 E02D27/06 L63B35/44E9

US class: 114/258 114/263 114/264 114/267 114/65 114/65.00A 114/65A 114/77 114/77.00R 114/77.00RP 114/77R 119/238 14/23 14/28 14/73 405/15 405/16 405/17 405/23 405/284

Classification Explorer

Cited documents: WO9008059 A1, US984285 A, US6739797 BA, US6491473 BB, US6491473 BA, US6491473 B1, US6167827 BA, US6167827 B1, US5908265 A, US5697736 A, US5628280 A, US5524549 A, US5507988 A, US5429452 A, US5178493 A, US517652 A, US5158395 A, US5087150 A, US4964750 A, US4953280 A, US4940364 A, US4914876 A, US4911585 A, US4820079 A, US4801220 A, US4784520 A, US4712944 A, US4643618 A, US4607985 A, US4587684 A, US4440527 A, US4375928 A, US4266509 A, US4172680 A, US4165197 A, US4157695 A, US4152875 A, US4067285 A, US3974789 A, US3969900 A, US3957098 A, US3951085 A, US3906687 A, US3878806 A, US3832748 A, US3802205 A, US3722222 A, US3665882 A, US3640075 A, US3557742 A, US3516255 A, US3490407 A, US3344609 A, US2981219 A, US2390940 A, US2370940 A, US2369615 A, US2348508 A, US2159685 A, US2003035690 AA, US1885889 A, US1847043 A, US1778574 A, US1489428 A, US1247750 A, US1229152 A, US1177381 A, US1173879 A, JP9028232 A2, JP6287970 A2,

Forward Citations:

WO16183184, WO13029007, WO08094772, WO08094772, WO07053377, US9624899, US9617970, US9556574, US9546044, US9517820, US9469963, US9464413, US9387913, US9382681, US9334616, US9267283, US9266590, US9260343, US9181668, US9157211, US9157203, US9057188, US9051168, US8985897, US8979427, US8869746, US8867691, US8807869, US8790109, US8740500, US8621740, US8590564, US8544227, US8540459, US8496406, US8360100, US8231445, US8177457, US8113740, US8052348, US7992509, US7762205, US7632437, US7603959, US7588390, US7422392, US7401999, US7373892, US7090440, US7052205, US7021229, US7007620, US6880474, US6659686, US2016153160, US2016083052, US2016023718, US2015353172, US2014193199, US2014060028, US2013319533, US2013160444, US2013149036, US2013061796, US2013055946, US2012315090, US2012138700, US2012051845, US2011305511, US2011283929, US2011132250, US2011123275, US2011094623, US2011017144, US2010310318, US2010186216, US2010158617, US2010132292, US2010074687, US2010051714, US2009304448, US2009226260, US2009023375, US2008202442, US2008138155, US2008086066, US2008056823, US2007283866, US2007101673, US2007095266, US2007017427, US2006127181, US2006078388, US2005100408, US2005000398, US2004244667, US2004099192, US2003091391, KR100921188, ITMC20090145, CN105421290, AU2002226206, AT13164,

Abstract:
Source: US2002104469A Novel precast concrete boxes which can be assembled together and/or with structural shapes disclosed in U.S. Pat. No. 5,697,736 to form waterfront structures such as seawalls, boathouses and the like. The boxes can be sized and proportioned so as to be conveniently assembled in such structures and to be easily transported via intermodal transportation media. Novel methods of waterborne transport and installation of the boxes are disclosed. Shellfish habitats based upon the boxes are also disclosed.

0) US5466086A – CONNECTOR, METHOD FOR CONNECTING STRUCTURAL MEM...

34) Family number: 14983632 (US5466086A) © PatBase

Title: CONNECTOR, METHOD FOR CONNECTING STRUCTURAL MEMBERS WITH CONNECTOR AND CONNECTION STRUCTURE BETWEEN STRUCTURAL MEMBERS

Priority:

AU19930039852 19930527
CA19932097119 19930527
JP19930112261 19930414
JP19930117907 19930420
JP19930117908 19930420
JP19920164402 19920530
US19950542548 19951013
US19950542551 19951013
US19950542549 19951013
US19950542550 19951013
US19950542552 19951013
JP19930139937 19930518
US19930067576 19930526
US19950542547 19951013
US19950542554 19951013
US19950542553 19951013
US19980093726 19980609

Family:

Publication number	Publication date	Application number	Application date
AU199339852 A1	19931202	AU19930039852	19930527
AU199659495 A1	19960905	AU19960059495	19960712
AU199660612 A1	19960919	AU19960060612	19960719
AU199660613 A1	19960919	AU19960060613	19960719
AU199660689 A1	19961010	AU19960060689	19960719
AU671633 B2	19960905	AU19930039852	19930527
AU679411 B2	19970626	AU19960060612	19960719
AU679412 B2	19970626	AU19960060613	19960719
AU684424 B2	19971211	AU19960059495	19960712
AU684427 B2	19971211	AU19960060689	19960719
CA2097119 AA	19931201	CA19932097119	19930527
CA2097119 C	19980714	CA19932097119	19930527
EP0572955 A1	19931208	EP19930108707	19930528
JP3181375 B2	20010703	JP19920164402	19920530
JP3241163 B2	20011225	JP19930112261	19930414
JP3275236 B2	20020415	JP19930139937	19930518
JP5331919 A2	19931214	JP19920164402	19920530
JP6299612 A2	19941025	JP19930112261	19930414
JP6306959 A2	19941101	JP19930117907	19930420
JP6306960 A2	19941101	JP19930117908	19930420
JP6322839 A2	19941122	JP19930139937	19930518
US5466086 A	19951114	US19930067576	19930526
US5788396 A	19980804	US19950542548	19951013
US5788397 A	19980804	US19950542554	19951013
US5807014 A	19980915	US19950542547	19951013
US5807015 A	19980915	US19950542551	19951013
US5823701 A	19981020	US19950542553	19951013
US5873672 A	19990223	US19950542549	19951013
US5906451 A	19990525	US19950542552	19951013
US5924815 A	19990720	US19950542550	19951013
US6200061 BA	20010313	US19980093726	19980609

Probable Assignee: HOME CO LTD

Assignee(s):(std)**:** HOME CO LTD ; HOUMU KK

Assignee(s): GOTO YASUO ; HOME CO

Inventor(s):(std)**:** GOTO YASUO

Inventor(s): YASUO GOTO

Agent(s): FB RICE; SIM AND MCBURNEY

Designated states: DE FR GB NL SE

International class (IPC 8–9): E04B1/00 E04B1/26 E04B1/48 E04B1/58 F16B12/24 F16B12/46 F16B13/00 F16B13/14 F16B19/00 F16B47/00 F16B5/07 (Advanced/Invention);
E04B1/00 (Advanced/Non–invention);
E04B1/26 E04B1/48 E04B1/58 F16B12/00 F16B13/00 F16B19/00 F16B5/00 (Core/Invention);
E04B1/00 (Core/Non–invention)

International class (IPC 1–7): E04B1/26 E04B1/38 E04B1/48 E04B1/58 E04B1/61 F16B11/00 F16B12/02 F16B12/04 F16B12/24 F16B12/46 F16B13/00 F16B13/02 F16B13/14 F16B19/00 F16B47/00 F16B5/07 F16B7/18

CPC: E04B2001/264 Y10T403/14 Y10T403/472 Y10T403/473 Y10T403/55 E04B1/486 E04B1/2604 E04B2001/262 E04B2001/268 E04B2001/2684 E04B2001/2692 F16B13/141 Y10T403/15 Y10T403/4648 E04B1/483

European class: E04B1/26B E04B1/48 E04B1/48D F16B13/14C P04B1/26B10 P04B1/26B12 P04B1/26B40 P04B1/26B40A P04B1/26B41

US class: 403/10 403/247 403/267 403/268 403/292 403/405.1 403/6

Classification Explorer

Cited documents: US863650 A, US605468 A, US5807014 A, US5466086 A, US5169256 A, US5052848 A, US5033904 A, US4826373 A, US4776738 A, US4760889 A, US4752151 A, US4725161 A, US4712957 A, US4681477 A, US4630959 A, US4630955 A, US4627212 A, US4324423 A, US431816 A, US4280721 A, US4263832 A, US4247223 A, US4159721 A, US4137115 A, US4095389 A, US3771278 A, US3638978 A, US3638970 A, US3635978 A, US3502359 A, US3232638 A, US3048433 A, US2674786 A, US2674785 A, US2284350 A, US2257427 A, US2040126 A, US1868037 A, US1825034 A, US1803576 A, US1591264 A, US1579494 A, NL49600 C, NL49600 A, NL49600, JP63162008 A2, JP63014941 A2, JP63014940 A2, JP63014939 A2, JP59179927 A2, JP54052258 A2, JP3295946 A2, JP3005543 A2, JP2300442 A2, JP2093401 A2, GB401257 A, GB2218483 A1, GB2204905 A1, GB2101257 A1, GB2034857 A1, GB1454264 A, GB1330128 A, GB1194239 A, FR2472075 A1, FR2447430 A1, FR2066414 A5, EP0232911 A1, EP0211378 A2, EP0155520 A1, DE946687 A, DE3915669 A1, DE3413035 A1, DE2838466 A1, DE2836835 A1, DE2646351 A1, DE2515950 A1,

Forward Citations: WO15176125, WO12060849, WO0120175, WO0055442, US9670669, US9644367, US9605431, US9238909, US9085901, US8966858, US8910454, US8870488, US8695295, US8641315, US8479470, US8397454, US8186124, US8137023, US8112968, US7856933, US7669380, US7524130, US7517425, US7228787, US6913247, US6711803, US6592286, US6591572, US6254301, US6200061, US6176638, US6120207, US6099193, US6058669, US6036397, US5954447, US5761870, US5660492, US5575129, US5560174, US2016325796, US2015322671, US2015300008, US2015089900, US2015043966, US2012301217, US2012110939, US2012023862, US2011283639, US2011158741, US2011016824, US2010322703, US2010319280, US2010199891, US2010104354, US2009145076, US2009045369, US2008194346, US2008115699, US2007270029, US2007175158, US2007017173, US2006174570, US2006115324, US2005271481, US2004088833, US2002002806, JP8334019, JP5718650, JP3204039, JP2014227800, JP2013096073, JP2012140820, JP2007207768, JP2002088929, EP2840194, EP2068011, EP1367276, EP0687781, EP0685609, DE102010004898, DE102004060606, CN103541432, CN101922182, AU773026, AU678606, AU2001239811,

Abstract:
Source: US5466086A A connector is inserted into connecting holes arranged at abutment surfaces between structural members, adhesive agent is fed from one end of a hollow part of the connector or an opening part of a branch pipe of the connector and the clearances between the surface of the connector and circumferential walls of the connecting holes are filled with adhesive agent flowed out of the other end opening at the hollow part of the connector so as to connect both structural memers in rigid form.

0) WO06109901A1 – CONCRETE COMPOSITE COLUMN AND COMPOSITE PIER CO...

35) Family number: 33514935 (WO06109901A1) © PatBase

Title: CONCRETE COMPOSITE COLUMN AND COMPOSITE PIER

Priority: KR20050030070 20050411

Family:

Publication number	Publication date	Application number	Application date
KR100666703 B1	20070109	KR20050030070	20050411
KR20060107710 A	20061016	KR20050030070	20050411
WO06109901 A1	20061019	WO2005KR01219	20050427

Probable Assignee: B B M KOREA CO LTD

Assignee(s):(std)**:** B B M KOREA CO LTD ; LEE KI HONG

Assignee(s): B B M KOREA CO ; BBM KOREA CO ; BBM KOREA CO LTD

Inventor(s):(std)**:** LEE KI HONG

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Advanced/Non–invention); E01D19/02 (Core/Invention)

CPC: E01D19/02 E01D2101/268 E01D22/00

European class: E01D19/02 P01D101/26H

Classification Explorer

Cited documents: US5339594 A, KR200286012 Y1, JP9158116 A2,

Forward Citations: KR101177426, KR101007908, KR100933265, KR100864220, KR100864220, KR100786900, CN102493601,

Abstract:
Provided are a concrete–filled steel tube (CFT) column and a concrete composite pier using the same, capable of eliminating a work required to arrange reinforcements as well as remarkably improving a adhesive strength between the concrete and the steel tube, thereby maximizing a combined action of the concrete and the steel tube and improving outer appearance. The CFT column includes a steel tube; at least one armature attached to an inner surface and in a lengthwise direction of the steel tube and having a coupling plate, a web and at least one concrete–gripping hole; and concrete poured into a space defined by the steel tube and the armature.

0) US5371990A – ELEMENT BASED FOAM AND CONCRETE MODULAR WALL CO...

36) Family number: 29432254 (US5371990A) © PatBase

Title: Element based foam and concrete modular wall construction and method and apparatus therefor

Priority: US19920928268 19920811 US19940275672 19940715 US19960654770 19960529 WO1993US07445 19930810

Family:

Publication number	Publication date	Application number	Application date
AU199350004 A1	19940315	AU19930050004	19930810
AU702326 B2	19990218	AU19930050004	19930810
BG61821 B1	19980630	BG19950099411	19950209
BG99411 A	19951130	BG19950099411	19950209
BRPI9306891 A	19981208	BR1993PI06891	19930810
CA2142102 AA	19950209	CA19932142102	19930810
CZ9500364 A3	19960117	CZ19950000364	19930810
EP0658233 A1	19950621	EP19930919934	19930810
FI950588 A	19950406	FI19950000588	19950210
FI950588 A0	19950210	FI19950000588	19950210
HU71182 A2	19951128	HU19950000414	19930810
HU9500414 A0	19950428	HU19950000414	19930810
JP8500161 T2	19960109	JP19940506336T	19930810
NO950502 A	19950411	NO19950000502	19950209
NO950502 A0	19950209	NO19950000502	19950209
OA10128 A	19961218	OA19950060611	19950213
PL307403 A1	19950515	PL19930307403	19930810
RO118462 B1	20030530	RO19950000236	19930810
RU2136821 C1	19990910	RU19950108519	19930810
RU95108519 A	19971220	RU19950108519	19950310
SK19395 A3	19950711	SK19950000193	19930810
US5371990 A	19941213	US19920928268	19920811
US5697196 A	19971216	US19960654770	19960529
VN791 A1	19990325	VN19950001030	19950211
WO9404768 A1	19940303	WO1993US07445	19930810

Probable Assignee: SALAHUDDIN

Assignee(s):(std)**:** SALAHUDDIN ; SALAHUDDIN FAREED M ; SALAHUDDIN FAREED M MARLBORO ; SALAHUDDIN FAREED M MARLBORO NEW JERSEY ; FARID M SALAKHJUDDIN ; UNIQUE DEV CORP ; UNIQUE DEVELOPMENT CORP

Assignee(s): FARID MSALAKHJUDDIN ; SALAHUDDIN FAREED M ONE EATON COURT MARLBORO NJ ; FAREED M SALAHUDDIN

Inventor(s):(std)**:** FAREED M SALAHUDDIN ; FARID MSALAKHJUDDIN ; SALAHUDDIN FAREED M ; FARID M SALAKHJUDDIN

Agent(s): GRIFFITH HACK; KIRBY EADES GALE BAKER

Designated states: AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

International class (IPC 8–9)**:** E04B1/16 E04B1/18 E04B1/35 E04B2/68 E04B2/84 E04B2/86 (Advanced/Invention); E04B1/18 E04B1/35 E04B2/84 E04B2/86 (Advanced/Non–invention); E04B1/18 E04B1/35 E04B2/64 E04B2/84 (Core/Invention); E04B (Subclass/Invention)

International class (IPC 1–7):	E04B1/16 E04B1/18 E04B1/35 E04B2/58 E04B2/66 E04B2/68 E04B2/70 E04B2/84 E04B2/86 E04B5/00
CPC:	E04B1/163 E04B2/8652
European class:	E04B1/16B P04B2/86J
US class:	52/251 52/252 52/379 52/745.09

Classification Explorer

Cited documents: US5381635 A, US5371990 A, US5189860 A, US5086600 A, US5060446 A, US5050358 A, US5038541 A, US5024035 A, US5014480 A, US4987719 A, US4981003 A, US4967528 A, US4924641 A, US4909001 A, US4894969 A, US4889310 A, US4884382 A, US4862660 A, US4860515 A, US4854097 A, US4832308 A, US4823534 A, US4802318 A, US4774794 A, US4759160 A, US4742659 A, US4742655 A, US4731971 A, US4731968 A, US4730422 A, US4706429 A, US4698947 A, US4630419 A, US4628650 A, US4625484 A, US4616459 A, US4614071 A, US4587782 A, US4541211 A, US4532745 A, US4486993 A, US4461130 A, US4398378 A, US4357783 A, US4314431 A, US4295415 A, US4249354 A, US4223501 A, US4211385 A, US4211045 A, US4163349 A, US4112648 A, US4112646 A, US4091587 A, US4070845 A, US4050213 A, US4038798 A, US3979867 A, US3950902 A, US3922413 A, US3874134 A, US3800015 A, US3788020 A, US3783569 A, US3782049 A, US3762115 A, US3755982 A, US3717967 A, US3654742 A, US3613325 A, US3552076 A, US3511000 A, US3483665 A, US3420023 A, US3410044 A, US3389521 A, US3383817 A, US3315424 A, US3292331 A, US3285444 A, US3255562 A, US3127702 A, US2856766 A, US2841975 A, US2776559 A, US2363164 A, US2326708 A, US2233089 A, US1930951 A, US1900541 A, US1757077 A, US1583077 A, US1537278 A, US1501288 A, US1499171 A, US1307779 A, SU1006666 T, IT613853 A, DE2436575 A1, BE828299 A2,

Forward Citations: WO9535421, WO08057664, WO08033654, USD469750, USD469416, USD469415, USD429708, US9068341, US8079189, US7765759, US7762033, US7553554, US7347029, US7254925, US7032357, US6701684, US6622452, US6609340, US6526713, US6481178, US6438918, US6363683, US6336301, US6318040, US6314697, US6295778, US6170220, US6164035, US6085476, US5921046, US5867964, US5839249, US5737895, US5697196, US5649401, US2014360114, US2012167504, US2012058299, US2010319295, US2010218446, US2009229214, US2009133343, US2008163564, US2008104912, US2008096012, US2008066408, US2007245660, US2007210237, US2006257231, US2005265802, US2005252125, US2005246969, US2005210824, US2005153122, US2005108963, US2004000111, EP1972720, EP1970491, EP0995854, EP0766767, CN103669655, CN103669655, CN102477779, CN102477779,

Abstract:
Source: US5371990A A bond beam Channel structure and Pilaster Channel structure for use in forming wall structures of blocks are provided. Each Channel structure comprises a pair of Channel members. A plurality of elongated ties connect the two Channel members together, defining a space therebetween. The space allows concrete to be poured between the Channel members, providing structural integrity to the wall structure. Each tie includes a slot configured to receive at least one rebar in a position substantially transverse to the tie, for providing additional structural integrity to the wall structure.

0) US5028357A – LIGHTWEIGHT COOLING TOWER WITH CRUCIFORM COLUMN...

37) Family number: 2952856 (US5028357A) © PatBase

Title: LIGHTWEIGHT COOLING TOWER WITH CRUCIFORM COLUMNS

Priority: AU19900051480 19900319 CA19902011909 19900309 US19900581793 19900913 US19890392448 19890814

Family:

Publication number	Publication date	Application number	Application date
AT106539 E	19940615	AT19900303333T	19900329
AU199051480 A1	19910214	AU19900051480	19900319
AU199188133 A1	19920116	AU19910088133	19911126
AU620700 B2	19920220	AU19900051480	19900319
BRPI9001673 A	19910514	BR1990PI01673	19900409
CA2011909 AA	19910214	CA19902011909	19900309
CA2011909 C	19980616	CA19902011909	19900309
DE69009348 D1	19940707	DE19906009348	19900329
DE69009348 T2	19940915	DE19906009348T	19900329
DK0413409 T3	19940620	DK19900303333T	19900329
DK0413409 T4	19990809	DK19900303333T	19900329
EP0413409 A2	19910220	EP19900303333	19900329
EP0413409 A3	19911113	EP19900303333	19900329
EP0413409 B1	19940601	EP19900303333	19900329
EP0413409 B2	19981111	EP19900303333	19900329
ES2053104 T3	19940716	ES19900303333T	19900329
ES2053104 T5	19990216	ES19900303333T	19900329
IL93583 A0	19901129	IL19900093583	19900228
IL93583 A1	19930114	IL19900093583	19900228
JP2002758 C3	19951220	JP19900155600	19900615
JP3079995 A2	19910404	JP19900155600	19900615
JP7039910 B4	19950501	JP19900155600	19900615
NZ232932 A	19930826	NZ19900232932	19900315
PH27526 A	19930818	PH19900041008	19900810
US5028357 A	19910702	US19890392448	19890814
US5155961 A	19921020	US19900581793	19900913
ZA9001843 A	19901228	ZA19900001843	19900309

Probable Assignee: SPX DE CORP CORP

Assignee(s):(std)**:** AMSTED IND INC ; BAC PRITCHARD INC ; BALTIMORE AIRCOIL CO INC ; CERAMIC COOLING TOWER CO ; CERAMIC KUURING TAWAA CO

Assignee(s): BARDO CHARLES J ; CERAMIC COOLING TOWER CO FORT WORTH TX A CORP OF TX ; SPX DE CORP CORP ; UNITED DOMINION IND INC DE CORP ; SPX (DE CORP) CORP ; UNITED DOMINION IND INC (DE CORP) ; SPX CORP ; CERAMIC COOLING TOWER CORP ; CONGRESS FINANCIAL CORP ; UNITED DOMINION IND ; BALTIMORE AIRCOIL CO INC JESSUP MD ; BALTIMORE AIRCOIL CO INC JESSUP MD US

Inventor(s):(std)**:** BARDO CHARLES J ; CHARLES J BARDO ; CHIYAARUZU JIEI BARUDOO

Inventor(s): BARDO CHARLES J FORT WORTH TEXAS 76109 ; BARDO CHARLES J FORT WORTH TEXAS 76109 US

Agent(s): CALLINANS; SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; BORDEN LADNER GERVAIS LLP; REINHOLD COHN AND PARTNERS

Designated states: AT BE CH DE DK ES FR GB GR IT LI NL SE

International class (IPC 8–9):	B01D47/14 F28C1/00 F28C1/02 F28F25/00 F28F25/08 (Advanced/Invention); F28F25/00 (Advanced/Non–invention); F28C1/00 F28F25/00 (Core/Invention)
International class (IPC 1–7):	B01D47/14 B01F3/04 E04C3/04 E04C3/36 E04H5/12 F25D F28C1/00 F28C1/00 F28C1/02 F28F25/00
CPC:	Y10S261/11 F28F25/08 F28C1/00
European class:	F28C1/00 F28F25/08
US class:	261/111 261/DIG.11 52/239 52/282 52/282.2 52/646 52/648 52/651.01 52/737.2 52/737.6 52/738 52/845 526/460
Classification Explorer	
Cited documents:	WO8801324 A1, US5028357 A, US4803819 A, US4719731 A, US4637903 A, US4612744 A, US4602470 A, US4587787 A, US4543218 A, US4483118 A, US4429983 A, US4422983 A, US4382046 A, US4329824 A, US4125973 A, US4109429 A, US4069638 A, US3866373 A, US3638380 A, US3292323 A, US3078080 A, US2723107 A, US2529648 A, US2388297 A, US2232510 A, US2196399 A, US2049692 A, US1741219 A, JPS6127490, JP61027490 A2, DE3413069 A1, AU611383 B2, AU251850 B2, AU251850 A1,
Forward Citations:	WO9515211, WO06031489, USD465838, US9487227, US8376323, US8235363, US7997562, US7836653, US7607646, US7275734, US7003863, US6701678, US6668514, US6581337, US6532707, US6497401, US6446414, US6386641, US6250610, US6237900, US6189285, US6185878, US5958306, US5902522, US5851446, US5811035, US5545356, US5487849, US5487531, US5236625, US5222344, US5155961, US2017003088, US2017003087, US2015367876, US2010109171, US2010078147, US2008028714, US2006053727, US2004232686, JP6094391, EP3061674, EP3061673, EP2505742, EP2505742, EP1035395, EP1035395, EP0558300, AU756527, AU655389,

Abstract:
Source: US5028357A A structural column has a generally cruciform cross section. The column includes a generally rectangular core section formed by four orthogonally related walls and four flange portions. Each flange portion is provided by a pair of spaced–apart parallel flanges which are extensions of a pair of parallel walls. The column is particularly suited for a cooling tower which includes at least four vertically extending columns. A horizontal beam extends between each pair of adjacent columns, and the ends of each beam are inserted between the parallel flanges of the columns. A side panel is supported by each beam, and a cover is supported by the side panels and the columns.

0) US5344305A – APPARATUS FOR IN–MOLD LABELLING

38) Family number: 31449188 (US5344305A) © PatBase

Title: APPARATUS FOR IN–MOLD LABELLING

Priority:

AU19940065895	19940321	AU19940076755	19940826	EP19940913930	19940321
AU19980076177	19980716	AU19980095217	19981203	AU20010075592	20010921
US19930009442	19930604	US19930009214	19930607	US19930011818	19930201
US19930137585	19931015	JP19940522144T	19940321	US19930040904	19930331
US19930108933	19930818	US19930114098	19930830	US19950547646	19951024
US19980046862	19980324	US19960755712	19961125	US19980003251	19980106
WO1994US03048	19940321	US19990418063	19991014	US19980153271	19980914
US19950382985	19950203	US19950472885	19950607	US19950468633	19950606
US19950466806	19950606	US19970848049	19970421	US19950475045	19950607
US19950571244	19951212	US19940192801	19940214	US19930156053	19931122
WO1999IB00066	19990106	WO1994US03058	19940321	WO1994US09664	19940826

Family:

Publication number	Publication date	Application number	Application date
AT220436 E	20020715	AT19940117143T	19940321
AU199465224 A1	19950504	AU19940065224	19940321
AU199465895 A1	19941024	AU19940065895	19940321
AU199476755 A1	19950322	AU19940076755	19940826
AU199876177 A1	19980910	AU19980076177	19980716
AU199895217 A1	19990128	AU19980095217	19981203
AU199917788 A1	19990726	AU19990017788	19990106
AU200175592 A5	20011108	AU20010075592D	20010921
AU693803 B2	19980709	AU19940076755	19940826
AU701433 B2	19990128	AU19940065895	19940321
AU727300 B2	20001207	AU19980076177	19980716
AU734614 B2	20010621	AU19980095217	19981203
AU754194 B2	20021107	AU19990017788	19990106
AU777095 B2	20040930	AU20010075592	20010921
CA2159455 AA	19950928	CA19942159455	19940321
CA2170028 AA	19960221	CA19942170028	19940826
CA2174078 AA	19960412	CA19942174078	19940321
CA2317511 AA	20000706	CA19992317511	19990106
DE69430953 D1	20020814	DE19946030953	19940321
EP0692047 A1	19960117	EP19940913930	19940321
EP0707117 A1	19960417	EP19950117143	19940321
EP0707117 B1	20020710	EP19950117143	19940321
EP0722523 A1	19960724	EP19940912829	19940321
EP0733137 A1	19960925	EP19940927249	19940826
EP1045940 A1	20001025	EP19990900097	19990106
ES2091168 T1	19961101	ES19950117143T	19940321
ES2091168 T3	20021201	ES19950117143T	19940321
HK1013320 A1	20030509	HK19980114670	19981222
JP2002500300 T2	20020108	JP20000527715T	19990106
JP2004132174 A2	20040430	JP20030355116	20031015
JP3584036 B2	20041104	JP19940522144T	19940321
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JP3817676 B2	20060906	JP20030355116	20031015
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ZA9401994 A	19950922	ZA19940001994	19940322	
ZA9401995 A	19950922	ZA19940001995	19940322	
ZA9406559 A	19951002	ZA19940006559	19940829	

Probable Assignee: TERRE ARMEE INTERANTIONALE

Assignee(s):(std)**:** ANDERSON PETER L ; CCL LABEL INC ; COWEL MICHAEL J ; HOTEK DAN J ; DES BREVETS HENRI VIDAL SOC CIV ; CIVILE DES BREVETS HENRI VIDAL SOC ; VIDAL HENRI BREVETS ; ILE DES BREVETS HENRI VIDAL SO ; ILE DES BREVETS HENRI C VIDAL ; SOCIETE CIVILE DES BREVETS HENRI VIDAL ; REINFORCED EARTH CO ; ILE DES BREVETS HENRI VIDAL VE ; REINFORCED EARTH COMPANY THE ; THE REINFORCED EARTH COMPANY ; TERRE ARMEE INT

Assignee(s): REINFORCED EARTH CO A OF STATE OF VIRGINIA CORP ; TERRE ARMEE INTERNATIONALE ; SOCIETE CIVILE DES BREVETS HENRI VIDAL VELIZY VILLACOUBLAY ; SOC CIVILE DES BREVETS HENRI VIDAL ; SOCIETE CIVILE DES BREVETS HENRI VIDAL VELIZY VILL ; POE L RICHARD ; TERRE ARMEE INTERANTIONALE ; SOCIETE CIVILE DES BREVETS HENRI C VIDAL ; COWELL MICHAEL L ; COWELL MICHAEL J ; CIVILE DES BREVETS HENRI VIDAL PARC DES ERABLES IV ; CIVILE DES BREVETS HENRI C VIDAL SOC ; CIVILE DES BREVETS SOC ; CIVILE DES BREVETS HENRI C VIDAL PAR DES ERABLES I ; CIVILE DES BREVETS HENRI C VIDAL PARC DES ERABLES

Inventor(s):(std)**:** ANDERSON PETER L ; COWELL MICHAEL L ; HOTEK DAN J ; PETER L ANDERSON ; MICHAEL L COWELL ; MICHAEL J COWELL ; MICHAEL J COWEL ; DAN J HOTEK ; COWELL MICHAEL J ; COWEL MICHAEL J ; MCKILLIP BARRON G

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT

ATTORNEYS PTY LTD; KIRBY EADES GALE BAKER; OKADA NORIKO; YAMASAKI YUKUZO

Designated states: AT AU BE CA CH CY DE DK ES FI FR GB GR IE IT JP LI LU MC NL PT SE US

International class (IPC 8–9): B29C49/24 E02D17/18 E02D29/02 E04B2/02 E04B2/22 E04C1/39 (Advanced/Invention); E02D17/18 E04B2/02 (Advanced/Non–invention); B29C49/24 E02D17/18 E02D29/02 E04B2/14 E04C1/00 (Core/Invention); E04B2/02 (Core/Non–invention)

International class (IPC 1–7): B29C49/24 E02D17/18 E02D27/00 E02D29/00 E02D29/02 E02D3/02 E02D5/00 E04B2/22

CPC: E02D29/0225 E02D2200/13 E02D2300/0004 E02D2300/0032 E02D2300/0034 E02D2300/007 E02D2300/0085 E02D29/0241 E02D29/025 E04B2002/026 E04C1/395 E02D29/02 E04B2/22 B29C49/2408 B29C2049/2412 B29C2049/2437 B29C2793/0081 E02D29/0283 E02D29/0266 E02D2300/0006 E02D2300/0075

European class: B29C49/24B E02D29/02 E02D29/02D E02D29/02D2 E02D29/02E E02D29/02F3 E04B2/22 E04C1/39B L29C49/24C1 L29C49/24D12C L29C793/00I P02D200/13 P02D29/02D2 P02D29/02F1 P02D300/10B P02D300/10B10 P02D300/10C20B P02D300/10C20C P02D300/10H P02D300/10L P02D300/10T P02D600/10C P04B2/02N2

US class: 264/509 405/262 405/272 405/284 405/286 425/503 425/504 52/604 52/606

Classification Explorer

Cited documents: WO9114833 A1, WO8802050 A1, USRE34314 E, USD95788 S1, USD317048 S1, USD311444 S1, USD301064 S1, USD300254 S1, USD300253 S1, USD299067 S1, USD298463 S1, USD297767 S1, USD297574 S1, USD297464 S1, USD296365 S1, USD296007 S1, USD295790 S1, USD295788 S1, USD237704 S1, US810748 A, US734022 A, US654733 A, US5807030 A, US5800095 A, US566924 A, US5624211 A, US5622455 A, US5586841 A, US5577866 A, US5540525 A, US5531547 A, US5525014 A, US5522682 A, US5507599 A, US5494379 A, US5487623 A, US5484235 A, US5474405 A, US5456554 A, US5451120 A, US5350256 A, US5259704 A, US5257880 A, US5252017 A, US5207038 A, US5190413 A, US5178492 A, US5169266 A, US5163261 A, US5161918 A, US5156496 A, US5156495 A, US5108231 A, US5091247 A, US5082439 A, US5076735 A, US5066169 A, US5064313 A, US5044833 A, US5004376 A, US4998397 A, US4968186 A, US4961673 A, US4960349 A, US4952098 A, US4952097 A, US4929125 A, US4917543 A, US4914876 A, US4909010 A, US4904124 A, US4896999 A, US4884378 A, US4856939 A, US4834584 A, US4825619 A, US4802320 A, US4802318 A, US4776728 A, US4725170 A, US4710062 A, US4671706 A, US4662736 A, US4661023 A, US4643618 A, US4618283 A, US4616959 A, US4572699 A, US4524551 A, US4514113 A, US4505621 A, US4496266 A, US4494892 A, US4470728 A, US4454699 A, US4449857 A, US4391557 A, US4374798 A, US4343572 A, US4343571 A, US4341491 A, US4335549 A, US4329089 A, US4324508 A, US4312606 A, US4266890 A, US4260296 A, US4229123 A, US4228628 A, US4208850 A, US4207718 A, US4177617 A, US4117686 A, US4116010 A, US4110949 A, US4016693 A, US3998022 A, US3995434 A, US3936987 A, US384541 A, US3686873 A, US3557505 A, US3464211 A, US3430404 A, US3421326 A, US3418774 A, US3390502 A, US3332187 A, US3274742 A, US3252287 A, US317048 A, US311444 A, US3036407 A, US301064 A, US300254 A, US300253 A, US299067 A, US298463 A, US297767 A, US297574 A, US297464 A, US2963828 A, US296365 A, US296007 A, US295790 A, US295788 A, US2882689 A, US2313363 A, US228052 A, US2252155 A, US2235646 A, US2193425 A, US1818416 A, US1762343 A, US1456498 A, US1414444 A, US126547 A, US1092621 A, US05484235, SU894038 U, SU27174 T, SU1090803 T, SE84735 C1, SE84735 C, SE205452 C1, SE205452 C, JP61209522 A2, JP56086016 A2, JP3144014 A2, JP2009522 A2, JP08511590, GB2127872 A1, GB2014222 A1, GB191314528 A, GB187100336 A, GB1385207 A, GB120872 A, FR392474 A, FR2633650 A1, FR2610962 A1, FR2367147 A1, FR2285494 A1, FR2216823 A5, FR1360872 A, FR1129634 A, FR1112729 A, FR02367147, EP0574233 A1, EP0472993 A1, EP0430890 A1, EP0427221 A1, EP0379466 A1, EP0351229 A2, EP0212357 A1, EP0170113 A1, EP0079880 A2, EP0047718 B1, EP0047717 B1, EP0002216 A1, DE4103330 A1, DE3401629 A1, DE3025883 A1, DE2944550 A1, DE2753224 A1, DE2414202 A1, DE206822 A, DE04103330, CH657651, CA2031077 AA, CA1220764 A1,

Forward Citations: WO9935343, WO9935342, WO9932731, WO9904102, WO9836892, WO9739195, WO9720996, WO9626325, WO17069682, WO16106149, WO14145800, WO12151342, WO12151342, WO12131273, WO11109360, WO11084983, WO11079405, WO10008428, WO09136042, WO09097524, WO08122733, WO07012864, WO07004772, WO07004772, WO05113911, WO05100700, WO05095718, WO04053239, WO04018779, WO04018779, WO0238872, WO0117744, WO0109439, WO0020695, USRE42680, USRE39922, USD717970, USD711014, USD708765, USD688816, USD688815, USD688814, USD688813, USD688812, USD685502, USD671657, USD663858, USD622581, USD615669, USD569010, USD555808, USD552258, USD548367, USD548366,

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Abstract:
Source: US5344305A A method and apparatus for in−mold labelling in which labels are individually cut from a continuous web as demanded by the cycling of a mold. The web of labels is advanced through a die cutter which sequentially cuts individual labels from the web. A transfer device picks a freshly cut label from the die cutter and places the label within the cavity of a mold located in proximity to the die cutter. By individually cutting labels from a web at the time of use rather than loading a stack of precut labels in a magazine, the invention allows for the use of thinner, less expensive, and compatible plastic label material.

0) US2011313218A – SYSTEMS, APPARATUS AND METHODS OF A DOME RETORT...

39) Family number: 49661663 (US2011313218A) © PatBase

Title: SYSTEMS, APPARATUS AND METHODS OF A DOME RETORT

Priority: US20100316748P 20100323 US20110070334 20110323 US20120348545 20120111 US20120348443 20120111 US20120348413 20120111 US20120348535 20120111 WO2011US29657 20110323

Family:

Publication number	Publication date	Application number	Application date
AU2011232418 AA	20110929	AU20110232418	20110323
AU2011232418 AH	20121101	AU20110232418	20110323
BR112012024044 A2	20160830	BR20121124044	20110323
CA2793947 AA	20110929	CA20112793947	20110323
MA34168 B1	20130403	MA20120035322	20121023
US2011313218 AA	20111222	US20110070334	20110323
US2012138422 AA	20120607	US20120348545	20120111
US2012138445 AA	20120607	US20120348443	20120111
US2012138446 AA	20120607	US20120348413	20120111
US2012141947 AA	20120607	US20120348535	20120111
WO11119756 A2	20110929	WO2011US29657	20110323
WO11119756 A3	20111215	WO2011US29657	20110323
WO13106415 A1	20130718	WO2013US20809	20130109
WO13106438 A1	20130718	WO2013US20843	20130109
WO13106509 A1	20130718	WO2013US20939	20130110
WO13106524 A1	20130718	WO2013US20959	20130110

Probable Assignee: DANA TODD

Assignee(s):(std)**:** DANA TODD ; DANA TODD C ; TOOD C DANA

Assignee(s): DANA TODD A

Inventor(s):(std)**:** DANA TODD C ; DANA TOOD C

Inventor(s): TOOD C DANA

Agent(s): GRIFFITH HACK; SIM AND MCBURNEY; BUSCHMANN CRAIG ET AL; BACOCH JOHN C ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B01D3/00 B01J19/18 B01J6/00 C01B31/02 C07C1/00 C10B1/04 C10B29/02 C10C1/20 C10G1/00 C10G1/02 C10G3/00 C10G7/00 C10G9/00 C10G9/04 E21B43/24 E21C41/00 F23G5/027 F27D99/00 (Advanced/Invention)

CPC: C10G2300/1003 C10G2300/1014 C10G2300/1025 C10G2300/205 C10G2300/308 C10G2300/4043 C10G2300/4081 C10G2300/44 C10G2400/02 C10G2400/04 C10G2400/08 C10G2400/28 C10G2300/807 C10B9/00 C10B49/02 C10G2300/42 C10G1/10 C10G1/04 C10G1/02 B01D1/14 C10B49/06 C10B53/06 C10G1/00 C10G9/02 C10G9/04 C10B49/04 C10B1/04 Y02P20/129 Y02P20/133 Y02P20/134 Y02P20/145 Y02P30/20

European class: B01D1/14 C10B49/02 C10B53/06 C10B9/00 C10G1/00 C10G1/02 C10G1/04

US class: 196/46 196/46P 196/46S 201/18 201/18P 202/108 202/120 202/120S 202/123 202/123S 208/400 208/400S 208/409 208/409S 422/164 422/164S 422/233 422/233S 432/5 432/5P 585/240 585/240P

Classification Explorer

Cited documents: US7832483 BB, US7371308 BA, US701145 A, US7005112 BA, US5360537 A, US4948468 A, US4552214 A, US4473120 A, US4430195 A, US4401162 A, US4382850 A, US4155967 A, US4133741 A, US413306 A, US4090945 A, US4056461 A, US4029220 A, US3997407 A, US3983009 A, US3676365 A, US3454382 A, US2888254 A, US2013105295 AA, US2013098751 AA, US2013075244 AA, US2012272568 AA, US2012199466 AA, US2012141947 AA, US2012138446 AA, US2012138445 AA, US2012138422 AA, US2011313218 AA, US2011308801 AA, US2010242351 AA, US2010083530 AA, US2008190816 AA, US2008190815 AA, US2007125637 AA, US2005194244 AA, US1832867 A, US1499850 A,

Forward Citations: WO13106509, WO13106438, US9650878, US8875371, US2011313218, US2011308801, US2010206410, CN104479705,

Abstract:
Source: US2011313218A A system, apparatus and method for hydrocarbon extraction from feedstock material that is or includes organic material, such as oil shale, coal, lignite, tar sands, animal waste and biomass. A retort system including at least one retort vessel may include a monolithic dome structure surrounded by a process isolation barrier, the dome structure being sealingly engaged with the process isolation barrier. The dome structure and the process isolation barrier define a retort chamber, at least a portion of which may comprise a subterranean chamber. A lower end of the dome retort structure provides an exit for collected hydrocarbons and spent feedstock material. Systems may include a plurality of such dome retort structures. A control system may be used for controlling one or more operating parameters of a retorting process performed within such a dome retort structure for extraction and collection of hydrocarbons.

40) Family number: 33691240 (US2008028694A) © PatBase

Title: CONSTRUCTION WEATHER SHIELD AND SHELTER SYSTEM

Priority: CA20052506928 20050509 CA20062545924 20060505 WO2006CA00718 20060505

Family:

Publication number	Publication date	Application number	Application date
CA2506928 AA	20061109	CA20052506928	20050509
CA2506928 C	20121218	CA20052506928	20050509
CA2545924 AA	20061109	CA20062545924	20060505
US2008028694 AA	20080207	US20070797585	20070504
US2009159864 AA	20090625	US20060913742	20060505
US8132792 BB	20120313	US20060913742	20060505
WO06119613 A1	20061116	WO2006CA00718	20060505

Probable Assignee: HIGHLAND SAFETY SYSTEMS LTD

Assignee(s):(std): PERRIS KEVIN ; XILE INNOVATIONS INC ; SAFETY IN A SECOND LTD ; WASITIS ROBERT

Assignee(s): SWAROVSKI OPTIK KG ; XILE INNOVATIONS INC91 BANCHORY CRESCENTKANATAO1K2K 2V2CA ; SAFETY IN A SECOND LTD91 BANCHORY CRESCENTOTTAWAO1K2K 2V2CA ; PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA ; HIGHLAND SAFETY SYSTEMS LTD ; HIGHLAND SAFETY SYSTEMS LTDUNKNOWNUNKNOWN

Inventor(s):(std): PERRIS KEVIN ; WASITIS ROBERT

Inventor(s): PERRIS KEVIN1434 WHIPPORWILL ROADR.R. # 6SMITH FALLSO1K7A 4S7CA

Agent(s): CASSAN MACLEAN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04G21/24 E04G21/28 E04G21/32 E04G3/22 E04G5/14 E04H17/14 (Advanced/Invention); E04G21/24 E04G21/32 E04H17/14 (Core/Invention)

CPC: E04G21/28 E04G21/3261 Y10S256/06 E04G2005/148 E04G21/3223 E04G21/3233 E04G21/3238 E04G21/3276

European class: E04G21/28 E04G21/32B6 E04G21/32B6B E04G21/32F

US class: 135/115 135/119 182/113 182/82 256/59 256/59P 256/65.06 256/65.14 256/DIG.6 52/127.4

Classification Explorer

Cited documents: US6904720 BA, US6758306 BB, US6679482 BB, US6336623 BA, US6296003 BA, US6220577 BA, US6170502 BA, US6053281 A, US6039150 A, US6038829 A, US6015139 A, US6003629 A, US5896944 A, US5819474 A, US580311 A, US5711398 A, US5647451 A, US5573227 A, US5456451 A, US5431372 A, US5358025 A, US5314167 A, US5299655 A, US4979725 A, US4875549 A, US4830341 A, US4815562 A, US4798220 A, US4787475 A, US4766918 A, US4631765 A, US3995833 A, US3858364 A, US3805816 A, US3782110 A, US3776521 A, US3589682 A, US3561518 A, US3480257 A, US3480069 A, US3251399 A, US3121470 A, US2006249721 AA, US2002095898 AA, CA917973 A1, CA917972 A1, CA2393092 AA, CA2237418 AA, CA2206676 AA, CA2162526 AA, CA1299002 A1, CA1026604 A1, CA1013981 A1,

Forward Citations: WO15044631, WO09052575, WO09037393, WO09037393, USD659261, US9631396, US9441384, US9376832, US9371666, US2017138070, US2017096836, US2016194889, US2016069102, US2015315810, US2015275533, US2015176292, US2013240817, US2013153843, US2013037770, US2012074366, US2011204307, US2010171085, GB2443884, FR2939463, FR2919642, CN103526892, CN103526892, CH700844, AU2008100068, AU2007101042,

Abstract:
Source: US2008028694A A weather shield to protect workers and materials in a structure under construction from inclement weather while selectively providing stress relief to the weather shield from high winds in order to prevent damage to the weather shield is disclosed. The weather shield comprises a sheet of substantially flexible, substantially weatherproof material having a closeable opening for wind relief. The sheet protects the structure from inclement weather when the closeable opening is closed. When the closeable opening is open, it allows the passage of wind therethrough thereby tending to avoid wind damage to the weather shield. A temporary shelter for a structure under construction having a plurality of temporary guard rail supports and a weather shield is also disclosed, as well as a temporary shelter kit having a plurality of temporary guard rail supports and a weather shield.

0) US2013097961A – SQUARE SHAPED LIGHTWEIGHT STEEL COMPONENT WITH ...

41) Family number: 50438674 (US2013097961A) © PatBase

Title: SQUARE SHAPED LIGHTWEIGHT STEEL COMPONENT WITH REINFORCED MEMBERS

Priority: CN201010216616 20100630 WO2011CN75874 20110617

Family:

Publication number	Publication date	Application number	Application date
CN102312483 A	20120111	CN201010216616	20100630
CN102312483 B	20131225	CN201010216616	20100630
US2013097961 AA	20130425	US20110807179	20110617
US9151036 BB	20151006	US20110807179	20110617
WO12000391 A1	20120105	WO2011CN75874	20110617

Probable Assignee: HSIEH YING CHUN

Assignee(s):(std)**:** HSIEH YING CHUN ; HSIEH YINGCHUN ; XIE YINGJUN ; YINGJUN XIE

Inventor(s):(std)**:** HSIEH YING CHUN ; HSIEH YINGCHUN ; XIE YINGJUN ; YINGJUN XIE

Agent(s): MCHALE AND SLAVIN PA; BEIJING DINGJIADA IP FIRM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/18 E04B1/19 E04B1/24 E04B1/30 E04C3/07 E04C5/18 (Advanced/Invention); E04C3/04 (Advanced/Non–invention)

CPC: E04B1/185 E04B1/30 E04C3/07 E04C2003/0421 E04C2003/0465 E04C2003/0473

European class: E04C3/07 P04C3/04S1U P04C3/04S3S P04C3/04S3U

US class: 1/1 52/653.2

Classification Explorer

Cited documents: WO9730235 A1, US6971690 BB, US6802170 BB, US5992125 A, US5157883 A, US3890697 A, US3300940 A, US2731824 A, US2008041555 AA, US2005241261 AA, US2004907 A, US2004163356 AA, US2004045237 AA, US2003126827 AA, DE2701396 A1, CN202194250 U, CN202194250 A, CN201738444 U, CN20173844 A, CN201502135 U, CN201367675 Y, CN1702258 A,

Forward Citations: CN102900199,

Abstract:
Source: US2013097961A A square shaped lightweight steel component with reinforced members includes a main body structure (1) and reinforced members (2). The main body structure (1) is a square steel tube integrally molded by a steel plate with certain thickness. One side of the square steel tube is provided with an opening. Angular curled edges (5) are respectively set on two sides of the opening. The reinforced members (2) are fixedly connected with the side of the main body structure (1) having the opening and installed with an interval therebetween.

0) US2009151298A – METHOD OF MAKING MONOLITHIC CONCRETE STRUCTURES...

42) Family number: 41515821 (US2009151298A) © PatBase

Title: METHOD OF MAKING MONOLITHIC CONCRETE STRUCTURES

Priority: EG20060000448 20060816 EG20060080448 20060816 EG20060200604 20060816 EP20060776020 20060824 EG20060080448 20060817 IN2009MN00520 20090313 WO2006EG00032 20060824 WO2006EG00032 20060816

Family:

Publication number	Publication date	Application number	Application date
EA019161 B1	20140130	EA20090070205	20060824
EA200970205 A1	20091230	EA20090070205	20060824
EG27117 A	20160623	EG20060080448	20060817
EP2061937 A1	20090527	EP20060776020	20060824
EP2061937 A4	20100113	EP20060776020	20060824
EP2061937 B1	20130703	EP20060776020	20060824
ES2429565 T3	20131115	ES20060776020T	20060824
IN00520MN2009 A	20090522	IN2009MN00520	20090313
IN04499MU2015 A	20170602	IN2015MU04499	20151130
IN268857 B	20150925	IN2009MN00520	20090313
JP2010518275 T2	20100527	JP20090524079T	20060824
JP4991855 B2	20120801	JP20090524079	20060824
MA30697 B1	20090901	MA20090031676	20090227
US2009151298 AA	20090618	US20090359371	20090126
WO08019699 A1	20080221	WO2006EG00032	20060824
WO08019699 A8	20110303	WO2006EG00032	20060824
ZA200901017 A	20100728	ZA20090001017	20090212

Probable Assignee: JAZZAR MOHAMMED OMAR

Assignee(s):(std)**:** JAZZAR MOHAMMED OMAR ; JAZZAR OMAR ABDUL ; MOHAMMED OMAR ABDELATIF EL JAZZAR

Inventor(s):(std)**:** JAZZAR MOHAMMED OMAR ; JAZZAR OMAR ABDUL ; MOHAMMED OMAR ABDELATIF EL JAZZAR

Agent(s): BABELUK MICHAEL; DE ELZABURU ALBERTO; DAVID KIEWIT

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/04 E04B1/16 E04B1/348 E04B5/43 E04C2/06 E04C2/288 E04C3/34 (Advanced/Invention); E04B1/00 E04C2/06 (Core/Invention); E04C (Subclass/Invention)

International class (IPC 1–7): E04C2/06

CPC: E04B1/164 E04B1/34823 E04B5/43 E04C3/34

European class: E04B1/16C E04B1/348C2 E04B5/43 E04C3/34

US class: 52/745.05 527/450.5

Classification Explorer

Cited documents: WO05007986 A1, US915421 A, US7121061 BB, US5809712 A, US4065907 A, US3918222 A, US3788012 A, US3748805 A, US3562979 A, US2004118080 AA, US1516074 A, SU553335 T, SU1709040 T, JP2004019330 A2, GB1419674 A, DE2251613 A1,

Forward Citations: US9562355, US9540815, US9260866, US8347585, US2013305652, US2011146198, FR3013747, EP2876226, CN101979789,

Abstract:
Source: US2009151298A A method of making a monolithic portion of a concrete building from a combination of pre−cast and cast−in−situ elements distributes moments and shear loads by using flanged pre−cast columns for support. In addition, a precast 'waffle' element is used to reduce the overall weight of the slab being formed. In preferred versions of this method support arms are provided that link formwork to an anchor cast into a pre−cast column and from the anchor to a load bearing point on a lower, pre−cured slab.

0) WO06031001A1 – STEEL–CONCRETE SANDWITCH TYPE HYBRID BEAM AND H...

43) Family number: 33636686 (WO06031001A1) © PatBase

Title: STEEL–CONCRETE SANDWITCH TYPE HYBRID BEAM AND HIGH STRENGH HYBRID STRUCTURE SYSTEM USING THE SAME

Priority: KR20040073688 20040915

Family:

Publication number	Publication date	Application number	Application date
KR20060024850 A	20060320	KR20040073688	20040915
WO06031001 A1	20060323	WO2004KR03206	20041208

Probable Assignee: SAMSUNG CORP

Assignee(s):(std)**:** KIM JONG SAN ; KIM SOO YOUNG ; LEW YOUNG KEE ; SAMSUNG C AND T CORP ; SAMSUNG CORP

Inventor(s):(std)**:** KIM JONG SAN ; KIM SOO YOUNG ; LEW YOUNG KEE

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9)**:** E04C3/29 E04C3/293 (Advanced/Invention); E04C3/293 (Advanced/Non–invention); E04C3/29 (Core/Invention)

International class (IPC 1–7)**:** E04C3/293

CPC: E04B5/43 E04C3/293

European class: E04B5/43 E04C3/293

Classification Explorer

Cited documents: WO02099215 A1, KR20010028919 A, JP61165452 A2, JP61065116 U1, JP50081017 U1, JP4254646 A2,

Forward Citations: KR101612623, KR101320571, KR100802515, ITUD20120188, FR2925088, CN105155774, CN104563391, CN104060761, CN104060761,

Abstract:
Disclosed herein are a steel–concrete sandwich–type hybrid beam and a high strength hybrid structure system using the same. A shape steel member is arranged in pairs in both sides of the beam and a concrete is filled between the pair of shape steel members, and thus a high rigidity and high damping performance of RC frame and a construction efficiency of steel framing can be achieved simultaneously. Therefore, a convenience of construction and a good improved structural rationality can be obtained, thus reducing the construction cost, as compared with the conventional RC and PC beams having the same rigidity. The steel–concrete sandwich–type hybrid beam is formed of a steel member and a concrete member. A pair of lateral shape steel member forming both side faces of the hybrid beam is provided. A filled concrete is placed and cured between the pair of lateral shape steel members. The lateral shape steel members are disposed in parallel at regular intervals along the longitudinal direction of the hybrid beam.

0) US2009084061A – FIRE–PREVENTION STRUCTURE FOR BUILDINGS

44) Family number: 43088336 (US2009084061A) © PatBase

Title: FIRE–PREVENTION STRUCTURE FOR BUILDINGS

Priority: US20070865732 20071002

Family:

Publication number	Publication date	Application number	Application date
US2009084061 AA	20090402	US20070865732	20071002
US8516776 BB	20130827	US20070865732	20071002

Probable Assignee: PAN CHAN PING

Assignee(s):(std)**:** PAN CHAN PING

Inventor(s):(std)**:** PAN CHAN PING

Agent(s): SINORICA LLC; MING

International class (IPC 8–9)**:** E04B1/94 E04C2/54 (Advanced/Invention); E04B1/94 (Core/Invention)

CPC: E04B1/24 E04B1/945

European class: E04B1/24 E04B1/94C

US class: 52/236.3 52/396.01 52/741.3 52/784.11

Classification Explorer

Cited documents: US7596914 BB, US7197854 BB, US7028435 BB, US7007434 BA, US6920728 BB, US6151851 A, US5887396 A, US4333285 A, US4294052 A, US4221092 A, US4211045 A, US3616103 A, US3145811 A, US2007130864 AA, US2005246988 AA, US2005217190 AA, US2004255534 AA, US2004168398 AA, US2004074176 AA, US1978012 A,

Forward Citations: US9677273, US2014373460, US2014013679, JP2015059347,

Abstract:
Source: US2009084061A A fire–prevention structure for buildings includes at least a first fire–prevention district, a fire–prevention floor slab, and a second fire–prevention district. The first fire–prevention district having at least a steel–structured story further includes a plurality of first steel columns and a plurality of first steel beams. The first steel column is a hollow rectangular column with an upper end opening. The first steel beam is connected to a lateral side of the first steel column. The fire–prevention floor slab is constructed on top of the first steel beams and partly inside the end opening of the first steel column. The second fire–prevention district having at least a steel–structured story further includes a plurality of second steel columns and a plurality of second steel beams. The second steel column has a lower end portion further extruding an engagement plate and an engagement column. The engagement plate is fixed to the fire–prevention floor slab through anchor bolting, and the engagement column is protruded into the end opening of the first steel column.

0) US2012159873A – COMPOSITE CONNECTION FOR A WIND TURBINE TOWER S...

45) Family number: 47638699 (US2012159873A) © PatBase

Title: COMPOSITE CONNECTION FOR A WIND TURBINE TOWER STRUCTURE

Priority: EP20090160871 20090521 WO2010EP56760 20100518

Family:

Publication number	Publication date	Application number	Application date
CN102439250 A	20120502	CN201080021946	20100518
CN102439250 B	20140709	CN201080021946	20100518
DE602009014080 D1	20130516	DE200960014080T	20090521
DK2253781 T3	20130617	DK20090160871T	20090521
EP2253781 A1	20101124	EP20090160871	20090521
EP2253781 B1	20130320	EP20090160871	20090521
ES2415205 T3	20130724	ES20090160871T	20090521
IN09345DN2011 A	20130118	IN2011DN09345	20111129
KR20120093062 A	20120822	KR20117028012	20100518
US2012159873 AA	20120628	US20100318571	20100518
US8511044 BB	20130820	US20100318571	20100518
WO10133558 A1	20101125	WO2010EP56760	20100518

Probable Assignee: ALSTOM RENEWABLE TECHNOLOGIES

Assignee(s):(std)**:** ECOTECNIA EN RENOVABLES S L ; GARCIA GOMEZ NURIA ; FISAS CAMANES ALBERT ; ALSTOM WIND SLU ; ALSTOM WIND SL ; ECOTECNIA EN RENOVABLES SL ; PUIGCORBE PUNZANO JORDI ; GONZALEZ DEL EGIDO ALBERTO ; ALSTOM WIND S L U

Assignee(s): ECOTECNIA ENERGIAS RENOVABLES SL ; ECOTECNIA ENERGIAS RENOVABLES S L ; ALSTOM HYDRO ESPANA SLU ; ALSTOM RENEWABLE TECHNOLOGIES ; ALSTOM RENOVABLES ESPANA SL

Inventor(s):(std)**:** ALBERT FISAS CAMANES ; ALBERTO GONZALEZ DEL EGIDO ; FISAS CAMANES ALBERT ; GARCIA GOMEZ NURIA ; GONZALEZ DEL EGIDO ALBERTO ; JORDI PUIGCORBE PUNZANO ; NURIA GARCIA GOMEZ ; PUIGCORBE PUNZANO JORDI

Inventor(s): PUIGCORBE PUNZANO JORDI 08005 ; NURIA GARCIA ; ALBERT FISAS ; GONZALEZ DEL EGIDO ALBERTO 08005 ; JORDI PUIGCORBE ; GARCIA GOMEZ NURIA 08005 ; FISAS CAMANES ALBERT 08005 ; ALBERTO GONZALEZ

Agent(s): ZBM PATENTS; ZBM Patents; ZEA BERNABE; SQUIRE SANDERS US LLP; ZBM PATENTS ZEA BARLOCCI AND MARKVARSDSEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/38 E04B2/34 E04C3/00 E04G13/02 E04G21/02 E04H12/00 E04H12/08 E04H12/12 F03D11/04 (Advanced/Invention); F03D11/04 (Advanced/Non–invention)

CPC: E04H12/08 E04H12/12 F05B2230/60 F05B2240/912 Y02E10/728

European class: E04H12/08 E04H12/12 R05B230/60 R05B240/912 Y02E10/72N

US class: 249/48 249/48S 52/40 52/426 52/426S 52/651.01 52/651.010S 52/745.17 52/745.170S 52/831 52/836 52/845 52/98 52/98P

Classification Explorer

Cited documents: WO09048955 A1, WO08087181 A1, WO08031912 A1, WO07095940 A1, WO05015013 A1, WO05005752 A1, WO04083633 A1, WO04031578 A1, WO03069099 A1, WO03048570 A1, WO0238891 A1, US904841 A, US7802412 BB, US7464512 BA, US6957518 BA, US6467233 BA, US6157088 A, US3793797 A, US3793794 A,

US2007006541 AA, US2006156681 AA, US2005072067 AA, US2004098935 AA, JP9195584 A2, JP2007321710 A2, JP2005220715 A2, JP2003147864 A2, GB611907 A, FR802324 A, FR2586737 A3, EP1876316 A1, EP1624137 A1, EP0960986 A2, DE3900432 A1, DE2650085 A1, DE20013774 U1, DE20013774 U, DE19832921 A1, DE19802210 A1, DE10230273 B3,

DE102005014025 A1

CN1759242 A, CN1580548 A, CH251994 A, BE472223 A,

Forward Citations: WO16189083, WO12101088, US9032674, US8713892, ES2543371, EP2479430, DE102015209686, CN103328820, CN103328820, CN103015787, CN103015787,

Abstract:
Source: US2012159873A A tower section for a wind turbine tower structure comprises at least two shell segments defining, in an assembled condition, a substantially hollow structure, and including first connecting means for mutually joining two adjacent shell segments along a joint, which comprise a column of concrete arranged overlapping at least part of the joint between adjacent shell segments. A method for building a tower section for a wind turbine tower structure and a wind turbine comprising a nacelle having rotatable blades and a vertical tower made of at least one of such tower sections are further provided.

0) BRPI1101265A – PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTEN...

46) Family number: 60685487 (BRPI1101265A) © PatBase

Title: PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTENCAO DE PECAS E DE ESTRUTURAS PRE–FABRICADAS MISTAS E SISTEMA DE ESTRUTURA PRE–FABRICADA MISTA DE OBRAS DE CONSTRUCAO CIVIL PARTS PRE–MANUFACTURED MIXED, PARTS OF OBTAINING PROCESSES AND STRUCTURAL PRE–MANUFACTURED AND MIXED SYSTEM STRUCTURE PRE–MADE MIXED CIVIL CONSTRUCTION WORKS (Machine translation)

Priority: BR2011PI01265 20110304

Family:

Publication number	Publication date	Application number	Application date
BRPI1101265 A2	20150908	BR2011PI01265	20110304

Probable Assignee: VASCONCELLOS ALEXANDRE LUIZ

Assignee(s):(std)**:** VASCONCELLOS ALEXANDRE LUIZ

Assignee(s): ALEXANDRE LUIZ VASCONCELLOS

Inventor(s):(std)**:** VASCONCELLOS ALEXANDRE LUIZ

Inventor(s): ALEXANDRE LUIZ VASCONCELLOS

International class (IPC 8–9): E04C3/293 E04C3/34 (Advanced/Invention)

CPC: E04C3/293 E04C3/34

Classification Explorer

Abstract:
Source: BRPI1101265A 1 Resumo "PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTENCAO DE PECAS E DE ESTRUTURAS PRE–FABRICADAS MISTAS E SIS– TEMA DE ESTRUTURA PRE–FABRICADA MISTA DE OBRAS DE 5 CONSTRUCAO CIVIL" O presente resumo refere–se a uma patente de in– vencao para pecas pre–fabricadas mistas, processos de obtencao de pecas e de estruturas pre–fabricadas mistas e sistema de estrutura pre–fabricada mis– ta, pertencentes ao campo da engenharia civil; ditas pecas compreendendo 10 principalmente colunas (101) ou vigas (102) e compostas, essencialmente: _poLper and l(is)_deco,(10).laminado(s).ou_dobrado(s),au_tubular(es) ou soL dado(s); por armacao(oes) de vergalhoes der aco (30) montada(s) enrespa– co(s) intemo(s) do(s) perfil(is) de aco (10); e por concreto estrutural (50), que enche o(s) espaco(s) intemo(s) do(s) perfil(is) de aco (10), recobre a(s) 15 armacao(oes) de vergalhoes de aco (30) e forma ou nao capa(s) de concreto (51) externas) a peca (1), todos arranjados em perfeita interacao, para tra– balharem como uma so peca, na composicao da estrutura (100). 1 summary "PARTS PRE–MANUFACTURED MIXED, PARTS OF OBTAINING PROCESSES AND STRUCTURAL PRE–MANUFACTURED AND MIXED system STRUCTURE PRE–MADE MIXED CIVIL 5 CONSTRUCTION WORKS" This summary refers to a patent in – Convention for mixed pre–fabricated parts, cic processes of parts and composite pre–fabricated structures and pre–fabricated structure mis– ta system, belonging to the field of civil engineering; said parts comprising mainly 10 columns (101) or beams (102) and consisting essentially: _poLper and l (s) _deco, (10).laminado (s).ou_dobrado (s), au_tubular (s) or sun given (s); By armacao (oes) steel rebar der (30) mounted (s) enrespa– co (s) intemal (s) (s) profile (s) of action (10); and structural concrete (50), stuffing (s) space (s) intemal (s) (s) profile (s) of action (10), covers the (s) 15 armacao (oes) of steel square bars (30) and forms or not hood (s) concrete (51) outside) the piece (1), all arranged in perfect interaction for treat– balharem as one piece, in the composition of the structure (100).

47) Family number: 61378967 (US2017175376A) © PatBase

Title: DRY JOINT JOINING DEVICE BETWEEN COLUMNS AND BEAMS OF PRECAST REINFORCED CONCRETE

Priority: EP20140382262 20140707 WO2015ES70498 20150625

Family:

Publication number	Publication date	Application number	Application date
CL2016003362 A1	20170324	CL20160003362	20161228
CO20160005756 A2	20170310	CO20160005756	20161226
DE602014006344 D1	20170309	DE201460006344T	20140707
EP2966232 A1	20160113	EP20140382262	20140707
EP2966232 B1	20170125	EP20140382262	20140707
US2017175376 AA	20170622	US20150324370	20150625
WO16005632 A2	20160114	WO2015ES70498	20150625
WO16005632 A3	20160506	WO2015ES70498	20150625

Probable Assignee: FUNDACION TECNALIA RES AND INNOVATION

Assignee(s):(std)**:** FUNDACION TECNALIA RES AND INNOVATION

Assignee(s): FUNDACION TECNALIA RESEARCH AND INNOVATION

Inventor(s):(std)**:** ARAMBURU IBARLUCEA AMAIA ; CHICA PAEZ JOSE ANTONIO ; CALDERON URISZAR ALDACA INIGO

Inventor(s): INIGO CALDERON URISZAR ALDACA ; JOSE ANTONIO CHICA PAEZ ; AMAIA ARAMBURU IBARLUCEA

Agent(s): JARRY IP JARRY IP SPA; JAIME EDUARDO DELGADO VILLEGAS; STIEBE LARS MAGNUS; VALLEJO LOPEZ JUAN PEDRO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/19 E04B1/21 E04B1/41 E04C5/16 (Advanced/Invention)

CPC: E04B1/215 E04C5/162 E04B1/40 E04C5/16 E04B1/1912 E04B2103/02

Classification Explorer

Cited documents: KR101260392 B1, JP6146478 A2, JP5160907 B2, JP5154962 B2, JP4027037 A2, JP11029979 A2,

Abstract:
Source: US2017175376A A joining device (**100**) for precast reinforced concrete elements with a dry joint comprising a first group of joining reinforcements (**10**') arranged on a first plane and in parallel with one another, each one of said joining reinforcements (**10**) comprising one reinforcement (**1**) and two threaded ends (**2**). The device comprises first coupling means (**30**) for coupling to the columns (**200**) arranged between the joining reinforcements (**10**) and perpendicular to the first plane defined by the joining reinforcements (**10**) and a plurality of anchoring plates (**20**) arranged so as to define a closed frame inside of which the joining reinforcements (**10**) are arranged, and where the inner space defined by the anchoring plates (**20**) is filled with a structural filler material (concrete, resin, composite, etc.) (**50**). The anchoring plates (**20**) comprise a plurality of holes (**21**), at least one for each threaded end (**2**), in a position that matches up with the latter, and through which the threaded ends (**2**) remain accessible. The device comprises second coupling means (**40**) between the threaded ends (**2**) and the beam (**300**) rebars.

48) Family number: 59897878 (US2017130898A) © PatBase

Title: GROUND LIQUEFIED NATURAL GAS STORAGE TANK AND METHOD FOR MANUFACTURING THE SAME

Priority: KR20140033606 20140321 WO2015KR02775 20150320

Family:

Publication number	Publication date	Application number	Application date
CA2943344 AA	20160920	CA20152943344	20150320
CN106233058 A	20161214	CN201580020691	20150320
EP3121506 A1	20170125	EP20150764915	20150320
KR101536864 B1	20150723	KR20140033606	20140321
US2017130898 AA	20170511	US20150127661	20150320
WO15142126 A1	20150924	WO2015KR02775	20150320

Probable Assignee: HYUNDAI HEAVY IND CO LTD

Assignee(s):(std)**:** HYUNDAI HEAVY IND CO LTD ; HYUN DAI HEAVY IND CO LTD

Assignee(s): HYUNDAI HEAVY IND CO ; CHUN IN SOO ; HYUNDAI HEAVY INDUSTRIES CO LTD ; JEONG SE HWAN ; KIM DAE SOON ; SHIN SANG BEOM ; LEE DONG JU ; SHIN DONG KYU

Inventor(s):(std)**:** CHUN IN SOO ; JEONG SE HWAN ; KIM DAE SOON ; LEE DONG JU ; SHIN DONG KYU ; SHIN SANG BEOM

Agent(s): SMART AND BIGGAR; BETTEN AND RESCH; KANG SIN SEOB ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04H7/02 E04H7/16 F17C1/02 F17C1/12 F17C13/00 F17C3/02 (Advanced/Invention)

CPC: F17C3/00 F17C2201/035 F17C2201/052 F17C2203/0333 F17C2205/0157 F17C2205/018 F17C2223/0161 F17C2260/012 F17C2270/0136 F17C1/02 F17C1/12 F17C3/02 F17C13/001 E04H7/16 F17C2203/0329 F17C2209/238 F17C2227/0135 E04H7/02 F17C2201/0157 F17C2203/012 F17C2203/0341 F17C2203/035 F17C2203/0629 F17C2203/0636 F17C2203/0678 F17C2209/232 F17C2221/033 F17C2223/033 F17C2260/042

Classification Explorer

Cited documents: KR20120013257 A, JPS6044694 A2, JPS55145899 A2, JP60044694 A2, JP60044694, JP55145899 A2, JP55145899, JP2001180793 A2, JP2001180793, JP2000159290 A2, JP2000159290,

Abstract:
Source: US2017130898A The present invention includes: an independent tank constituting an inner tank to store a storage material therein; at least one sandwich plate modularized and manufactured include a metal plate provided in a pair opposite to each other, the metal plates having a reinforcing material formed therebetween, and a filler filled between the metal plates, the at least one sandwich plate surrounding the outer surface of the independent tank to constitute an outer tank; and an external reinforcing member formed on the outer surface of the sandwich plate.

0) US4211045A – BUILDING STRUCTURE

49) Family number: 30389495 (US4211045A) © PatBase

Title: Building structure

Priority: JP19770005198 19770120 JP19770030112 19770317 JP19770066452U 19770524 US19770858198 19771207 JP19770066453U 19770524 JP19770066454U 19770524

Family:

Publication number	Publication date	Application number	Application date
JP1116813 C3	19821015	JP19770030112	19770317
JP53090612 A2	19780809	JP19770005198	19770120
JP53114214 A2	19781005	JP19770030112	19770317
JP53160206 U1	19781215	JP19770066452U	19770524
JP53160207 U1	19781215	JP19770066453U	19770524
JP53160208 U1	19781215	JP19770066454U	19770524
JP56003441 Y2	19810126	JP19770066452U	19770524
JP56019604 Y2	19810511	JP19770066453U	19770524
JP57008937 B4	19820218	JP19770030112	19770317
US4211045 A	19800708	US19770858198	19771207
US4333285 A	19820608	US19790064732	19790808

Probable Assignee: KAJIMA CORP

Assignee(s):(std)**:** KAJIMA CORP ; KAJIMA KENSETSU KK

Assignee(s): KAJIMA KENSETSU K K ; KAJIMA KENSETSU KABUSHIKI KAISHA

Inventor(s):(std)**:** HATANO HAJIME ; KATO TOMOYASU ; KATOU TOMOYASU ; KOBAYASHI MIKIO ; KOIZUMI HAJIME ; MIYAGAWA KEIZOU ; MIYAKAWA KEIZO ; MIZUKOSHI KAORU ; SAEKI TOSHIO ; TAMANAGA SHINICHI ; TOOYAMA KOUZOU ; TOYAMA KOZO

International class (IPC 8–9): E04B1/16 E04B1/21 E04B1/30 E04B1/58 E04B5/43 E04C3/293 (Advanced/Invention)

International class (IPC 1–7): E04B1/16 E04B1/30 E04B1/58 E04B5/10 E04B5/19 E04B5/36

CPC: E04B1/21 E04B5/43 E04C3/065 E04C3/293

European class: E04B1/21 E04B5/43 E04C3/06H E04C3/293

US class: 52/236.3 52/251 52/252 52/260 52/319 52/432 52/602 52/649.2 52/653.1

Classification Explorer

Cited documents: US980480 A, US947769 A, US938458 A, US863555 A, US3349539 A, US2731824 A, US1794079 A, US1757077 A, US1501288 A, US1430424 A, US1135721 A, US1031046 A, US1031044 A, JP52015117 A2, JP46005185 A2, GB135688 A, FR788513 A, FR1475696 A, FR1257858 A, AT188088 B,

Forward Citations: WO9906642, WO9722770, WO9401636, WO9102859, WO8707318, WO8200677, WO09152476, WO03046299, WO0246548, US9562355, US9540815, US9260866, US9085898, US8910450, US8752347, US8572788, US8516776, US8505599, US8484928, US8205412, US8166717, US7647742, US7143554, US7083515, US6920728, US6807790, US6676183, US6543195, US6385930, US6266938, US6009677, US5867964, US5737895, US5697196, US5586418, US5371990, US5259160, US5245806, US5218802, US5181359, US5090172, US5050358, US4372088, US4363200, US2014298749, US2014245695, US2013305652, US2013008114, US2012124937, US2011271636, US2011094182, US2011083386, US2010287878, US2009307994, US2009300861, US2009188194, US2009188191, US2009084061, US2008302057, US2005115164, US2004055246, US2003164623, US2003084629, US2003029111, US2002174608, US2002129568, RU2548627, KR101521946, JP64080637, JP6143068, JP61045042, JP6065501, JP4286239, JP3244724, JP3151429, JP2297835, JP2014181545, JP2006336293, JP1287366, JP1274240, JP1080637, FR3013064, FR2927916, FR2925088, FR2704253, FR2599070, EP0328986, EP0292449, CN105297983, CN102733603, CN102733603, CN102071747, CN101851983, AU668975,

Abstract:
Source: US4211045A A building structure including a beam of steel or rod reinforced concrete which is sheathed in a U−shaped cross section steel shell, a concrete column which is encased in a steel tube, diagonal bracings and connecting members thereof. The topside of the U−shaped steel shell is open to allow concrete to be filled therethrough. Steel rods are placed in the shell and a steel panel connecting member secures the opposed sidewalls of the shell. Steel bars extend from a floor slab into the beam shell through the aforesaid open topside, thereby rendering the beam integral with the slab. Frame−like steel members for confining reinforcing bars and/or shear connectors are disposed in the inside of the beam shell. A steel sleeve is also provided in the beam shell for defining a space for disposition of equipment. In addition, an opening is provided in the bottom wall of the beam shell so as to allow steel rods to extend from the wall into the beam shell, thereby rendering the beam integral with the wall. A column is coupled to the beam by means of ring stiffeners or gusset plates. Diagonal bracings are positioned in symmetric relation to the frame member of the beam or column, and the diagonal bracings are fastened to the frame member of the beam or column by means of long bolts extending through the frame member thereof. The tip portions of diagonal bracings are provided with anchor members which are embedded in the concrete contained in the beam shell.

0) WO10104546A1 – SUSTAINABLE PROCESSES SUPER GREEN NUCLEAR SUPER...

50) Family number: 46842135 (WO10104546A1) © PatBase

Title: SUSTAINABLE PROCESSES SUPER GREEN NUCLEAR SUPER PLANT

Priority: US20090320440 20090126 US20090320441 20090126

Family:

Publication number	Publication date	Application number	Application date
WO10104546 A1	20100916	WO2010US00188	20100125

Probable Assignee: PETROVICH SVETOZAR B

Assignee(s):(std)**:** PETROVICH SVETOZAR B

Inventor(s):(std)**:** PETROVICH SVETOZAR B

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): G21C9/00 (Advanced/Invention)

CPC: G06Q99/00

European class: G06Q99/00

Classification Explorer

Cited documents: US6498989, US5941273, US5420897, US5343506, US4627213, US3704877, US2005089684,

Abstract:
A GC, MEHC Sets' millennium lifespan boundaries pressurized light water reactor processes, safe uniquely balanced bulk energy nuclear super green, super plant comprises: a reactor vessel's primary containment and a perimeter ancillary annex building primary coolant fluid piping loops GC conduits and configured buildings innovated boundaries closed mass and energy, anion bulb, in series, radial configurations' boundaries; said annex building two or four reactor coolant loops equipment floors, and steam generators/separators and high pressure pumps (now, out of primary containment) symmetrically align GC, MEHC boundaries two or four turbine building processes, temperatures and pressures functions, generated bulk electrical energy; mass energy conservation by GC comprise sustainable longevity configurations, electrical generation high efficiency, lower energy costs.

0) US3501881A – REINFORCEMENT OF CONCRETE STRUCTURES

51) Family number: 18798572 (US3501881A) © PatBase

Title: REINFORCEMENT OF CONCRETE STRUCTURES

Priority: US19670639371 19670518 US19700008139 19700116 US19710151284 19710609 US19730358470 19730509

Family:

Publication number	Publication date	Application number	Application date
DE1759542 A1	19710923	DE19681759542	19680513
DE1759542 B2	19730201	DE19681759542	19680513
DE1759542 C3	19730816	DE19671759542	19680513
ES150330 Y	19700616	ES19690150330U	19690517
ES367931 A1	19710416	ES19690367931	19690531
ES367932 A1	19710416	ES19690367932	19690531
FR1565891 A	19690502		19680516
JP53031887 B4	19780905	JP19680032619	19680516
US3501881 A	19700324	US19670639371	19670518
US3652756 A	19720328	US19700008139	19700116
US3738786 A	19730612	US19710151284	19710609
US3841599 A	19741015	US19730358470	19730509

Probable Assignee: BAYSHORE CONCRETE PROD CORP

Assignee(s):(std): BAYSHORE CONCRETE PROD CORP ; BAYSHORE CONCRETE PRODUCTS CORP CAPE CHARLES VA

Assignee(s): BAYSHORE CONCRETE PROD CORP US ; BAYSHORE CONCRETE PRODUCTS CORP

Inventor(s):(std): BUREN MYERS VAN ; BUREN MYERS VAN CHERITON VA ; VAN BUREN M ; VAN BUREN MYERS

Inventor(s): VAN BUREN M US ; MYERS VAN BUREN

International class (IPC 8–9): B28B21/68 B28B23/04 B28B23/08 E04C3/26 E04C5/08 (Advanced/Invention); B28B21/00 B28B23/02 E04C3/20 E04C5/00 (Core/Invention)

International class (IPC 1–7): B28B1/20 B28B23/04 B28B23/06 B28B23/08 E04B E04C3/10 E04C3/26 E04C3/34 E04C5/12 E04G17/10 E04H12/16 F16L9/04

CPC: Y10S138/11 E04C5/08 B28B23/043

European class: B28B23/04B E04C5/08

US class: 138/172 138/175 138/177 138/DIG.11 249/137 249/205 249/93 264/228 264/311 425/111 425/123 425/435 52/223 52/223.4 52/245 52/721.2 52/740.6 52/855 522/230

Classification Explorer

Cited documents: US893640 A, US890373 A, US3347005 A, US3273295 A, US3034537 A, US2859504 A, US2695754 A, US2638184 A, IT561472 A, GB1066387 A, DK67327 A,

Forward Citations: US9561632, US8104242, US7694473, US7343718, US7240464, US7137800, US7137800, US7032352, US6773650, US5809711, US5761875, US5457929, US5385460, US5288175, US5263297, US5219505, US5055021, US5012622, US4741875, US4529567, US4518342, US4407106, US4166347, US4044518, US3963056, US3765353, US2015096240, US2014150359, US2014054820, US2013133278, US2009000227, US2004211148, US2004020146, EP0214420, DE4015093, DE19819416,

Abstract:
Source: US3501881A ABSTRACT OF THE DISCLOSURE Use of pretension elongated reinforcing rods in concrete structures, the rods being terminated at various in–termediate ends of the structure, and spécial anchor arrangements for permitting intermediate termination of the rods.

0) US2004020933A – STORAGE TANK ASSEMBLY

52) Family number: 28675454 (US2004020933A) © PatBase

Title: STORAGE TANK ASSEMBLY

Priority: EP20010915470 20010316 GB20000006192 20000316 WO2001GB01159 20010316

Family:

Publication number	Publication date	Application number	Application date
AT513784 E	20110715	AT20010915470T	20010316
AU2001242562 AA	20010924	AU20010242562	20010316
AU2001242562 BB	20040610	AU20010242562	20010316
BRPI0109375 A	20030603	BR2001PI09375	20010316
BRPI0109375 B1	20101130	BR2001PI09375	20010316
CA2403351 AA	20020916	CA20012403351	20010316
CA2403351 C	20100504	CA20012403351	20010316
CN1223506 C	20051019	CN20018008475	20010316
CN1426374 A	20030625	CN20018008475	20010316
DE60144833 D1	20110804	DE20016044833	20010316
EP1263674 A1	20021211	EP20010915470	20010316
EP1263674 B1	20110622	EP20010915470	20010316
ES2365539 T3	20111006	ES20010915470T	20010316
GB200006192 A0	20000503	GB20000006192	20000316
GB200106550 A0	20010502	GB20010006550	20010316
GB2360321 A1	20010919	GB20010006550	20010316
GB2360321 B2	20020724	GB20010006550	20010316
MXPA02008981 A1	20041015	MX2002PA08981	20010316
NO20024384 A	20021113	NO20020004384	20020913
NO20024384 A0	20020913	NO20020004384	20020913
NO323968 B1	20070723	NO20020004384	20020913
NZ521443 A	20031128	NZ20010521443	20010316
PL193793 B1	20070330	PL20010357345	20010316
PL357345 A1	20040726	PL20010357345	20010316
PT1263674 T	20110720	PT20010915470T	20010316
RU2002127725 A	20040627	RU20020127725	20010316
RU2263066 C2	20051027	RU20020127725	20010316
US2004020933 AA	20040205	US20020221902	20021219
US7000800 BB	20060221	US20010221902	20010316
WO0168510 A1	20010920	WO2001GB01159	20010316
ZA200207356 A	20031003	ZA20020007356	20020913

Probable Assignee: COOKSON AND ZINN PTL LTD

Assignee(s):(std)**:** BOUDRY JOHN ALEXANDRE ; COOKSON AND ZINN ; COOKSON AND ZINN PTL LTD ; COOKSON AND ZINN PTY LTD ; COOKSON AND ZINN LTD

Assignee(s): COOKSON AND ZINN PTL LTD HADLEIGH ; BOUDRY JOHN A ; COOKSON AND ZINN PTL LIMITED ; COOKSON AND ZINN PTY LIMITED ; COOKSON AND ZINN (PTL) LTD ; COOKSON AND ZINN LIMITED

Inventor(s):(std)**:** BOUDRY JOHN ALEXANDRE ; JOHN ALEXANDRE BOUDRY ; BOUDRY JOHN A ; BAUDRI DZHON ALEKSANDR

Inventor(s): BOUDRY JOHN ALEXANDRE BRETTENHAM

Agent(s): WRAYS; MBM INTELLECTUAL PROPERTY LAW LLP; PATENTANWAELTE WALLACH KOCH DR HAIBACH FELDKAMP; MAUGHAN SOPHIE LOUISE; SHERIDAN ROSS PC

Designated states:	AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
International class (IPC 8–9):	B65D88/00 B65D88/76 B65D90/00 B65D90/12 B65D90/50 B67D5/60 B67D7/78 (Advanced/Invention); B65D88/00 B65D90/00 B65D90/12 B67D7/78 (Core/Invention)
International class (IPC 1–7):	B60S5/02 B65D088/76 B65D090/12 B65D88/00 B65D88/76 B65D90/00 B65D90/12 B67D5/60 E04H1/12
CPC:	B65D88/76 B65D90/501 B67D7/78
European class:	B65D88/76 B65D90/50B B67D7/78
US class:	220/567.1 220/567.2
Classification Explorer	
Cited documents:	US6161272 A, US6109290 A, US6105602 A, US6079580 A, US5921712 A, US5865346 A, US5526964 A, US5308423 A, US4911326 A, US4901748 A, SE383707 B, GB2325456 A1, EP0686105 B1,
Forward Citations:	US9061380, US8881925, US7946439, US2013270278, US2006118563, ES2447316, AU2013205100,

Abstract:
Source: US2004020933A According to the present invention there is provided a storage tank assembly comprising: (i) a storage tank; (ii) support means comprising at least one load bearing reinforcement means extending around and attached to at least a portion of the outer circumference of the storage tank, the support means further incorporating at least one mounting leg to enable the support means to be connected to a canopy.

0) US2004131428A – PILE ANCHOR FOUNDATION

53) Family number: 30715822 (US2004131428A) © PatBase

Title: PILE ANCHOR FOUNDATION

Priority: US20030437988P 20030106 US20030734281 20031215 US20060797746P 20060505 US20070797772 20070507 US20080076904 20080325 WO2007US10995 20070507

Family:

Publication number	Publication date	Application number	Application date
CA2651259 AA	20081104	CA20072651259	20070507
CA2651259 C	20140401	CA20072651259	20070507
US2004131428 AA	20040708	US20030734281	20031215
US2007269273 AA	20071122	US20070797772	20070507
US2008232906 AA	20080925	US20080076904	20080325
US7533505 BB	20090519	US20030734281	20031215
US7618217 BB	20091117	US20070797772	20070507
US7707797 BB	20100504	US20080076904	20080325
WO07130667 A2	20071115	WO2007US10995	20070507
WO07130667 A3	20080228	WO2007US10995	20070507

Probable Assignee: HENDERSON ALLAN P

Assignee(s):(std)**:** HENDERSON ALLAN P

Inventor(s):(std)**:** HENDERSON ALLAN P

Agent(s): ROBIC; JACOBSON HOLMAN PLLC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D27/00 E02D27/12 E02D27/32 E02D27/42 E02D5/10 E02D5/22 E02D5/30 E02D5/38 E02D5/54 F03D1/00 (Advanced/Invention); E02D27/00 E02D27/12 E02D27/32 E02D5/02 E02D5/22 E02D5/24 E02D5/34 F03D1/00 (Core/Invention)

International class (IPC 1–7): E02D27/50 E02D5/22

CPC: E02D27/12 F03D13/22 E04H12/085 Y02E10/728 E02D27/425 E02D27/42

European class: E02D27/12 Y02E10/72N

US class: 405/228 405/229 405/231 405/231S 405/232 405/232S 405/233 405/233P 405/239 405/239P 405/244 405/244S 405/251 405/252.1 405/255 405/256 405/256S 52/111 52/153 52/155 52/156 52/158 52/166 52/169.9 52/223.4 52/223.5 52/292 52/294 52/295 52/296 52/741.11 52/741.13 52/741.14 52/741.17 52/745.04 52/745.17

Classification Explorer

Cited documents: US7066094 BB, US6672023 BB, US6665990 BA, US6270308 BA, US6216414 BA, US6119425 A, US5960597 A, US5878540 A, US5826387 A, US5761875 A, US5678382 A, US5625988 A, US5586417 A, US5474399 A, US5379563 A, US5289626 A, US5231808 A, US5228806 A, US5131790 A, US4910940 A, US4842447 A, US4618287 A, US4287691 A, US4232846 A, US4228627 A, US4217738 A, US4060994 A, US4038827 A, US4031687 A, US3963065 A, US3963056 A, US3916635 A, US3842608 A, US3839874 A, US3793794 A, US3600865 A, US3559412 A, US3525224 A, US3382680 A, US3186181 A, US2724261 A, US2706498 A, US2374624 A, US2162108 A, US1164085 A, US1048993 A, JP6316942 A2, JP61233131 A2, JP59150830 A2, JP58166195 A2, JP55122916 A2, FR2030478 A5, FR1463696 A, DE2758489 A1,

Forward Citations: WO16140892, WO15107232, WO13074007, WO12159086, WO12037450, WO11047723, WO10071975, WO10060866, US9677274, US9617704, US9574349, US9518402, US9481973, US9359741, US9340947, US9328474, US9290903, US9290901,

US9238921, US9207000, US9206617, US9194095, US9115700, US9096986, US9080306, US9045878, US9032674, US9011047, US9003721, US8974150, US8950980, US8920077, US8863455, US8834072, US8806744, US8800225, US8745942, US8726589, US8720139, US8689506, US8677700, US8671568, US8631618, US8584430, US8578679, US8555518, US8511021, US8511020, US8448279, US8381479, US8375678, US8341788, US8302357, US8291646, US8261502, US8162569, US8146323, US8037646, US8015865, US7987640, US7966780, US7900406, US7823348, US7805895, US7786612, US7663263, US7614200, US2017044733, US2016097199, US2015330052, US2015143765, US2015121784, US2015075099, US2014345209, US2014331580, US2014298750, US2014245669, US2014237923, US2014237908, US2014223846, US2014215942, US2014079490, US2013298432, US2013255667, US2013175420, US2013068924, US2013051927, US2013000245, US2012324813, US2012124924, US2012096786, US2012070233, US2012014755, US2011297057, US2011278752, US2011253877, US2011154644, US2011131899, US2011120028, US2011044766, US2011041438, US2011027100, US2010300018, US2010269437, US2010247245, US2010146890, US2010095603, US2010019503, US2009266016, US2009235597, US2008302038, US2008236075, US2008152496, US2008008539, US2005072067, JP5787669, JP2013044204, FR2874223, ES2400902, EP2242885, EP2242885, EP2192238, EP2108836, EP1767705, CN106545027, CN106544952, CN105569067, CN105421476, CN104294838, CN104278691, CN104278690, CN104278690, CN104110353, CN104011297, CN103774688, CN103774687, CN103061409, CN102995651, CN102995635, CN102767190, CN102561378, CN102535496, CN102383439, CN102383439, CN102162258, AU2012358561, AU2009319068,

Abstract:
Source: US2004131428A A circular concrete cap foundation poured in−situ within a perimeter forming corrugated metal pipe set atop or within an excavated pit and enclosing a series of circumferentially spaced pile anchors. The circular concrete cap foundation supports sets of inner and outer circumferentially spaced tower anchor bolts having their lower ends anchored to an embedded anchor ring and their upper ends projecting vertically and upwardly out the top of the circular foundation to engage the base flange of a supported tower. The pile anchors are formed with perimeter corrugated metal pipes set deep in subsurface soils with cementitious material surrounding and partially bonding to a centralized steel bolt or tendon which extends through the cap foundation. The tower anchor bolts and the pile anchor bolts are both partially encased in a PVC sleeve so that the bolts can be post−tensioned. The pile anchors are in tension only and serve to pull the cap foundation down to compress the underlying ground soils.

0) US2011061336A – BUILDING SYSTEM, CONCRETE OR OSB, POUR MOLDED O...

54) Family number: 48463899 (US2011061336A) © PatBase

Title: BUILDING SYSTEM, CONCRETE OR OSB, POUR MOLDED OR PRESSED MOLDED, COMPOSITE PANELS, TRUSSES, AND PRODUCTS, WITH ENGINEERING METHODS AND FASTENERS, AND RELATED TRANSPORTATION, ERECTION, AND MATERIALS PROCESSING EQUIPMENT

Priority: US20090157328P 20090304 US20100717492 20100304

Family:

Publication number	Publication date	Application number	Application date
US2011061336 AA	20110317	US20100717492	20100304

Probable Assignee: THOMAS MICHAEL ROBERT

Assignee(s):(std)**:** THOMAS MICHAEL ROBERT

Inventor(s):(std)**:** THOMAS MICHAEL ROBERT

International class (IPC 8–9)**:** E04B1/00 (Advanced/Invention)

CPC: B66C23/342 E04B1/04 E04B1/10 E04B1/14 E04B1/34336 E04B5/043 E04B7/026 E04B2001/34389 E04C3/205 E04G21/16

European class: B66C23/34B E04B1/04 E04B1/10 E04B1/14 E04B1/343D E04B5/04H E04B7/02C E04C3/20B E04G21/16 P04B1/343P

US class: 52/745.19 52/745.190P

Classification Explorer

Forward Citations: WO14099735, US9630816, US9382703, US8661757, US2017035200, US2012240504,

Abstract:
Source: US2011061336A Franchised Building Construction System including Factory Concrete Yard or Site Built Semi Trucked Poured or Pressed Gang Molded Components made of Insulated Pumice and/or Styrofoam and/or Fiberglass Concrete or OSB Compositions, Trusses, Floor, Ceiling, and Wall Panels, 4 to 10 ft. Wide by 2 to 80 ft. Long, also New Component Connecting Fasteners, also Concrete and Asphalt Roofing Materials, Rolls and Sections, Poured or Pressed Composite Mobile Homes, Single and Double Wide, also Dimensional Building Materials including Flooring, Siding, and Framing, also Poured or Pressed Sheds, Doors, Windows, Furniture and Cabinets, also related Equipment including a Wire Pulling Rack System, Gantry Crane Mounted on a Truck, Rail Car, or Semi Trailer, with Telescoping Mast and Boom, Elevating Boom, Hydraulic Stabilizers, Pumice Concrete Composite Mixtures and Usages, also a Crane for Rolled Roofing Material Delivery and one for Tree Service and Selective Cut Cellulosic Building Materials Harvesting.

0) US2011113707A – METHOD AND SYSTEM OF BUILDING AN ICF RESIDENCE ...

55) Family number: 48909433 (US2011113707A) © PatBase

Title: METHOD AND SYSTEM OF BUILDING AN ICF RESIDENCE

Priority: US20090618900 20091116 WO2010US56307 20101111

Family:

Publication number	Publication date	Application number	Application date
CA2818412 AA	20130516	CA20102818412	20101111
US2011113707 AA	20110519	US20090618900	20091116
US8359808 BB	20130129	US20090618900	20091116
WO11060118 A2	20110519	WO2010US56307	20101111
WO11060118 A3	20120823	WO2010US56307	20101111

Probable Assignee: SOLID GREEN SOLUTIONS LLC

Assignee(s):(std)**:** IGLOO PANELS LLC ; SOLID GREEN DEVELOPMENTS LLC ; STEPHENS ROY ; SOLID GREEN SYSTEMS LLC ; STEPHENS JR ROY DEAN

Assignee(s): SOLID GREEN SOLUTIONS LLC ; SOLID GREEN DEVELOPMENT LLC

Inventor(s):(std)**:** STEPHENS JR ROY DEAN ; STEPHENS ROY

Agent(s): KIRBY EADES GALE BAKER; HULSEY PC; WILLIAM N; LOREN T; SMITH LOREN T

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B65D59/06 E04B1/00 E04B1/16 E04B2/86 E04C2/52 (Advanced/Invention)

CPC: E04B1/165 E04B2/8629 E04B2002/867 E04B2002/8688 E04C1/397 E04C2/205 E04C2/521 E04G21/185 E04G21/26

European class: E04B1/16D E04C1/39C E04C2/20B E04C2/52A E04G21/18C2 E04G21/26 P04B2/86F1 P04B2/86P P04B2/86S

US class: 52/220.2 52/220.200P 52/274 52/274S 52/300 52/300S 52/309.12 52/432 52/439 52/742.14 52/745.05 52/745.050S

Classification Explorer

Cited documents: US7198159 BB, US6438917 BB, US6401413 BA, US6119432 A, US5765330 A, US5697189 A, US5570552 A, US5465542 A, US5404685 A, US4924641 A, US4823534 A, US4038798 A, US2008104912 AA, EP1544368 A1,

Forward Citations: WO15140715, WO14167286, WO14133989, WO14133989, US9493940, US9428901, US9382709, US9238910, US9182133, US9151053, US9038339, US9027307, US8978325, US8978324, US8950132, US8863445, US8844223, US2015204067, US2015101263, US2015093535, US2014237910, US2014033627, US2013133277, US2012233936, US2012060438, GB2505894, CN102912865,

Abstract:
Source: US2011113707A The present invention uses insulating concrete forms (ICF) in the construction of residential buildings. An entire wall panel is formed from polystyrene panels that may be cut by a hot wire machine. If necessary, hat channel shaped metal may be inserted into hat channel slots. Columns of polystyrene are removed so that concrete posts may be poured therein after the wall panel has been secured into place with rebar being located therein. Rebar and concrete also are formed along the top of the wall panel. Electrical and plumbing connection pathways are provided in the wall panel at the time of cutting with hot wire. Each wall panel is separately designed and cut by hot wire while still at the factory, but are all connected together to form an ICF residence. Openings are provided for doors and windows and are buck framed. Hat channels are inserted as necessary for strength and/or connection thereto.

0) IN00890DE2014A – CONSTRCTION – INSTANT AND ECONOMICAL BY MECHANI...

56) Family number: 60499474 (IN00890DE2014A) © PatBase

Title:	CONSTRCTION – INSTANT AND ECONOMICAL BY MECHANIZATION/USE OF NEW JIGS AND FIXTURES REQUIRING SHUTTERING/NO SHUTTERING AT ALL
Priority:	IN2014DE00890 20140328

Family:

Publication number	Publication date	Application number	Application date
IN00890DE2014 A	20151002	IN2014DE00890	20140328

Probable Assignee:	SURESH CHAWLA
Assignee(s):(std):	SURESH CHAWLA
Inventor(s):(std):	SURESH CHAWLA
International class (IPC 8–9):	B05B (Advanced/Invention); B05B (Subclass/Invention)

Classification Explorer

Abstract:
Source: IN00890DE2014A 1. This invention of 'Constructions–instant and economical by mechanization/ use of new jigs and fixtures– requiring siiuttering/no sliuttering at ail' relates to construction of civil structures– buildings, flyovers and bridges etc at lower cost and in shortest possible time frame with higher efficiency as compared to present systems of constructions. The reinforcement binding can be economized by introducing rings for columns and beams over central pole/pipe. The rings can be welded over slip pipe pieces which can be slipped over the pipes to build columns and beams in very short time. The rings can have U shaped pieces or spacers, pre –welded/pre fixed to rings at appropriate locations to receive the reinforcement bars for tying to it. The shuttering for columns can be bound after fixing spacers made out of steel bars welded on outer surfaces of rings for providing gap and cap over the rings. The shuttering made in modules can be tied together by nut and bolts fixed on rings or by pipe spacers having another pipe of smaller diameter slipped in to the spacers pipe of larger length with grooves. The inner pipes can be pierced through the shuttering boards for driving the wedges in to grooves to keep the shuttering boards tight to introduce cement concrete mixture. The reinforcement of walls can again be built in short time if vertical pipes with holes at appropriate heights are placed at appropriate locations. The horizontal pipes are fixed to vertical pipes at appropriate heights as per design requirements –to form a grid of the center line of walls or civil structure. The horizontal pipes are further fixed to central pole or pipe of vertical columns. The binding of walls and columns thus form center line of the structure and an internal infrastructure of the building or civil structure. Once the center line shell is ready, slip pipes with holes having spacers as per width of the walls – attached to it can be introduced over the vertical pipes. Wedges can be fixed in holes of slip pipe pieces and the vertical pipes to form internal infrastructure for shuttering boards to rest on the spacers at appropriate spacing to form boxes for introduction of cement concrete mix. The shuttering boards etc can be held together by use of more spacers other than the spacers used in pipe pieces. The same system of pipe spacer can be used for columns, beams and other structures. The central infrastructure or pipe grid can have pre–designed reinforcement tied to it in center or on sides or welded mesh tied to it for reinforcement requirements for reinforced cement concrete (RCC) walls. Even insulation boards etc can be fixed on one side or both sides of reinforcement. The external boards and internal boards can be fixed to central infrastructure in turns. The internal board can be fixed first with hooks / steel wires etc or magnets to receive all services fixed to its internal side facing internal pipe infrastructure as per the designs. To fix all services the support of the space in between the board and reinforcement bars or welded mesh can be taken for proper placement of services in required locations. The roof can be self supporting by use of tee sections /other sections of steel– placed at appropriate locations on vertical pipes of walls as per design requirements with rectangular /round bars welded to it on extruding side of tee. The grid so formed can be placed with flat side of tee on top and round bars/square bars at the bottom of T section. The grid can be placed on the walls infrastructure. The square or rectangular bars can have welded mesh with least spaces in between the wires of the welded mesh. The welded mesh can be fixed by welding etc. to round or square boards from bottom to receive the cement concrete mix for roofing. The spaces in closely built welded mesh can be filled first by cement mixture or m by other methods. Roofs can also be built by first pouring cement concrete mix in walls, once walls are ready in twelve hours or so, holes can be provided at top of walls while casting the walls for pipes and steel structure to extrude out of walls for external scaffolding and to rest shuttering on pipes or steel structure placed in between the holes in the walls at the top. Usual reinforcement can be placed with services for pouring cement concrete mix and to wait till the roof is solid enough for pipes, steel structure and shuttering to be removed from top of walls of each floor while other activities carry on as usual. Doors and windows duly painted with frames and all fittings can also be fixed to internal infrastructure while pouring cement concrete mix itself by welding steel sheet frames/ aluminum sheet frames of the size of doors and windows with the width of the sheets exceeding the width of doors and windows frames but not more than the size of the walls to seal the area in between width of door /window frames and shuttering area – where cement concrete mix has to be introduced. Stone slabs can also be fixed in between door window frames and walls to be casted. The external cladding and tiles can be fixed to internal infrastructure at required locations by forming frames out of angle or tee section placed at appropriate spacing's both ways having welded mesh of appropriate size –welded

to frame. The frame so formed can be placed in horizontal plane to place all the tiles/stone pieces as per design on the welded mesh. Once all the tiles/ stone pieces are placed neck to neck, another frame of same sizes and design can be placed on the first frame. Both frames can be held tight by nut bolts/screwing together from top and sides through extruded pieces, having holes– welded to frames. The internal frame with tiles/stone pieces can be fixed at required location of the buildings.The tiles/stone pieces can act as shuttering for cement concrete mix. The internal frame can also have hold fasts going inside the internal infrastructure. Once cement concrete is introduced the tiles/stone pieces in touch with the cement concrete mix get fixed permanently after 12 hours or so along with internal frame. After setting of cement, the external frame can be removed by unscrewing or removing nut bolts. For raft foundations, modules of cubicle's in structural steel with rectangular top or square top with height as per the design required can be prebuilt in work shops with reinforcement bound in place by welding or through u shaped pieces placed at appropriate locations as per the designs, the reinforcement bars can extrude in all directions in horizontal plane. The modules can be joined by nut bolts to form a flat foundation structure and the extruding bars can also be tied together, the columns in steel structure having reinforcement prebuilt in it can be placed and tied to the flat surface with bent reinforcement bars at bottom as per the requirements of the design. For rapid road constructions, frames of channels / other sections / flats of appropriate size in width can be manufactured as per contour of the road in modules with nut bolts etc extruding out of frames for binding together the modules in length and breadth. The frames can have single layer or multiple layers of reinforcement tied to it through holes provided in the frames for expansion or welded to frames as per the requirements of the design. The modules can be placed on the flat surface of earth created before laying the modules. Once each module is placed, cement concrete mix can be introduced in the frame by manual labor or through the pumps mounted on trucks to create flat surface of road on top. For roads in hills, flat sections of steel can be used for sides of road to form the contour easily by bending the flats as per the site condition and welding the reinforcement to repeat the process of pouring cement concrete mix. For flyover, bridges and other structures for elevated railway transport etc. the \< ORIGIN/I VV ' columns can be created using methodology orcolumns for buildings while beams of the flyover, bridges and other structures can have self supporting /self loading steel structures, created as per the design of the bridge or flyover in modules or in single piece with the reinforcement prefixed in the self supporting structure to receive the cement concrete mix. The self supporting structures can have shuttering used for walls or columns etc. For footings foundations, the foundations can be prebuilt in steel sections with reinforcement bound as per the design provided for columns for buildings. The footing structure can be welded or fixed to columns of the building for quick constructions. The civil structures can also be built without the requirement of shuttering at all by welding welded mesh or by binding welded mesh on outer surfaces of structures where solid shuttering is required. The welded mesh can be welded or fixed on horizontal pipes fixed to spacers of the internal infrastructures. The welded mesh can be manufactured with very little spaces in between the wires. After the welded mesh has been fixed in outer surfaces the cement concrete mix can be introduced in the boxes formed by the welded mesh surrounding like the usual shuttering. Floating ports and floating RCC structures can be built in water bodies by using self supporting steel structures having reinforcement duly bound In it along with empty drums with air tight– closed lids placed in the structure at appropriate locations depending upon the structural designs to receive cement concrete mixture while outside of waters and pushing the structures in to the water after cement sets in or the exercise can happen on barges in water itself. Floor tiles/stone slabs can also be fixed like wall tiles except that the modules of upper frames and lower frames containing tiles /stones slabs can be horizontal and frames containing floor tiles /stone slab frames can be laid on cement concrete mix pre–laid before lowering the frames. Segmented R.C.C. poles can be manufactured usin

0) WO14043826A1 – SYSTEM AND METHOD FOR BEAM–COLUMN CONNECTION S...

57) Family number: 56086377 (WO14043826A1) © PatBase

Title: SYSTEM AND METHOD FOR BEAM–COLUMN CONNECTION

Priority: CL20120002623 20120921 WO2013CL00067 20130917

Family:

Publication number	Publication date	Application number	Application date
CL2012002623 A1	20130830	CL20120002623	20120921
CL52869 B	20160805	CL20120002623	20120921
CO7620734 A2	20160531	CO20150087673	20150420
MX2015003674 A1	20160114	MX20150003674	20130917
PE11062015 A1	20150821	PE20150000391	20130917
WO14043826 A1	20140327	WO2013CL00067	20130917

Probable Assignee: SOLUCIONES INTEGRALES DE REDUCCION DE VIBRACIONES

Assignee(s):(std)**:** SOLUCIONES INTEGRALES DE REDUCCION DE VIBRACIONES ; SOLUCIONES INTEGRALES DE REDUCCION DE VIBRACIONES S A

Assignee(s): SOLUCIONES INTEGRALES DE REDUCCION DE VIBRACIONESSA

Inventor(s):(std)**:** RENDEL MICHAEL ; LUDERS CARL ; IZQUIERDO EDUARDO ; CANTILLANO FELIPE ; ALVAREZ MARIO

Inventor(s): CARL LUDERS ; EDUARDO IZQUIERDO ; FELIPE CANTILLANO ; MARIO ALVAREZ ; MICHAEL RENDEL

Agent(s): ESTUDIO CAREY; JUAN PABLO CADENA SARMIENTO; CAREY CARVALLO FRANCISCO ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/21 E04B1/58 (Advanced/Invention)

CPC: E04B1/215

Classification Explorer

Cited documents: US2010071315 AA, JP3125735 A2, JP2010203184 A2, GB847298 A, GB2149874 A1, GB1025614 A, EP1905909 A2, DE3305128 A1, DE19952594 A1,

Forward Citations: ES2514117, CN104005476, CN104005475, CN104005475,

Abstract:
The invention relates to a system and a method for connection between beams (3) and columns (2), that allows the transmission of forces therebetween, where the beam (3) and the column (2) have a steel frame and a concrete body. The connection system includes a permanent console (1) formed by at least one metal plate, partially inserted into the column (2), anchored thereto and extending outside same in order to act as a support for the beam (3). Various alternatives are provided for fixing the beam (3), including welding, pins and journals. In this way, a beam (3) and a column (2) are able to be joined in such a way that the connection allows the loads of the beam to be effectively transferred to the column (forces and moments). The invention also enables rapid and simple assembly, in addition to the creation of the connection between the elements.

0) US6017597A – COMPLEX CELL STRUCTURE AND METHOD FOR PRODUCING...

58) Family number: 8689262 (US6017597A) © PatBase

Title: COMPLEX CELL STRUCTURE AND METHOD FOR PRODUCING THE SAME

Priority: WO1995JP00108 19950127

Family:

Publication number	Publication date	Application number	Application date
AU199514673 A1	19960814	AU19950014673	19950127
EP0807783 A1	19971119	EP19950906537	19950127
EP0807783 A4	20000823	EP19950906537	19950127
US6017597 A	20000125	US19970849235	19970605
WO9623163 A1	19960801	WO1995JP00108	19950127

Probable Assignee: MINAKAMI HIROYUKI

Assignee(s):(std)**:** HIROYUKI MINAKAMI ; MINAKAMI HIROYUKI ; MINAKAMI MOTOYUKI

Inventor(s):(std)**:** MINAKAMI HIROYUKI ; MINAKAMI MOTOYUKI

Inventor(s): MOTOYUKI MINAKAMI ; HIROYUKI MINAKAMI

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD

Designated states: AT AU BE CA CH CN DE DK ES FR GB GR IE IT JP KR LU MC NL PT SE US

International class (IPC 8–9): E04C2/36 (Advanced/Invention); E04C2/34 (Core/Invention)

International class (IPC 1–7): B32B3/12 B32B5/18 E04C2/36 E04C3/34 F16S1/00

CPC: Y10T156/1002 Y10T156/1084 Y10T428/131 Y10T428/1317 Y10T428/1321 Y10T428/1393 Y10T428/24157 Y10T428/24165 Y10T428/24628 Y10T428/24661 Y10T428/24744 E04C2/36

European class: E04C2/36

US class: 156/196 156/269 156/290 156/291 156/78 428/117 428/118 428/174 428/178 428/188 428/34.4 428/34.6 428/34.7 428/344 428/346 428/347 428/36.91 52/414 52/576 52/723.1 52/737.4 52/742.14

Classification Explorer

Cited documents: WO9520486 A1, US5779579 A, US5615528 A, US5599606 A, US5526625 A, US5505030 A, US4937125 A, US4875622 A, US4495237 A, US4068429 A, US3538668 A, US3388509 A, US3016315 A, JP59078417 U1, JP59078417 U, JP57114774 U1, JP57114774 U, JP51011641 B4, JP51011641 B2, JP48016040 U, JP1188798 A2, FR1262049 A,

Forward Citations: WO09014808, USD674639, USD549934, USD465337, US9604428, US9540806, US9499986, US9394696, US9359766, US9091049, US9050766, US8635822, US8615945, US8534018, US8490355, US8065854, US7919174, US7743573, US7066032, US6241229, US2015276354, US2015233121, US2015082722, US2012285116, US2012047844, US2012047839, US2009022962, US2009020216, US2004200292, EP1398143, CN103572867,

Abstract:
Source: US6017597A PCT No. PCT/JP95/00108 Sec. 371 Date Aug. 5, 1997 Sec. 102(e) Date Aug. 5, 1997 PCT Filed Jan. 27, 1995 PCT Pub. No. WO96/23163 PCT Pub. Date Aug. 1, 1996The objectives of the invention is to obtain the complex cell structured material which has the advantages of toughness and of being light in weight. Also it is economical when utilized in the field of the general structural materials such as architecture, civil engineering, machinery structure field, automobiles, ships, cars, aircrafts, space crafts, space stations, submarines. The manufacturing of this invention also consists of simple procedures. A complex cell structure is comprised of a maintained spatial surface on which is the complex cell bodies are bonded. The complex cell bodies are distributed/bonded on the maintained spatial surface. The maintained spatial surface is rolled, annual ring shaped, whirlpooled, laminated, plate shaped or crossed. The liquid coagulant fills the empty space. The coagulant is coagulated to produce the complex cell structure. Also, the method to produce is as follows. Prepared complex cell bodies are composed of rigid sections and a light material. They are then processed to a preordained shape. They are distributed/bonded on the maintained spatial surface. The liquid coagulant fills the empty space. When the coagulant hardens, the process is complete.

0) US3562978A – BUILDING CONSTRUCTION

59) Family number: 943083 (US3562978A) © PatBase

Title: BUILDING CONSTRUCTION

Priority: GB19650006705 19650216 US19670677195 19671023 US19680808033 19681216

Family:

Publication number	Publication date	Application number	Application date
FR1587040 A	19700306		19681023
GB1150871 A	19690507	GB19650006705	19650216
GB1239800 A	19710721	GB19680042120	19680904
JP49028366 B4	19740725	JP19680076817	19681023
NL6815106 A	19690425	NL19680015106	19681023
US3562978 A	19710216		19681010
US3562979 A	19710216	US19680808033	19681216

Probable Assignee: COMPONOFORM INC

Assignee(s):(std)**:** COMPONOFORM INC

Inventor(s):(std)**:** ALI OGLU EWGENI

Inventor(s): EWGENI ALI OGLU

International class (IPC 8–9)**:** E04B1/20 E04B1/21 E04B1/34 E04C3/34 E04G15/06 (Advanced/Invention); E04B1/20 E04B1/34 E04C3/30 E04G15/00 (Core/Invention)

International class (IPC 1–7)**:** C09K11/08 C09K11/46 C09K11/465 C09K11/475 E04B1/04 E04B1/18 E04B1/20 E04B1/34 E04B1/56 E04B1/58 E04B1/60 E04B5/04 E04C1/10 E04C2/38 E04C2/50 E04C3/34 E04C3/44 E04G11/18 E04G15/06 H01J29/20

CPC: Y10S249/02 E04B1/34 E04B1/215 E04G15/06 E04G9/021 E04G9/083

European class: E04B1/21B E04B1/34 E04G15/06

US class: 249/DIG.2 52/125 52/125.4 52/125.5 52/126.3 52/236.8 52/236.9 52/242 52/252 52/253 52/259 52/263 52/281 52/577 52/583.1 52/723.1 52/724.5 52/726.1 52/779 52/834 52/848 521/220 521/250

Classification Explorer

Forward Citations: WO8808061, WO8804711, USRE33220, US9540775, US8572788, US8295035, US7874110, US7661231, US7243898, US7131239, US6192636, US5809712, US5657597, US5177924, US4685267, US4685264, US4646495, US4605336, US4422997, US4196557, US4104844, US4099360, US4073102, US4059931, US4050213, US4024688, US4024687, US3948008, US3927499, US3916590, US3867805, US3855744, US3846952, US3818660, US3783565, US3735544, US3722159, US3683578, US3659388, US2011271636, US2011102974, US2009301011, US2009151298, US2005173613, US2004068944, US2003188496, US2003154674, FR2446899, ES2148069, EP0014131, DE2636168, DE2348943, CN104057189, AU611383,

Abstract:
Source: US3562978A ABSTRACT OF THE DISCLOSURE A building construction comprising modular cross arm columns, floor slabs, building slabs and related structures is provided. The wall panels which may be used as interior wall panels have at least one side edge carrying an elongated fastening means for interlocking with an edge of an adjacent wall panel and for preventing movement of such interlocked panels directly away from each other while permitting sliding of said panels along a line fixed with respect to each other and substantially parallel to the one side edge. The fastening means comprises hook means for positively preventing movement of two interlocked panels directly away from each other without first destroying the hook means. This application is a continuation in part of U.S. patent application Ser. No. 527,450 filed Feb. 15, 1966 and now abandoned.

0) US2006165489A – STRUCTURE OF INTERMEDIATE WALL OF THREE ARCH EX...

60) Family number: 30649541 (US2006165489A) © PatBase

Title: STRUCTURE OF INTERMEDIATE WALL OF THREE ARCH EXCAVATED TUNNEL AND METHOD FOR CONSTRUCTING THE SAME

Priority: KR20020073221 20021122 WO2003KR02456 20031114

Family:

Publication number	Publication date	Application number	Application date
AU2003282404 AA	20040618	AU20030282404	20031114
CN1714227 A	20051228	CN200380103881	20031114
KR100438794 B1	20040707	KR20020073221	20021122
KR20040027252 A	20040401	KR20020073221	20021122
US2006165489 AA	20060727	US20030534521	20031114
US7530765 BB	20090512	US20030534521	20031114
WO04048754 A1	20040610	WO2003KR02456	20031114

Probable Assignee: DONG HYUNG SEO

Assignee(s):(std): HYUN ENGINEERING AND CONSTRUCT ; YUN SEOK RYUL ; SEO DONG HYUN ; KWON OH HYUN ; HYUNEIANCI CO LTD ; SEO DONG HYUNG ; DONG HYUN SEO

Assignee(s): DONG HYUNG SEO ; HYUN ENGINEERING AND CONSTRUCTION CO ; HYUN ENGINEERING AND CONSTRUCTION CO LTD ; HYUNEIANCI CO

Inventor(s):(std): DONG HYUN SEO ; KWON O HYEON ; KWON OH HYUN ; OH HYUN KWON ; OH HYUN YUN SEOK RYUL SEO DONG ; SEO DONG HYUN ; SEO DONG HYUNG ; SEOK RYUL YUN ; YOON SEOK RYEOL ; YUN SEOK RYUL

Inventor(s): YUN SEOK RYUL SEO DONG HYUN KWON OH HYUN

Agent(s): R GLENN SCHROEDER, HOFFMANN AND BARON; R GLENN SCHROEDER HOFFMANN AND BARON; HOFFMAN AND BARON LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E21D11/00 E21D11/38 E21D9/00 E21D9/14 E21F16/02 (Advanced/Invention); E21D9/00 (Advanced/Non–invention)

International class (IPC 1–7): E21D9/00

CPC: E21D9/14 E21D9/006 E21D11/38 E21F16/02

European class: E21D11/38 E21D9/00F E21D9/14 E21F16/02

US class: 264/32 405/150.1 405/150.100P

Classification Explorer

Cited documents: US6991402 BB, KR200252974 Y1, KR200252974, KR100390303 B1, JP64052999 A2, JP2002322898 A2, JP2002266598 A2,

Forward Citations: KR101163607, KR100784937, KR100701633, KR100701630, CN104791007, CN104791007, CN104632277, CN104061000, CN104061000, CN104060999, CN103758530, CN103615266, CN103498685, CN103498685, CN102606167, CN102518439, CN102296969, CN102296969, CN102296968, CN102094654,

Abstract:
Source: US2006165489A Disclosed are a structure of an intermediate wall of a three arch excavated tunnel, which effectively exhausts subterranean water from a peripheral ground, and a method for constructing the tunnel. The method comprising the steps of: (a) excavating an upper portion of a central tunnel 10; (b) excavating a lower portion of the central tunnel 10; (c) forming an intermediate wall 20 and grouting a gap formed in the intermediate wall 20; (d) excavating an upper portion of a left main tunnel 30; (e) excavating an upper portion of a right main tunnel 40; (f) excavating a lower portion of the left main tunnel 30; (g) excavating a lower portion of the right main tunnel 40; and (h) installing a drain board 50 and a waterproof layer 60 and casting lining concrete 70 therein so

that the tunnel is easily drained through drain pipes 65 and residual water pressure is eliminated.

0) US3692446A – APPARATUS FOR FORMING AND LIFTING MULTI–STORY C...

61) Family number: 18099309 (US3692446A) © PatBase

Title: APPARATUS FOR FORMING AND LIFTING MULTI–STORY COLUMNS IN ONE STORY INCREMENTS

Priority: US19710114455 19710211 US19720261685 19720612 US19740439945 19740205 US19720279053 19720809

Family:

Publication number	Publication date	Application number	Application date
CA970122 A1	19750701	CA19730163617	19730213
DE2249166 A1	19740221	DE19722249166	19721006
FR2195736 A1	19740308	FR19720035621	19721006
FR2195736 B1	19760820	FR19720035621	19721006
GB1388500 A	19750326	GB19720046204	19721006
JP49045540 A2	19740501	JP19720100569	19721006
NL7213597 A	19740212	NL19720013597	19721006
US3692446 A	19720919	US19710114455	19710211
US3828513 A	19740813	US19720261685	19720612
US3831902 A	19740827	US19720279053	19720809
US3920780 A	19751118	US19740439945	19740205

Probable Assignee: RESEARCH CORP

Assignee(s):(std)**:** RESEARCH CORP ; RESEARCH CORP US

Assignee(s): VANDERKLAAUW PETER M ; RESEARCH CORP NEW YORK N Y V ST A ; RES CORP US

Inventor(s):(std)**:** VANDERKLAAUW PETER MARTIN ; VANDERKLAAUW PETER M ; VANDERKLAAUW P

Inventor(s): PETER M VANDERKLAAUW ; VANDERKLAAUW P US ; VANDERKLAAUW PETER MARTIN MIAMI FLA V ST A

International class (IPC 8–9): E04B1/35 E04B1/36 E04G13/02 E04H1/04 (Advanced/Invention); E04B1/35 E04B1/36 E04G13/00 E04H1/04 (Core/Invention)

International class (IPC 1–7): B66F1/00 E04B1/00 E04B1/16 E04B1/35 E04G13/02

CPC: E04B1/3511 E04G13/02 E04B1/3505

European class: E04B1/35A E04B1/35B E04G13/02

US class: 254/105 264/33 264/34 425/63 52/123.1 52/745 52/745.04

Classification Explorer

Cited documents: US3692446 A, US3416284 A, US3201502 A, US3201088 A, US3154292 A, US3112836 A, GB613403 A,

Forward Citations: WO10115350, WO07102773, US9677298, US9670038, US9637361, US9631436, US9562367, US9556636, US9458675, US9416595, US9290903, US9279267, US9133643, US8997435, US8935901, US8925257, US8863474, US8578679, US8555599, US8555564, US8544238, US8544227, US7632437, US6425712, US6379085, US5980160, US5575591, US5509502, US5423158, US4472331, US4301630, US4228114, US4058952, US3793702, US2015204091, US2015176338, US2015135632, US2015107165, US2015075813, US2014345209, US2014262519, US2013318890, US2013283726, US2012304553, US2012023840, US2011289862, US2010326734, US2010281818, US2009235609, US2009188204, US2009169339, US2007101673, ITVI20100167, GB2284847, FR2547291, FR2195736, EP0866189, CN105297635, CN105297635, CN103015713, CN103015713,

Abstract:
Source: US3692446A The basic supporting framework of reinforced concrete slabs and columns for a multi–story building is formed in a roof down fashion and erected in a continuous lifting process from the foundation level. Auxiliary column sections, which retain molding formworks for the columns and are supportingly tied to the formed

concrete columns, support the load of the building, until the concrete at the bottom hardens, by bearing on adjustable bearing platforms at the foundation. Lifting devices at the foundation cooperate with the supporting auxiliary column sections to push the building up after each floor is built. The lifting devices raise the auxiliary columns off the cooperating adjustable bearing platforms to permit the insertion under and attachment to the auxiliary column assemblies of a further auxiliary column section with the lifting devices operating in step−by−step alternation with support of the auxiliary column assembly on the bearing platforms until the building is raised to the desired height for a new floor at which time a reinforcement cage for a new permanent concrete column to be poured is fixedly inserted in the newly created space within the auxiliary column and attached to the preceding column.

0) DE19808328A1 – CIVIL ENGINEERING COMPLEX FOR WATER POWER GENER...

62) Family number: 30271173 (DE19808328A1) © PatBase

Title: Civil engineering complex for water power generation incorporating buildings and water treatment

Priority: DE19981008328 19980227 DE19981057246 19981211 DE19981059275 19981222
DE19991000547 19990102 DE19991000960 19990109 DE19991004412 19990120
DE19991023322 19990521 DE19991030820 19990703 DE19991004642 19990205

Family:

Publication number	Publication date	Application number	Application date
DE19808328 A1	19990902	DE19981008328	19980227
DE19857246 A1	20000615	DE19981057246	19981211
DE19859275 A1	20000629	DE19981059275	19981222
DE19900547 A1	20000706	DE19991000547	19990102
DE19900960 A1	20000713	DE19991000960	19990109
DE19904412 A1	20000803	DE19991004412	19990120
DE19904642 A1	20000810	DE19991004642	19990205
DE19923322 A1	20001123	DE19991023322	19990521
DE19930820 A1	20010104	DE19991030820	19990703

Probable Assignee: SCHLEICH

Assignee(s):(std)**:** SCHLEICH ; SCHLEICH JOSEF

Inventor(s):(std)**:** SCHLEICH JOSEF

International class (IPC 8–9)**:** E02B8/02 E02B9/00 F03B13/08 (Advanced/Invention); C02F3/04 (Advanced/Non–invention); E02B8/00 E02B9/00 F03B13/00 (Core/Invention); C02F3/04 (Core/Non–invention)

International class (IPC 1–7)**:** E02B9/00 F03B13/08

CPC: E02B9/00 Y02W10/15 F03B13/08 C02F3/04 E02B8/02 E02B8/023 E02B8/026 Y02E10/22

European class: E02B8/02 E02B8/02B E02B8/02B2 E02B9/00 F03B13/08 M02F3/04 Y02E10/22

Classification Explorer

Forward Citations: WO03054386, WO02055884, WO0125626, US9163421, US8092675, US7083377, US6798080, EP2420669, EP2420669, EP1980669, EP1923510, EP1466089, DE102013009099, CN102777310, CN102776873, AU2002366862,

Abstract:
Source: DE19808328A1 Numerous constructional features include an earth–covered turbine hall (1), a spillway (3) with split control gates without superstructure and fixed dams (22) with planted–up stone ramps (5). The river bed (25) is widened (24) and single span bridges (14) and access points (6, 7) are constructed of pre–formed concrete or steel and synthetic stone. Special office and residential buildings (15, 16), purification plants (17, 18, 19) and silos (15a) are included. Various forms of submerged spillway gates (3) using curved vanes are described. The turbine inlet grating is a series of horizontal cables. The power turbine (1) can be of curved vane construction or use the bucket elevator principle. A further alternative shown is a flexible inflatable water wheel. Building and bridge construction uses shaped hollow concrete blocks and curved sheet steel. The power generated is used locally in the buildings (15, 16) and sewage is purified (17, 18, 19) and returned (20) to the stream.

0) US4696137A – BEAM–COLUMN JUNCTION

63) Family number: 2872985 (US4696137A) © PatBase

Title: Beam–column junction

Priority: CA19860500891 19860131 EP19860100499 19860116 LU19850085753 19850201

Family:

Publication number	Publication date	Application number	Application date
AT68228 E	19911015	AT19860100499T	19860116
CA1273811 A1	19900911	CA19860500891	19860131
DE3681800 D1	19911114	DE19863681800	19860116
EP0189785 A2	19860806	EP19860100499	19860116
EP0189785 A3	19890322	EP19860100499	19860116
EP0189785 B1	19911009	EP19860100499	19860116
LU85753 A	19860902	LU19850085753	19850201
US4696137 A	19870929	US19860823598	19860129

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** SCHLEICH JEAN BAPTISTE

Inventor(s): SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class(IPC 8–9)**:** E04B1/18 E04B1/24 E04C3/293 E04C3/34 (Advanced/Invention); E04B1/24 E04C3/29 E04C3/30 (Core/Invention)

International class(IPC 1–7)**:** E04B1/00 E04B1/18 E04B1/24 E04C3/34

CPC: E04B1/2403 E04B2001/2415 E04B2001/2448 E04B2001/2469 E04B2001/2484 E04C3/293 E04C3/34

European class: E04B1/24B E04C3/293 E04C3/34 P04B1/24B4 P04B1/24B40 P04B1/24C2 P04B1/24E

US class: 52/251 52/334 52/702 52/733 52/737.2 52/838

Classification Explorer

Cited documents: US4409765 A, US1476572 A, FR1475696 A, EP0133565 A2, EP0123642 A2, DK39263 A, DE2829864 A1, DE2658020 B2, DE2658020 A1, DE2408134 A1, CA886291 A, AU86570 A1,

Forward Citations: WO12105858, WO0015920, US9206594, US8875475, US8782991, US8733033, US8555593, US8516761, US8166717, US6679017, US2011094182, US2010281808, US2010031605, US2010005732, US2009320387, US2005066609, US2004250484, JP63308131, EP0292449, EP0290884, CN103266720,

Abstract:
Source: US4696137A A beam support joint for a column and a beam, which are each constructed from concrete and at least one metal section having a pair of flanges joined by a web and forming at least one recess of the metal section which is filled with concrete and the outer surfaces of the flanges of the metal section are not covered with concrete and are otherwise free. An upper support strap is mounted on an upper flange of the beam, and is attached to the column and the beam. The upper support strap and the webs of both the beam and the column all lie substantially in the same plane. On a flange of the column a lower support plate is advantageously welded which has a width corresponding approximately to the flange of the column. This lower support plate has at least one recess on its upper side which suitably engages at leat one projection provided on a lower flange of the beam. Alternatively the lower support plate can be dispensed with and the upper support strap can be mounted on a cover plate provided on the column with at least one tight fitting screw.

0) US2002124930A – FLAT STRIP LAMELLA FOR REINFORCING BUILDING COM...

64) Family number: 28303707 (US2002124930A) © PatBase

Title: FLAT STRIP LAMELLA FOR REINFORCING BUILDING COMPONENTS AND METHOD FOR PLACING A FLAT STRIP LAMELLA ON A COMPONENT

Priority: DE19971033067 19970731 DE19985002160 19980715 WO1998EP04383 19980715

Family:

Publication number	Publication date	Application number	Application date
AT208852 E	20011115	AT19980941330T	19980715
AU199889752 A1	19990222	AU19980089752	19980715
AU738490 B2	20010920	AU19980089752	19980715
BRPI9811578 A	20000829	BR1998PI11578	19980715
CA2278650 AA	19990728	CA19982278650	19980715
CA2278650 C	20030121	CA19982278650	19980715
CN1127603 C	20031112	CN19988003602	19980715
CN1251152 A	20000419	CN19988003602	19980715
DE19733067 A1	19990204	DE19971033067	19970731
DE59802160 D1	20011220	DE19985002160	19980715
DK1000208 T3	20020225	DK19980941330T	19980715
EP1000208 A1	20000517	EP19980941330	19980715
EP1000208 B1	20011114	EP19980941330	19980715
ES2166612 T3	20020416	ES19980941330T	19980715
HK1024039 A1	20020510	HK20000103203	20000530
HU0004549 AB	20010428	HU20000004549	19980715
HU0004549 AC	20020128	HU20000004549	19980715
HU223369 B1	20040628	HU20000004549	19980715
IL134118 A0	20010430	IL19980134118	19980715
IL134118 A1	20030529	IL19980134118	19980715
JP2001512200 T2	20010821	JP20000505383T	19980715
KR100417892 B1	20040211	KR19997007053	19990805
KR20000070791 A	20001125	KR19997007053	19990805
NO314002 B1	20030113	NO19990004733	19990929
NO994733 A	19990929	NO19990004733	19990929
NO994733 A0	19990929	NO19990004733	19990929
NZ336978 A	20010831	NZ19980336978	19980715
PL335439 A1	20000425	PL19980335439	19980715
PT1000208 T	20020531	PT19980941330T	19980715
US2002124930 AA	20020912	US19990341747	19990716
WO9906651 A1	19990211	WO1998EP04383	19980715
WO9906651 C1	19990812	WO1998EP04383	19980715

Probable Assignee: SIKA SCHWEIZ AG

Assignee(s):(std)**:** SIKA AG ; SIKA SCHWEIZ AG ; STEINER WERNER ; BLEIBLER ALEXANDER ; SCHUEMPERLI ERNESTO

Assignee(s): SCHUMPERLI ERNESTO ; SIKA WAS KASPAR WINKLER AND CO AG ; SIKA VORM KASPAR WINKLER AND CO AG ; SIKA VORM KASPAR WINKLER AND CO SIKA CI DEVANT KASPAR WINKLER AND CO SIKA GIA KASPAR WINKLER AND CO AG SA ; SIKA VORMKASPAR WINKLER AND CO AG ; SIKA AG VORM KASPAR WINKLER AND CO (SIKA SA CI... ; SIKA AG VORM KASPAR WINKLER AND CO SIKA SA CI DEVANT KASPAR WINKLER AND CO SIKA SA GIA KASPAR WINKLER AND CO ; SIKA SCHWEIZ ZUERICH AG ; SIKA AG WAS KASPAR WINKLER AND CO ZUERICH CH.. ; SIKA AG WAS KASPAR WINKLER AND CO.. ; SIKA AG VORM KASPAR WINKLER AND CO ; SIKA AG VORMALS KASPAR WINKLER AND CO ZUERICH CH ; SIKA

	TECHNOLOGY AG ; SIKA AG VORMALS KASPAR WINKLER AND CO ; SIKA SCHWEIZ AG ZUERICH
Inventor(s):(std)	BLEIBLER ALEXANDER ; SCHUENPERLI ERNESTO ; SCHUMPERLI ERNESTO ; STEINER WERNER ; SCHUEMPERLI ERNESTO
Inventor(s):	SCHUEMPERLI ERNESTO WOLLERAU CH ; ALEXANDER BLEIBLER ; STEINER WERNER WINTERTHUR CH ; WERNER STEINER ; BLEIBLER ALEXANDER WINTERTHUR CH ; ERNESTO SCHUENPERLI ; ERNESTO SCHUMPERLI
Agent(s):	FB RICE; KIRBY EADES GALE BAKER; REINHOLD COHN AND PARTNERS; WOLFF BREGMAN AND GOLLER
Designated states:	AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW
International class (IPC 8–9):	E04G23/02 (Advanced/Invention); E04G23/02 (Advanced/Non–invention); E04G23/02 (Core/Invention)
International class (IPC 1–7):	B29C65/48 B29C70/02 B32B35/00 B32B7/12 E04B2/00 E04C5/02 E04F13/00 E04G E04G23/02 E04G23/04
CPC:	E04G23/0 Y10T156/103 E04G23/0218 E04G23/0225 E04G2023/0251 E04G2023/0259
European class:	E04G23/02C
US class:	156/161 156/213 156/71 52/746.1
Classification Explorer	
Cited documents:	WO9621785 A1, DE3843535 A1, DE3318901 C2, DE19634840 A1,
Forward Citations:	WO11092726, WO06039755, WO02095159, WO0204759, WO0151736, US9085898, US2014245695, US2002170651, KR100894492, JP2014206017, ITRM20100027, ITMI20131316, EP1481139, EP1437459, EP1437459, EP1331327, CN102121316, CN101929254,

Abstract:
Source: US2002124930A Flat strip lamella (10) for reinforcing load–bearing or load transferring building components e.g. concrete, wood, steel, natural stone or masonry. The flat strip lamella (10) has a composite structure consisting of a plurality of parallel aligned, bendable or flexible carrying fibers (26) and a binding matrix (28) joining the carrying fibers to each other and making them shear resistant. The lamella can be attached facewise to the surface of the building component to be reinforced, using adhesive (16). In order to be able to bend the flat strip lamella over corner edges of a building component, the binding matrix (28) consists of a thermoplastic synthetic material.

0) CA2144681A – INTEGRATED FORMWORKS COFFRAGES INAMOVIBLES

65) Family number: 9488633 (CA2144681A) © PatBase

Title: INTEGRATED FORMWORKS

Priority: CA19952144681 19950315

Family:

Publication number	Publication date	Application number	Application date
CA2144681 AA	19960916	CA19952144681	19950315

Probable Assignee: VAISMAN ARMAND

Assignee(s):(std)**:** VAISMAN ARMAND ; VAISMAN SIVAN

Inventor(s):(std)**:** VAISMAN ARMAND ; VAISMAN SIVAN

International class (IPC 8–9)**:** B28B1/00 B28B7/36 E04B1/16 E04B5/36 E04C3/20 E04C3/34 E04G11/00 E04G11/06 E04G13/02 E04G13/04 E04G15/02 E04G17/06 E04G9/10 (Advanced/Invention); E04B2/86 (Advanced/Non–invention); E04B1/16 E04B5/32 E04C3/20 E04C3/30 E04G11/00 E04G13/00 E04G15/00 E04G17/06 E04G9/10 (Core/Invention); E04B2/86 (Core/Non–invention)

International class (IPC 1–7)**:** B28B1/00 B28B7/36 E04G11/06

CPC: E04B1/161 E04B2/8647 E04B5/36 E04B2002/8688 E04C3/20 E04C3/34 E04G9/10 E04G11/00 E04G11/06 E04G13/02 E04G13/04 E04G15/02 E04G17/06

European class: E04B1/16A E04B5/36 E04C3/20 E04C3/34 E04G11/00 E04G11/06 E04G13/02 E04G13/04 E04G15/02 E04G17/06 E04G9/10 P04B2/86H P04B2/86S

Classification Explorer

Forward Citations: WO06082182, CN103938858, CN103938858, CN102409852,

Abstract:
Source: CA2144681A The present invention relates to the technology of making walls, ceilings, columns and other kinds of elements by using special form–works. In the existing technology the form works, made of wood, steel, aluminum etc., are placed and filled with concrete. Then the form–works are removed and the face of the concrete is finished, many disadvantages of these technologies may be eliminated by using the present invention that is a thin plate of concrete or other suitable materials. The plate has a finished face and may remain embedded in the concrete element.

0) WO9730235A1 – COMPOSITE–STRUCTURE BUILDING FRAMEWORK STRUCTU...

66) Family number: 8835691 (WO9730235A1) © PatBase

Title: COMPOSITE–STRUCTURE BUILDING FRAMEWORK

Priority: FI19960000759 19960219 WO1997FI00109 19970219

Family:

Publication number	Publication date	Application number	Application date
AT197617 E	20001215	AT19970903411T	19970219
AU199717976 A1	19970902	AU19970017976	19970219
DE69703534 D1	20001221	DE19976003534	19970219
DE69703534 T2	20010628	DE19976003534T	19970219
EP0882162 A1	19981209	EP19970903411	19970219
EP0882162 B1	20001115	EP19970903411	19970219
FI105121 B	20000615	FI19960000759	19960219
FI960759 A	19970820	FI19960000759	19960219
FI960759 A0	19960219	FI19960000759	19960219
RU2178042 C2	20020110	RU19980117455	19970219
RU98117455 A	20000627	RU19980117455	19980921
WO9730235 A1	19970821	WO1997FI00109	19970219

Probable Assignee: JUOLA TUOMO

Assignee(s):(std)**:** JUOLA TUOMO ; KIMMO TIUSANEN ; TIUSANEN KIMMO ; TUOMO JUOLA

Inventor(s):(std)**:** JUOLA TUOMO ; TIUSANEN KIMMO

Inventor(s): TUOMO JUOLA ; KIMMO TIUSANEN

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CN CU CZ DE DK EE ES FI FR GB GE GR HU IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG US UZ VN

International class (IPC 8–9): E04B1/16 E04B1/30 E04C3/04 E04C3/07 E04C3/293 E04C3/34 (Advanced/Invention); E04B1/30 E04C3/04 (Advanced/Non–invention); E04B1/16 E04B1/30 E04C3/04 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): E04B1/16 E04B1/30

CPC: E04B1/165 E04C3/065 E04C3/07 E04C3/293 E04C3/34 E04C2003/0413 E04C2003/0417 E04C2003/043 E04C2003/0434 E04C2003/0465 E04C2003/0473

European class: E04B1/16D E04C3/06H E04C3/07 E04C3/293 E04C3/34 P04C3/04S1S P04C3/04S1S1 P04C3/04S2A P04C3/04S2B P04C3/04S3S P04C3/04S3U

Classification Explorer

Cited documents: WO9401630 A1, FR2428714 A1, DE3116102 A1, DE2811410 A1,

Forward Citations: WO12000391, WO07141370, WO07031287, US9151036, GR1003471, EP1416101, CN103741881, CN103741881, CN103741792, CN103741792, CN102312483, CN102312483,

Abstract:
A composite–structure building framework, which comprises horizontal steel girders (21) and vertical steel columns (12), which have been joined together with bolts (14). The vertical column (12a) has been placed from above against the bottom (22) or side flanges (27a) of the horizontal girder and fastened to the lower column (12b) at the corresponding point with bolts (14) going through the bottom (22) or the side flanges of the horizontal girder. Concrete reinforcements (19) are, if necessary, placed both in the U–shaped trough or box formed by the horizontal girder and inside the columns, and these spaces are filled with concrete.

0) EP1936054B9 – TENSION PLATE FOR MOUNTING POROUS CONCRETE WALL...

67) Family number: 34351819 (EP1936054B9) © PatBase

Title: Tension plate for mounting porous concrete wall panels and porous concrete wall panel system with tension plates

Priority: DE200620019060U 20061218

Family:

Publication number	Publication date	Application number	Application date
AT447645 E	20091115	AT20070123457T	20071218
DE202006019060 U1	20070301	DE200620019060U	20061218
DE502007001894 D1	20091217	DE200750001894T	20071218
EP1936054 A1	20080625	EP20070123457	20071218
EP1936054 B1	20091104	EP20070123457	20071218
EP1936054 B9	20100526	EP20070123457	20071218

Probable Assignee: XELLA BAUSTOFFE GMBH

Assignee(s):(std)**:** XELLA BAUSTOFFE GMBH

Inventor(s):(std)**:** LANGER PETER

Agent(s): SOLF ALEXANDER

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL PL PT RO RS SE SI SK TR

International class (IPC 8–9): E04B1/38 E04B1/41 E04B1/61 E04B2/94 E04F13/08 (Advanced/Invention); E04B1/38 E04B1/41 E04B1/61 E04B2/90 E04F13/08 (Core/Invention)

CPC: E04B1/41 E04F13/0821

European class: E04B1/41 E04F13/08B2C8

Classification Explorer

Cited documents: DE9215457 U, DE3905496 A1, DE29611203 U1,

Forward Citations: FR3039843,

Abstract:
The plate has an anchor head (2) that is adapted to a cross sectional profile of an anchor bar (10). The plate has an elongated, straight anchor plate web and a connecting plate web that extends to the anchor plate web, where a circular forming plate web is situated between the anchor plate web and the connecting plate web. The anchor head is arranged at a free end of the connecting plate web, and is provided for reinforcement with an angle of bend.

0) US4616464A – COMPOSITE FIRE–RESISTANT CONCRETE/STEEL COLUMN ...

68) Family number: 3615956 (US4616464A) © PatBase

Title: Composite fire–resistant concrete/steel column or post

Priority: CA19840460879 19840813 EP19840109301 19840806 LU19830084966 19830812

Family:

Publication number	Publication date	Application number	Application date
AT38071 E	19881115	AT19840109301T	19840806
CA1236703 A1	19880517	CA19840460879	19840813
DE3474703 D1	19881124	DE19843474703	19840806
EP0133565 A2	19850227	EP19840109301	19840806
EP0133565 A3	19850821	EP19840109301	19840806
EP0133565 B1	19881019	EP19840109301	19840806
LU84966 A	19850424	LU19830084966	19830812
US4616464 A	19861014	US19840639375	19840809

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED SA ; LAHODA ERWIN ; LICKES JEAN PAUL ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** LAHODA ERWIN ; LICKES JEAN PAUL ; SCHLEICH JEAN BAPTISTE

Agent(s): OGILVY RENAULT

Designated states: AT BE CH DE FR GB IT LI NL SE

International class(IPC 8–9)**:** E04C3/293 (Advanced/Invention); E04C3/29 (Core/Invention)

International class(IPC 1–7)**:** E04B E04C3/293 E04C3/34

CPC: E04C3/293

European class: E04C3/293

US class: 52/260 52/334 52/721.4 52/723 52/729 52/729.1 52/834 52/837

Classification Explorer

Cited documents: US915295 A, US4196558 A, US3050161 A, US2987855 A, US2664740 A, US2441890 A, US2375116 A, US2115504 A, US1496819 A, LU83447 A, GB188715131 A, GB15131, FR382117 A, DE2829864 A1, BE862921 A1,

Forward Citations: WO9703260, US9295936, US8938882, US8652228, US8539726, US8516761, US8438808, US8266856, US8065848, US7993422, US7930866, US7882679, US7721496, US7645310, US7491254, US7213379, US7107730, US7008467, US6966940, US6938392, US6061992, US2010325996, US2010287878, US2010281808, US2008050578, US2008047221, US2003029111, FR2736667, EP0212593, EP0189785,

Abstract:
Source: US4616464A A composite structural element comprises a steel structural shape whose web is provided with one or more steel plates secured thereto by welding or bolting and embedded in the concrete filling the channels between its flanges. The concrete may also include a reinforcement secured to the plate. With a relatively simple structure the system has increased load–carrying capacity even under fire conditions.

0) US5484235A – RETAINING WALL SYSTEM

69) Family number: 11183440 (US5484235A) © PatBase

Title: Retaining wall system

Priority: CA19972194745 19970109 US19940252738 19940602 US19970874361 19970613 US19960585568 19960116

Family:

Publication number	Publication date	Application number	Application date
AU199710112 A1	19970724	AU19970010112	19970110
AU708866 B2	19990812	AU19970010112	19970110
CA2194745 AA	19970717	CA19972194745	19970109
MX9700311 A1	19980430	MX19970000311	19970110
US5484235 A	19960116	US19940252738	19940602
US5702208 A	19971230	US19960585568	19960116
US5820305 A	19981013	US19970874361	19970613

Probable Assignee: T AND B STRUCTURAL SYSTEMS LLC

Assignee(s):(std)**:** T AND B STRUCTURAL SYSTEMS INC ; TAYLOR THOMAS P

Assignee(s): HILFIKER WILLIAM K ; T AND B STRUCTURAL SYSTEMS LLC

Inventor(s):(std)**:** HILFIKER WILLIAM K ; TAYLOR THOMAS P

Inventor(s): THOMAS P TAYLOR ; WILLIAM K HILFIKER

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SMART AND BIGGAR

International class (IPC 8–9): E01C5/04 E02D17/20 E02D29/02 E04C1/00 (Advanced/Invention); E01C5/04 E02D29/02 E04C1/00 (Core/Invention)

International class (IPC 1–7): E01C5/04 E02B3/12 E02D29/02 E04B2/0 E04C1/00

CPC: E02D17/205 E02D29/0225 E02D29/025

European class: E02D17/20C E02D29/02D E02D29/02E

US class: 404/40 405/16 405/20 405/258 405/262 405/284 405/286 405/302.4 52/574 52/605 52/611

Classification Explorer

Cited documents: USRE13299 E, US991041 A, US5474405 A, US5257880 A, US5076735 A, US4993879 A, US4920712 A, US4834584 A, US4664552 A, US4661023 A, US4653962 A, US4651975 A, US4411255 A, US4329089 A, US4324508 A, US4286895 A, US4134241 A, US4123881 A, US4117686 A, US3998022 A, US3597928 A, US2881614 A, US2703963 A, US2552712 A, US2327640 A, US2275933 A, US2208589 A, US2137153 A, US1992785 A, US1959816 A, US1813912 A, US1144143 A, FR530097 A, FR1006087 A,

Forward Citations: WO9957377, WO9935343, WO9932731, WO9924677, WO9904102, WO13039599, WO12136174, WO11109360, WO11079405, WO06025633, WO06025632, WO06025632, WO05116347, WO05035902, WO04018779, WO04018779, USD732699, USD730543, USD729414, USD569010, USD555808, USD552258, USD548367, USD548366, USD548365, USD547881, USD546972, USD537533, USD526067, USD498002, USD441464, US9605402, US9482002, US9441370, US9238910, US9169642, US9091055, US8745953, US8734059, US8684633, US8677711, US8632282, US8632281, US8632280, US8632279, US8632278, US8632277, US8627620, US8496411, US8496396, US8393829, US8272812, US8256182, US8225564, US8152417, US8015772, US7934351, US7918623, US7913469, US7908799, US7857540, US7850400, US7828498, US7632036, US7604431, US7555872, US7503719, US7497646, US7491018, US7396190, US7367752, US7351015, US7290377, US7191571, US6939087, US6908263, US6860681, US6857240, US6854236, US6827527, US6793436, US6792731, US6769220, US6739797, US6685400, US6666619, US6622445, US6517293, US6443654, US6371700, US6287054, US6276870, US6113317, US6089792, US6086288, US6079908, US6059490, US6050749, US5975810, US5975809, US5934838, US5580191, US5568998, US2012224927, US2011311317, US2011311314, US2011229274, US2011217127, US2011182673, US2011176877, US2011170960, US2011170958, US2011170957, US2010290842, US2010251649, US2010247248, US2010139183,

US2010043336, US2009252561, US2009238639, US2009148242, US2009123228, US2009056259, US2009047075, US2009013638, US2008075533, US2008053030, US2008025793, US2007266266, US2007258776, US2007144099, US2007094991, US2007074478, US2006179780, US2006110222, US2006110221, US2006101770, US2005160695, US2005111921, US2005081470, US2005066596, US2004265070, US2004237432, US2004179902, US2004022587, US2004000114, US2003213203, US2003070385, US2002148181, GB2355029, FR2812893, FR2808541, ES2434143, EP1948873, EP1748111, EP1180561, CN103603370, CN103603370, AU751714, AU2011268417,

Abstract:
Source: US5484235A A retaining wall system including a wall portion interconnected with welded wire mat and secured in position is disclosed. The wall may be composed of a plurality of modular blocks, preferably made of concrete, having grooves into which individual wires of the welded wire mat are placed. Examples of modular blocks disclosed are concrete S, T and J−blocks. Alternately, the wall may be a concrete panel. One embodiment of the present invention employs a concrete shaft placed into the soil behind the wall and to which the welded wire mats are secured to hold the wall in place.

0) US5809712A – SYSTEM FOR JOINING PRECAST CONCRETE COLUMNS AND...

70) Family number: 30860392 (US5809712A) © PatBase

Title: System for joining precast concrete columns and slabs

Priority: ID19960001540 19960606

Family:

Publication number	Publication date	Application number	Application date
JP10096263 A2	19980414	JP19970163338	19970605
US5809712 A	19980922	US19970870086	19970605

Probable Assignee: SIMANJUNTAK JOHAN HASIHOLAN

Assignee(s):(std): I R JOHANN HASHIHORAN SIMANJUN ; SIMANJUNTAK JOHAN HASIHOLAN

Assignee(s): I R JOHANN HASHIHORAN SIMANJUNTAKK

Inventor(s):(std): SIMANJUNTAK JOHAN HASIHOLAN ; I R JOHANN HASHIHORAN SIMANJUN

Inventor(s): I R JOHANN HASHIHORAN SIMANJUNTAKK

International class (IPC 8–9): E04B1/16 E04B1/20 E04B1/21 E04B5/02 E04C3/34 E04C5/08 (Advanced/Invention); E04B1/16 E04B1/20 E04B5/02 E04C3/30 E04C5/00 (Core/Invention)

International class (IPC 1–7): E04B1/16 E04B1/20 E04B1/21 E04B5/02 E04C5/08

CPC: E04C3/34 E04C5/08

European class: E04C3/34 E04C5/08

US class: 52/223.7 52/236.8 52/236.9 52/251 52/263 52/283 52/583.1 52/585.1 52/742.14 52/747.12

Classification Explorer

Cited documents: US4330970 A, US4081935 A, US3613325 A, US3562979 A, NL7209390 A, NL6903098 A, GB1246178 A, EP0004998 A2,

Forward Citations: WO16057790, WO08019699, US9617724, US9506266, US9371648, US8511043, US8011147, US7980033, US7975443, US7934347, US7874110, US7207149, US7171787, US6920728, US6494639, US6385930, US6324805, US6308478, US6293063, US6058669, US2010225024, US2010071315, US2010031605, US2009320393, US2009301011, US2009178356, US2009165408, US2009165399, US2009151298, US2008060293, US2008053017, US2008022623, US2005204671, US2005183357, US2004261326, US2004250484, US2004055246, US2004016200, US2003154674, RU2590251, RU2471931, ES2154986, EA019161, DE10009374, CN102418402, CN102418402, CN102418401, CN102418401, CN102267177, CN101979789,

Abstract:
Source: US5809712A A precast concrete system is provided that consists of columns and slabs joined together in one point. Each corner of the slab is equipped with a steel pipe mounted on a steel plate that is attached at and covers the top surface of the column. Each column is equipped with high tensile steel reinforcement strands protruding at the top end to penetrate the steel pipes of the four corners of four slabs, through the holes in the steel base plate attached at the bottom surface of the next column above it, and through the pipes implanted vertically at the lower section of the next column. The implanted pipes are in line with the holes on the base plate. The four steel pipes of four slabs meeting on one column are tied together with high tensile steel wire rope through three holes drilled horizontally at three places of the pipe length: upper, middle, and lower sections. The pipes of the slab corners and the gaps between pipes and slabs are filled with a special mortar cement that hardens fast. Then a special mortar cement is injected to the implanted pipes through each pipe's opening on the side surface of the column.

0) KR100829354B – REBAR ARRANGEMENT AND ANCHORAGE STRUCTURE OF CF...

71) Family number: 42082743 (KR100829354B) © PatBase

Title: REBAR ARRANGEMENT AND ANCHORAGE STRUCTURE OF CFT COLUMN TO RC FLAT PLATE HAVING SHEAR HEAD

Priority: KR20070061514 20070622

Family:

Publication number	Publication date	Application number	Application date
KR100829354 B1	20080522	KR20070061514	20070622

Probable Assignee: SEOUL NAT UNIV IND FOUNDATION

Assignee(s):(std)**:** SEOUL NAT UNIV IND FOUNDATION ; SEOUL NATIONAL UNIV IND FOUNDATION

Assignee(s): SEOUL NATIONAL UNIVERSITY INDUSTRY FOUNDATION

Inventor(s):(std)**:** CHUNG KWANG RYANG ; KIM JIN WON ; LEE CHEOL HO ; SONG JIN KYU

International class (IPC 8–9): E04B5/43 E04C3/36 (Advanced/Invention); E04B5/43 E04C3/36 (Advanced/Non–invention); E04B5/43 E04C3/30 (Core/Invention)

Classification Explorer

Cited documents: KR100770023 B1,

Abstract:
Source: KR100829354B A bar arrangement and anchorage structure of a concrete filled steel tube column and a reinforced concrete flat plate having a shear head is provided to arrange and anchor reinforcing bars of a reinforced concrete flat plate to a concrete filled steel tube column stably, and to shorten a period of construction and to increase the efficiency of a joint by reducing a field work. A bar arrangement and anchorage structure of a concrete filled steel column and a reinforced concrete flat plate having a shear head is used for anchoring reinforcing bars(22) of a reinforced concrete flat plate, to a concrete filled steel tube column(10) which is composed of a steel tube having a hollow and filled with concrete in the hollow, wherein a shear head(11) composed of a beam member to be buried under the reinforced concrete flat plate is integrated to the concrete filled steel tube column at the side of the concrete filled steel tube column, on a joint between the concrete filled steel tube column and the reinforced concrete flat plate, holes are formed to face each other on the outer circumferential surface of the concrete filled steel tube column to make the reinforcing bars of the reinforced concrete flat plate penetrate the concrete filled steel tube column, and the reinforcing bars of the reinforced concrete flat plate are inserted to the holes at the outside of the concrete filled steel tube column and arranged to pass through the facing holes via the inside of the concrete filled steel tube column to have shear resistance with the combination of the outer circumferential surface of the concrete filled steel tube column and the anchor end of the reinforcing bar, and shear resistance with interaction between the reinforcing bar and the concrete filled in the column, thereby to prevent the shear failure of the reinforced concrete flat plate structure.

0) GB2159863A – FLEXIBLE WALL DAMS

72) Family number: 1888344 (GB2159863A) © PatBase

Title: Flexible wall dams

Priority: CA19840453696 19840507

Family:

Publication number	Publication date	Application number	Application date
CA1181602 A1	19850129	CA19840453696	19840507
GB2159863 A1	19851211	GB19840029217	19841119
GB8429217 A0	19841227	GB19840029217	19841119

Probable Assignee: HOYECK RALPH 80 SOMERVILLE AVE WESTMOUNT QUEBEC H3Z 1

Assignee(s):(std)**:** HOYECK R H ; HOYECK RALPH ; HOYECK RALPH HABER

Assignee(s): RALPH HABER HOYECK ; HOYECK RALPH 80 SOMERVILLE AVE ; HOYECK RALPH 80 SOMERVILLE AVE WESTMOUNT QUEBEC H3Z 1

Inventor(s):(std)**:** HOYECK RALPH HABER ; HOYECK RALPH SOMERVILLE AVE WE

Inventor(s): RALPH HABER HOYECK ; HOYECK RALPH ; HOYECK RALPH 80 SOMERVILLE AVE ; HOYECK RALPH 80 SOMERVILLE AVE WESTMOUNT QUEBEC H3

International class (IPC 8–9): E02B7/00 (Advanced/Invention); E02B7/00 (Core/Invention)

International class (IPC 1–7): E02B7/00

CPC: E02B7/005

European class: E02B7/00B

Classification Explorer

Cited documents: GB954935, GB2077825, GB1448233, GB1447720, GB1398240, GB1051501,

Forward Citations: FR2854178, EP0721028, EP0586364,

Abstract:
Source: GB2159863A The present invention deals with flexible wall dams comprising an upstanding, flexible, impermeable, inextensible, reinforced flexible wall having elongated upper 16 and lower peripheral edges, with the lower edge, positively and substantially sealingly secured to the base of the waterbed, the riverbed, the seabed or the like and the rest of the flexible wall supported directly or indirectly by contained fluid media 7 or by loose solid substance, shielded by the front flexible wall receiving the upstream water pressure 8.

0) WO9109513A2 – THE EFFICIENT STRUCTURE STRUCTURE EFFICACE

73) Family number: 3416741 (WO9109513A2) © PatBase

Title: THE EFFICIENT STRUCTURE

Priority: US19890451351 19891215 WO1990US07476 19901217

Family:

Publication number	Publication date	Application number	Application date
AU199171713 A1	19910724	AU19910071713	19901217
AU7171391 A1	19910724	AU19910071713D	19901217
CA2049335 AA	19910823	CA19902049335	19901217
WO9109513 A2	19910711	WO1990US07476	19901217

Probable Assignee: STEPHENS ANNA Q

Assignee(s):(std)**:** ANNA Q STEPHENS ; STEPHENS ANNA Q

Inventor(s):(std)**:** STEPHENS ANNA Q

Inventor(s): ANNA Q STEPHENS

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT AU BE BF BJ BR CA CF CG CH CM DE DK ES FR GA GB GR IT JP KP KR LU ML MR NL NO SE SN SU TD TG US

International class (IPC 8–9): E02D31/08 E04B2/00 E04B2/70 E04C3/00 E06B1/08 (Advanced/Invention); E02D31/00 E04B2/70 E06B1/04 (Core/Invention)

International class (IPC 1–7): E04B1/10 E04B1/26 E04B1/62 E04B1/74 E04B1/98 E04B2/00 E04C3/00 E04H9/02 E04H9/16

CPC: E02D31/08 E04B2/702 E06B1/08

European class: E02D31/08 E04B2/70B1 E06B1/08

Classification Explorer

Forward Citations: WO9627056, WO0171114, EP2287414,

Abstract:
Source: CA2049335A 2049335 9109513 PCTABS00005

0) CN204475670U – CONCRETE–FILLED STEEL TUBE COLUMN WITH BUILT–IN...

74) Family number: 59407650 (CN204475670U) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN WITH BUILT–IN PRE–PROCESSING SEMICONTINUOUS STEEL REINFORCEMENT CAGE

Priority: CN201510060416 20150205 CN201520082003U 20150205

Family:

Publication number	Publication date	Application number	Application date
CN104675019 A	20150603	CN201510060416	20150205
CN104675019 B	20170419	CN201510060416	20150205
CN204475670 U	20150715	CN201520082003U	20150205

Probable Assignee: YAO PANFENG

Assignee(s):(std)**:** YAO PANFENG

Inventor(s):(std)**:** YAO PANFENG

International class (IPC 8–9): E04B1/94 E04B1/98 E04C3/34 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014062379 A2, JP10204993 A2, GB2184759 B2, CN2801934 Y, CN204475670 U, CN204059759 U, CN102995834 A, CN101519897 A,

Forward Citations: CN106013607, CN105178358, CN105178358, CN104675019,

Abstract:
Source: CN204475670U The utility model relates to a concrete–filled steel tube column with a built–in pre–processing semicontinuous steel reinforcement cage. The steel tube column comprises a steel cylinder and a continuous steel reinforcement cage, wherein interrupted steel reinforcement cages are prefabricated in the steel cylinder; the steel cylinder with the interrupted steel reinforcement cages prefabricated inside is a whole consisting of the interrupted steel reinforcement cages, a giant steel cylinder and binding pieces; the interior of the giant steel cylinder is separated into a plurality of cavities by longitudinal vertical partition plates and transverse vertical partition plates; transverse division plates are arranged in each cavity at intervals along the height direction of each cavity; the interrupted steel reinforcement cages are positioned between the adjacent transverse division plates, and are connected with an inner wall of the giant steel cylinder to a whole through the binding pieces; the continuous steel reinforcement cage is arranged along the full length of the cavities; and holes allowing the continuous steel reinforcement cage to penetrate through are formed in the transverse division plates. The concrete–filled steel tube column solves the technical problems that the overlong giant concrete–filled steel tube column structure is low in compressive strength and poor in fire resistance, and the concrete–filled steel tube column can be widely applied to a super high–rise long–span structure.

0) CN101476348A – STEEL PIPE CONCRETE SEGMENT TYPE COAT NODE AND ...

75) Family number: 43526672 (CN101476348A) © PatBase

Title: Steel pipe concrete segment type coat node and its construction method

Priority: CN200810209748 20081222

Family:

Publication number	Publication date	Application number	Application date
CN101476348 A	20090708	CN200810209748	20081222
CN101476348 B	20101222	CN200810209748	20081222

Probable Assignee: DAQING PETROLEUM INST

Assignee(s):(std): DAQING PETROLEUM INST

Assignee(s): DAQING PETROLEUM INSTITUTE

Inventor(s):(std): TAO YANG ; WENFU ZHANG ; WENYAN ZHAO ; JING JI ; YINGCHUN LIU

Inventor(s): ZHANG WENFU ; ZHAO WENYAN ; LIU YINGCHUN ; YANG TAO ; JI JING

International class (IPC 8–9): E04B1/18 (Advanced/Invention); E04B1/18 (Core/Invention)

Classification Explorer

Forward Citations: CN104895338, CN104060700, CN104032838, CN103696493, CN103696493, CN103628569, CN103628569, CN103556712, CN103046643, CN102704575, CN102704575, CN102704574, CN102425237, CN102392493, CN101818478, CN101769011,

Abstract:
Source: CN101476348A The invention relates to a concrete–filled steel tube sectional type sleeve gusset and a construction method thereof, which relate to a connecting gusset for connecting a concrete–filled steel tube column and a girder in civil engineering and a construction method thereof. The concrete–filled steel tube sectional type sleeve gusset comprises the concrete–filled steel tube column and the steel girder which is connected with the column, wherein the concrete–filled steel tube column is formed by filling concrete into a steel tube; the steel tube is formed by connecting an upper column steel tube and a lower column steel tube through a connecting sleeve; the connecting sleeve and the lower column steel tube are in split type; an upper reinforcement ring plate and a lower reinforcement ring plate are arranged outside the connecting sleeve; and a vertical connecting plate is arranged between the upper reinforcement ring plate and the lower reinforcement ring plate. The connecting sleeve and the lower column steel tube in the concrete–filled steel tube sectional type sleeve gusset are in split type, so that the concrete casting strength of the lower column steel tube and the upper column steel tube can be different under the condition of construction, thereby the requirement of strong gussets and weak members can be met. Moreover, the concrete–filled steel tube sectional type sleeve gusset has the advantages of concise and definite force transferring path, large gusset rigidity, high bearing capacity, superior mechanical property, good anti–seismic performance and simple and convenient processing and manufacture.

76) Family number: 19922272 (GB628750A) © PatBase

Title: Process for the manufacture of pre–stressed concrete articles, particularly railway sleepers and articles thus obtained

Priority: 19460212

Family:

Publication number	Publication date	Application number	Application date
BE470821 A	00000000		00000000
CH267065 A	19500315		19461023
FR1000487 A	00000000		00000000
GB628750 A	19490905	GB19460030264	19461010
NL71330 C	00000000		00000000

Probable Assignee: FREYSSINET EUGENE

Assignee(s):(std)**:** EUGENE FREYSSINET ; FREYSSINET EUGENE

Inventor(s):(std)**:** EUGENE FREYSSINET

Inventor(s): FREYSSINET EUGENE

International class (IPC 8–9)**:** B28B23/04 B28B23/06 E01B3/34 (Advanced/Invention); B28B23/02 E01B3/00 (Core/Invention)

International class (IPC 1–7)**:** E04C5/12

CPC: B28B23/043 B28B23/06 E01B3/34

European class: B28B23/04B B28B23/06 E01B3/34

Classification Explorer

Abstract:
Source: GB628750A 30264. Convention date, Feb. 12. [Class 87 (ii)] [Also in Groups X and XXX] Within the rounded end portions of reinforcements in the form of elongated rings or hoops are placed tension–resisting members, the reinforcements with the members being then placed within a mould and the members being secured to terminal parts of the mould. The terminal parts are then separated, whereby the reinforcement is tensioned, the resultant gap in the mould is closed, and the mould is filled with concrete. Reinforcing wire 15 is wound around concrete blocks 11 which are temporarily mounted at the ends of an expansible rod 13, the rod being rotated about its centre 14 to effect this winding. The ends of the wire are secured to each other, and ligatures 17 are applied to flatten the straight parts of the reinforcement. The assembly of reinforcement, blocks and rod is then placed within a mould, the blocks are anchored to the ends of the mould, the rod is taken out, the ends of the mould are forced apart by means of wedges to tension the reinforcement, and the mould is filled with concrete, the blocks 11 and the tensioned reinforcement being embedded in the cast concrete article. Figs. 6 to 8 show part of a mould for making two railway sleepers simultaneously, this mould comprising sides 18, partition 19, top and bottom 25 and ends 29. The sides 18 are divided longitudinally into halves, and in operation these halves are forced apart by driving wedges 22 between them. The partition 19 (on either side of which a sleeper is cast) is secured to the sides by bolts 21. When the wedges 22 are driven in, this partition also must expand; accordingly, it is made in several parts, and the gaps left by the expansion are filled with wedges 24. The sides, top and bottom have stiffening ribs 26, 27. Each end comprises an H–shaped member 28 co–operating with members 29 secured within a cylinder 32–by wedges 34, 35. The members 28 and 29 have projections 30 on which rest the bearing surfaces 31 of the blocks 11. Over each end is fitted a cone 40 of sheet metal, the two cones being joined by clamps. Cores 38, for making holes in the sleepers for rail attachments, are secured to the top and bottom of the mould by keys 39. Fig. 10 shows an arrangement for casting the sleepers, comprising a rail 41 on which run carriages 42 which carry the moulds by means of cables 44. At A, B and C the mould is assembled and at D the base of the mould is secured to a vibrator 47 whilst concrete is fed into the mould from a hopper 48 via funnel 49. Later the concrete is cured, the moulds open and the sleepers removed. Removal of the sleepers may be facilitated by polishing the surfaces 18a of the sides and by tensioning the partition 19, this tensioning then resulting in automatic ejection of the sleepers. Specifications 338,934, [Class 87 (ii)], 393,606 and 393,576 are referred to.

0) ZA200301627A – CONSTRUCTION SYSTEM OF PREFABRICATED PANELS USI...

77) Family number: 28021627 (ZA200301627A) © PatBase

Title: CONSTRUCTION SYSTEM OF PREFABRICATED PANELS USING A SPATIAL METALLIC STRUCTURE.

Priority: EC20010004123 20010717 EC2001SP04123 20010717 WO2002EC00001 20020307

Family:

Publication number	Publication date	Application number	Application date
BRPI0205692 A	20030715	BR2002PI05692	20020307
CN1488023 A	20040407	CN20028002395	20020307
ECSP014123 A	20030310	EC2001SP04123	20010717
KR20030029831 A	20030416	KR20037002475	20030220
PA8550601 A1	20030214	PA20020085506	20020715
PE09912002 A1	20021204	PE20020000630	20020716
SV2003001178 A	20030710	SV20020001178	20020717
WO03008730 A1	20030130	WO2002EC00001	20020307
YU15803 A	20050610	YU20030000158	20020307
ZA200301627 A	20040420	ZA20030001627	20020307

Probable Assignee: BCG INTERNAT LTD

Assignee(s):(std)**:** BCG INT CO LTD ; BCG INT LTD ; BCG INTERNAT CO LTD ; BCG INTERNAT LTD ; MODUL HOGAR INMOBILIARIA S A ; CARVAJAL ROUSSEAU JORGE EDMUND

Assignee(s): CARVAJAL ROUSSEAU JORGE EDMUNDO ; BCG INTERNATIONAL LTD ; BCG INTERNATIONAL CO ; BCG INTERNATIONAL CO LTD ; BCG

Inventor(s):(std)**:** CARVAJAL ROUSSEAU ; CARVAJAL ROUSSEAU EDMUNDO ; CARVAJAL ROUSSEAU JORGE E ; CARVAJAL ROUSSEAU JORGE EDMUND ; CARVAJAL ROUSSEAU JORGE EDMUNDO ; EDMUNDO JORGE ; JORGE EDMUNDO ; ROUSSEAU CARVAJAL ; ROUSSEAU JORGE EDMUNDO CARVAJA

Inventor(s): JORGE EDMUNDO CARVAJAL ROUSSEAU

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/28 E04C2/38 E04C5/06 E04H6/00 (Advanced/Invention); E04B2/84 (Advanced/Non–invention); E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/38 E04H6/00 (Core/Invention); E04B2/84 (Core/Non–invention)

International class (IPC 1–7): E04B1/16 E04B1/348 E04B2/00 E04B5/10 E04C2/26 E04C2/28 E04C2/38 E04H6/00

CPC: E04B1/161 E04B2/845 E04B2/847 E04B5/10 E04C2/384

European class: E04B1/16A E04B5/10 E04C2/38C P04B2/84P2 P04B2/84P3

Classification Explorer

Cited documents: US4741139 A, US4637187 A, US4625484 A, DE1940198 A1,

Forward Citations: ES2264596, CN103572866, CN102839770, CN102839770, CN102535680,

Abstract:
Source: YU15803A The invention relates to a system for constructing with pre–fabricated panels having a metallic spatial structure. The Invention also relates to the design thereof and a building construction system that makes use of pre–fabricated modular panels with structural metal tubes which are made from, in particular, expanded and ribbed perforated galvanised sheet steel and steel. Said panels, together with the connection and strengthening elements, are assembled on site and are filled or lined with concrete or cement mortar according to the use thereof. In this way, multi–purpose dwellings and buildings can be constructed precisely and quickly without the need for heavy or complicated tools. The end construction, which complies with international building

codes, is solid and resistant to seismic hazards, hurricanes, tornadoes and fire. Said novel design can be used to produce kits (sets of pieces to be mounted) for dwellings and buildings that are easy for end users to assemble.

0) WO9217665A1 – BUILDING STRUCTURE

78) Family number: 8327413 (WO9217665A1) © PatBase

Title: BUILDING STRUCTURE

Priority: AU1991PK05460 19910408 AU19920014084 19920407

Family:

Publication number	Publication date	Application number	Application date
AU199214084 A1	19921029	AU19920014084	19920407
AU644953 B2	19931223	AU19920014084	19920407
TH14357 A	19940630	TH19921000465	19920407
WO9217665 A1	19921015	WO1992AU00150	19920407

Probable Assignee: GLENKAN PTY LTD

Assignee(s):(std)**:** DAVID HENRY ATHELSTAN NALL ; GLENKAN PTY LTD

Assignee(s): GLENKAN PTY. LTD.NALL ; Henry ; Athelstan ; David

Inventor(s):(std)**:** NALL DAVID HENRY ATHELSTAN

Inventor(s): Athelstan ; David ; DAVID HENRY ATHELSTAN NALL ; Henry ; NALL

Agent(s): GLENKAN PTY LTD

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CS DE DK ES FI FR GA GB GN GR HU IT JP KP KR LK LU MC MG ML MN MR MW NL NO PL RO RU SD SE SN TD TG US

International class (IPC 8–9): E04B1/34 E04B7/14 (Advanced/Invention); E04B1/34 E04B7/14 (Core/Invention)

International class (IPC 1–7): E04B1/34 E04C3/30 E04H1/00

CPC: E04B1/3412 E04B7/14

European class: E04B1/34C1 E04B7/14

Classification Explorer

Cited documents: US4137679 A, GB1360291 A, FR2657383 A1, DE3537306 A1, DE2710078 A1,

Forward Citations: AU647362,

Abstract:
A building structural unit or module for low–rise buildings has a central, vertical, load–bearing, hollow steel column (10) the bottom of which in one form has a base plate (11) for fixing to a pre–formed concrete base pad (12); the top of the column has an internal circumferential flange (22) with bolt holes for attachment of steel roof truss top chords (17, 18) and in one form the complete roof structure (13) consisting of trusses (14, 16, 17, 19, 24 and 15, 16a, 18, 20, 25) are connected to top truss chord ring (26, 27) and bottom chord flange (23), and the roofing (21) and lifted by a crane on to the top of column (10) and rings (22, 26) are bolted together through bolt holes (30, 31), and the column has vertical radial cleats between roof and ground level for fixing of floor beams (35, 36), the outer ends of which are suspended from near the outer ends of the roof trusses by steel rods (43, 44) which continue (39, 40) to buried earth anchors (41, 42) which maintain the column (10) in a vertical position under wind–load conditions and stabilise the whole structure.

0) CN101748828A – CONCRETE FILLED STEEL TUBE LAMINATED COLUMN FRA...

79) Family number: 45921424 (CN101748828A) © PatBase

Title: Concrete filled steel tube laminated column frame inbuilt steel plate and steel truss interconnected space shear wall

Priority: CN200910259460 20091218

Family:

Publication number	Publication date	Application number	Application date
CN101748828 A	20100623	CN200910259460	20091218
CN101748828 B	20110810	CN200910259460	20091218

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std): BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Assignee(s): BEIJING UNIVERSITY OF TECHNOLOGY

Inventor(s):(std): WANLIN CAO ; YUNPENG ZHANG ; JIANWEI ZHANG ; LICHANG WANG

Inventor(s): WANG LICHANG ; CAO WANLIN ; ZHANG JIANWEI ; ZHANG YUNPENG

International class (IPC 8–9): E04B2/56 (Advanced/Invention); E04B2/56 (Core/Invention)

Classification Explorer

Forward Citations: CN105350643, CN104294996, CN104294996, CN104032861, CN104032861, CN103615069, CN103397721, CN103397695, CN102409783, CN102409783, CN102409755, CN102409755,

Abstract:
Source: CN101748828A The invention relates to an interconnected space shear wall, in particular to a concrete filled steel tube laminated column frame inbuilt steel plate and the steel truss interconnected space shear wall, which is composed of a concrete filled steel tube laminated column frame, a shear wallboard and a connecting beam, wherein, two sides of the shear wallboard are provided with the concrete filled steel tube laminated column frames, and the steel plate is arranged in the reinforced concrete shear wallboard of the shear wall; two outer sides of the steel plate are provided with a reinforcing mattress composed of reinforcing steel transversely distributed and reinforcing steel bars longitudinally distributed; concrete–filled steel tube columns are arranged in the concrete filled steel tube laminated column frame; the steel plate and the reinforcing steel bars transversely distributed are respectively welded with the concrete–filled steel tube columns at two sides; the connecting beam position is provided with two X–shaped diagonal steel trusses; the upper part and the lower part of the connecting beam are provided with truss girders; and the diagonal steel trusses, the truss girders and the steel plates are welded together at an angular point. The interconnected space shear wall of the invention has the characteristics of large initial rigid, high loading capability, slowed bearing capacity and rigidity attenuation, more anti–seismic defensive lines, favourable overall anti–seismic energy consumption performance, relatively stable anti–seismic performance in a later period and the like.

0) US2010208860A – GC QCMEHC NUCLEAR POWER PLANTS

80) Family number: 46564520 (US2010208860A) © PatBase

Title: GC QCMEHC NUCLEAR POWER PLANTS

Priority:

US19970950898	19971015	US19990123153P	19990306	US19990376957	19990818
US20000217308P	20000711	US19990123504P	19990309	US19990123207P	19990308
US20020156192	20020528	US20020074966	20020213	US20010850927	20010508
US20000518884	20000306	US20020073914	20020214	US20000231514P	20000909
US20000226750P	20000821	US20000220358P	20000724	US20070807748	20070530
US20070788172	20070604	US20070724752	20070315	US20060504304	20060814
US20060385078	20060320	US20060418157	20060503	US20060342006	20060130
US20050233546	20050923	US20050212943	20050825	US20050188339	20050725
US20050028982	20050103	US20040869752	20040616	US20040840152	20040505
US20030742485	20031219	US20020190993	20020708	US20020195668	20020715
US20070809132	20070531	US20080153036	20080513	US20090320441	20090126

Family:

Publication number	Publication date	Application number	Application date
US2010208860 AA	20100819	US20090320441	20090126

Probable Assignee: PETROVICH SVETZAR B

Assignee(s):(std)**:** PETROVICH SVETZAR B

Inventor(s):(std)**:** PETROVICH SVETZAR B

Agent(s): SVETOZAR B PETROVICH

International class (IPC 8–9)**:** G21C1/00 (Advanced/Invention)

CPC: G21C15/00 G21D1/006 Y02E30/40

European class: G21C15/00 G21D1/00C Y02E30/40

US class: 376/347 376/347P

Classification Explorer

Forward Citations: WO14143766, US9517885, US9474107, US9309050, US9242800, US8957474, US8954188, US8152447, US2013200061, US2009155063,

Abstract:
Source: US2010208860A Globose–conduit (GC) perimeter boundaries formations mass energy highest conserving (MEHC) Sets, balanced nuclear power plants, in millennium lifespan generate safest environmentally most friendly electric power; said perimeter boundaries' formations, multiple and serial enclosures, constitute a globose foundation globose reactor vessel, a containment building with a lower perimeter ancillary annex building for multiple primary coolant loops, light water reactors pressurized system, GC conduit tuned piping mass energy processes and buildings complex, boundaries safely closed perimeters. Two or four globose steam generators/separators two or four high pressure pumps' coolant loops and the reactor's support equipment floors in the annex building outside of the containment symmetrically align high pressure and temperature GC MEHC boundaries respectively two or four processes generated electrons turbine–generator buildings. The reactor, steam generators, processes piping and turbine–generators make GC mass energy formations.

0) US5678375A – FRAMEWORK OF A BUILDING

81) Family number: 28619413 (US5678375A) © PatBase

Title: FRAMEWORK OF A BUILDING

Priority: FI19920003118 19920707 FI19950000054 19950104 WO1993FI00286 19930706

Family:

Publication number	Publication date	Application number	Application date
AU199345033 A1	19940131	AU19930045033	19930706
CZ284825 B6	19990317	CZ19950000017	19930706
CZ9500017 A3	19951213	CZ19950000017	19930706
DE69302390 D1	19960530	DE19936002390	19930706
DE69302390 T2	19970102	DE19936002390	19930706
EP0653004 A1	19950517	EP19930914760	19930706
EP0653004 B1	19960424	EP19930914760	19930706
FI112969 B	20040213	FI19950000054	19950104
FI923118 A0	19920707	FI19920003118	19920707
FI950054 A	19950104	FI19950000054	19950104
FI950054 A0	19950104	FI19950000054	19950104
PL172393 B1	19970930	PL19930307054	19930706
PL307054 A1	19950502	PL19930307054	19930706
RU2120002 C1	19981010	RU19950106946	19930706
RU95106946 A	19970127	RU19950106946	19930706
RU95106946 A1	19970127	RU19950106946	19950207
SK1195 A3	19950711	SK19950000011	19930706
SK282532 B6	20021008	SK19950000011	19930706
US5678375 A	19971021	US19950362580	19950109
WO9401630 A1	19940120	WO1993FI00286	19930706

Probable Assignee: JUOLA TUOMO FI

Assignee(s):(std)**:** JUOLA TUOMO ; JUOLA TUOMO FI ; TUOMO JUOLA

Assignee(s): JUOLA TUOMO NAABTALI FI ; JUOLA TUOMO[FI]

Inventor(s):(std)**:** JUOLA TUOMO ; TUOMO JUOLA

Inventor(s): JUOLA TUOMO[FI] ; JUOLA TUOMO NAABTALI FI

Designated states: AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

International class (IPC 8–9): E04B1/24 E04B1/38 (Advanced/Invention); E04B1/24 (Core/Invention); E04B (Subclass/Invention)

International class (IPC 1–7): E04B E04B E04B1/00 E04B1/08 E04B1/24 E04H12/10 E04H12/14

CPC: E04B1/24 E04B2001/2406 E04B2001/2451 E04B2001/2478 E04B2001/2484

European class: E04B1/24 P04B1/24B2 P04B1/24B41 P04B1/24C5 P04B1/24E

US class: 52/236.7 52/637 52/653.2 52/655.1 52/721.4

Classification Explorer

Cited documents: US5012622 A, US4925330 A, US4723384 A, US4722156 A, US4271654 A, US4250679 A, US4171598 A, US4125973 A, US3829999 A, US3788024 A, SE7113103 A, DE1784021 A1, CH462418 A, CH462418,

Forward Citations: WO9963174, WO9730235, WO9600332, WO9600332, WO15074610, WO04009453, WO04009453, WO03021061, USD777947, USD768466, USD768420, USD598219,

US9523188, US9493326, US9416807, US9366020, US9249593, US9200442, US9109874, US9103132, US9096999, US8881478, US8782994, US8745954, US8695305, US8607515, US8572788, US8474204, US8453414, US8403431, US8341907, US7941985, US7849647, US7752824, US7559178, US7437829, US7334377, US7171789, US7146770, US7143554, US7117648, US6959515, US6862854, US6837016, US6826882, US6792732, US6745524, US6729098, US6679017, US6564519, US6425220, US6389767, US6112486, US5921042, US2017073971, US2016168841, US2015096244, US2014290154, US2014123573, US2014000207, US2013167468, US2012304584, US2011271636, US2011243644, US2010011692, US2008295443, US2007022704, US2007014630, US2005084324, US2005072117, US2005066612, US2005055917, US2004088944, US2004040224, US2003019167, ES2323396, ES2283179, ES2220236, EP2186956, EP0935037, EP0882162, DE102014117529, CN105040834, CN103741857, CN103741857, CN103374988, CN103374975, CN103362214, CN103334499, CN103334499, AU2001288615,

Abstract:
Source: US5678375A PCT No. PCT/FI93/00286 Sec. 371 Date Jan. 9, 1995 Sec. 102(e) Date Jan. 9, 1995 PCT Filed Jul. 6, 1993 PCT Pub. No. WO94/01630 PCT Pub. Date Jan. 20, 1994A building framework comprises a plurality of steel girders, steel columns, and steel connecting members for joining at least one girder with at least one column to form the building framework. Further provided is a plurality of substantially flat coupling elements, each having opening therein, wherein at least one column and at least one connecting member each terminate with at least one coupling element. The coupling elements substantially match each other and extend outward beyond the outer wall of the column and of the connecting member for providing attachment therebetween. The girders, columns and coupling elements are reinforced with concrete extending through the coupling elements via the openings.

0) US2010287715A – FENDERS FOR PIER PROTECTION AGAINST VESSEL COLL...

82) Family number: 47634193 (US2010287715A) © PatBase

Title: FENDERS FOR PIER PROTECTION AGAINST VESSEL COLLISION

Priority: US20090210971P 20090325 US20100729779 20100323 US20130908236 20130603

Family:

Publication number	Publication date	Application number	Application date
US2010287715 AA	20101118	US20100729779	20100323
US2013259580 AA	20131003	US20130908236	20130603
US8484787 BB	20130716	US20100729779	20100323
US8739343 BB	20140603	US20130908236	20130603

Probable Assignee: UNIV LOUISIANA STATE

Assignee(s):(std)**:** EL TAWIL SHERIF ; VOYIADJIS GEORGE Z ; UNIV LOUISIANA STATE

Assignee(s): BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND A ; BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND AGRICULTURAL AND MECHANICAL COLLEGE ; BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND AGRICULTURAL AND MECHANICS COLLEGE

Inventor(s):(std)**:** EL TAWIL SHERIF ; VOYIADJIS GEORGE Z

Agent(s): ADAMS AND REESE LLP; JASON P

International class (IPC 8–9)**:** E01D19/02 E02B3/26 F16F7/12 (Advanced/Invention)

CPC: F16F7/12 E01D19/02 E02B3/26

European class: F16F7/12

US class: 14/75 14/76 14/76P 14/78 188/377 188/377S 405/212 405/212S

Classification Explorer

Cited documents: US7794174 BB, US7481600 BB, US7396184 BB, US7112004 BB, US7100752 BB, US6863467 BB, US6811144 BB, US6692191 BB, US6604888 BB, US6551010 BA, US6536986 BA, US6004066 A, US5915876 A, US5851005 A, US5127354 A, US5123775 A, US4884919 A, US4815565 A, US4674911 A, US4650371 A, US4645375 A, US4452431 A, US4352484 A, US4321989 A, US4285616 A, US4137861 A, US3864922 A, US3853084 A, US3674115 A, US2011091273 AA, US2007286675 AA, US2003081997 AA,

Forward Citations: US9677238, US9567744, US9163369, US2015069773, US2014130725, US2013270754, US2012118690, FR3001514, EP2762744, CN104963318, CN104963318, CN104831686, CN104775355, CN104746421, CN104652255, CN104314002, CN104314002, CN104314000, CN104294797, CN104278619, CN104250962, CN103966980, CN103966980, CN103924555, CN103911971, CN103911971, CN103741647, CN103352418, CN102995607, CN102295063,

Abstract:
Source: US2010287715A A system is disclosed for protecting supporting structures, such as those of a bridge or other such marine supporting structure, from the force of an impact of a vehicle/vessel. Such a system includes a plurality of modular components arranged in series and configured to dissipate the energy of the force through the progressive buckling of one or more of the modular components. Each modular component contains an energy dissipation unit that includes a plurality of adjacent cells. The energy of the force is dissipated in the buckling of the walls of the cells of the energy dissipation units through the formation of one or more plastic hinges and/or volume reduction of the cells.

0) US2005116104A – ANTI–SEISMIC RESCUE APPARATUS

83) Family number: 30062447 (US2005116104A) © PatBase

Title: ANTI–SEISMIC RESCUE APPARATUS

Priority: RO20020000617 20020517 RO20020200617 20020517 US20040991251 20041117 WO2002RO00024 20021128

Family:

Publication number	Publication date	Application number	Application date
AU2002366703 AA	20031202	AU20020366703	20021128
JP2005526198 T2	20050902	JP20040505473T	20021128
JP4167653 B2	20081015	JP20040505473T	20021128
RO119643 B1	20050128	RO20020000617	20020517
US2005116104 AA	20050602	US20040991251	20041117
US7234277 BB	20070626	US20040991251	20041117
WO03097968 A1	20031127	WO2002RO00024	20021128

Probable Assignee: SAVIN NICOLAE

Assignee(s):(std)**:** SAVIN NICOLAE

Inventor(s):(std)**:** NICOLAE SAVIN ; SAVIN NICOLAE

Agent(s): LERNER AND GREENBERG PA

Designated states: AM AT AU BE BG BR CA CH CN CY CZ DE DK DZ EE ES FI FR GB GE GR HU ID IE IL IN IS IT JP KR KZ LU MC MD MX NL NZ PL PT RO RU SE SK TR UA US ZA

International class (IPC 8–9)**:** A62B99/00 E04H1/00 E04H1/12 E04H9/02 F16P7/00 (Advanced/Invention); A62B99/00 E04H1/00 E04H1/12 E04H9/02 F16P7/00 (Core/Invention)

International class (IPC 1–7)**:** A62B37/00 B64D11/00 E04H9/02 E04H9/06 F16P7/00

CPC: Y10S52/12 E04H1/125 E04H9/02

European class: E04H1/12C E04H9/02

US class: 244/118.5 244/118.500 52/105 52/125.2 52/167.1 52/79.12 52/DIG.12

Classification Explorer

Cited documents: US6539674 BB, US6374553 BA, US6349508 BA, US6298503 BA, US6101769 A, US5956907 A, US5867947 A, US4490864 A, US2607047 A, RO117271 B, JP8326349 A2, FR2731034 A1, FR2731033 A1,

Forward Citations: US8678515, US8572904, US8424253, US8007047, US7533942, US2013031845, US2012255469, US2012159876, US2008196329, US2008162180, US2007296605, US2007267247, US2007202796, ITMC20090124,

Abstract:
Source: US2005116104A A rescue apparatus mounted inside buildings where people currently live and spend their activities and in regions with high seismic potential includes a rescue cabin with a reinforcing frame, covered on an exterior side with corrugated iron and on an interior side with plastic fire–resistant and with low grade of softness material. The cabin has compartments, in which is a chair with head support, a backrest, a safety harness, and a crash helmet. For damping vertical shocks, under each chair is a damper spring. Access into the cabin is accomplished two doors with contradiction opening and vertical rotation axles solidly with the two central inferior doors and of the furniture part by a lever device and open together therewith. Each door has a locking mechanism driven from inside or outside the cabin. An upper part of the cabin has windows for ventilation, each equipped with a screen filter for dust.

0) JP2016200000A – STEEL–CONCRETE COMPOSITE WALL HAVING THREE OR M...

84) Family number: 63367451 (JP2016200000A) © PatBase

Title: STEEL–CONCRETE COMPOSITE WALL HAVING THREE OR MORE PARALLEL STEEL PLATES IN IN–PLANE DIRECTION IN WALL

Priority: JP20150025977 20150213 JP20160141212 20160719 JP20160141285 20160719 JP20160141383 20160719 JP20160141413 20160719 JP20160141333 20160719

Family:

Publication number	Publication date	Application number	Application date
JP2016148201 A2	20160818	JP20150025977	20150213
JP2016186219 A2	20161027	JP20160141285	20160719
JP2016186220 A2	20161027	JP20160141383	20160719
JP2016194245 A2	20161117	JP20160141212	20160719
JP2016194246 A2	20161117	JP20160141413	20160719
JP2016200000 A2	20161201	JP20160141333	20160719
JP6025884 B2	20161116	JP20150025977	20150213

Probable Assignee: LI WEN CONG

Assignee(s):(std)**:** LI WEN CONG

Assignee(s): LEE FUMISATO ; LEE STATEMENT SATOSHI LI WENCONG ; LI WENCONG

Inventor(s):(std)**:** LI WEN CONG

International class (IPC 8–9)**:** E01D1/00 E01D19/02 E01D19/12 E01D2/00 E04B1/14 E04B1/30 E04B1/41 E04B2/86 E04C2/28 E04C2/38 E04C3/20 E04C3/293 E04C3/34 E04C3/36 E04C3/46 (Advanced/Invention)

Classification Explorer

Cited documents: JP7062792 A2, JP6146410 A2, JP61277735 A2, JP61277735, JP5441524, JP54041524 A2, JP2012197643 A2, JP2012197643, JP2012140824 A2, JP2012140824, JP2010138685 A2, JP2010138685, JP2005273207 A2, JP2005273207, JP2005256604 A2, JP2005256604, JP200096713, JP200096712, JP2000096713 A2, JP2000096712 A2, JP1290857 A2, JP0762792, JP06146410, JP01290857,

Abstract:
Source: JP2016200000A PROBLEM TO BE SOLVED: To provide a steel–concrete composite wall having superior earthquake–resisting performance, wind pressure resisting performance, and terrorism resisting performance instead of a conventional earthquake–resisting wall, according to the present invention.SOLUTION: Three or more steel plates are installed in an in–plane direction in a steel–concrete composite wall. The three or more steel plates are thus installed so that a stress transmission mechanism by integration of the steel plates and concrete becomes advantageous, and the wall can be made less in thickness as more steel plates are used, thereby widening a usable space in a building. Further, the three or more steel plates are installed to be less in thickness, so conventional use of extremely thick steel plates when the steel plates are small in number can be avoided, and welding of the extremely thick steel plates also can be avoided.SELECTED DRAWING: Figure 2

0) AU2016200245A – PERMANENT FORMWORK SYSTEM FOR BUILDING OF COLUM...

85) Family number: 62976561 (AU2016200245A) © PatBase

Title:	Permanent Formwork System for Building of Columns and Beams
Priority:	AU20150900051 20150106 AU20160200245 20160106

Family:

Publication number	Publication date	Application number	Application date
AU2016200245 AA	20160721	AU20160200245	20160106

Probable Assignee:	PANTANO INVEST PTY LTD
Assignee(s):(std)**:**	PANTANO INVEST PTY LTD
Assignee(s):	PANTANO INVESTMENTS PTY LTD
Inventor(s):(std)**:**	PANTANO ANTONIO
Agent(s):	PANTANO INVESTMENTS PTY LTD; PIPERS
International class (IPC 8–9):	E04G13/02 E04G13/04 (Advanced/Invention)

Classification Explorer

Abstract:
Source: AU2016200245A Permanent formwork for the creation of a steel–reinforced beam or column comprising four corner panels separated where necessary by the inclusion of spacer panels; said corner panels being formed from a single sheet and folded through 90 degrees, their 5 upper and lower (end) edges being folded inwardly through 90 degrees to create attachment flanges; said spacer panels being made from a single sheet and having the same length as said corner panels, their ends being similarly formed into attachment flanges, the longitudinal (side) edges of said corner panels and said spacer panels being turned through 90 degrees to create attachment panels; steel reinforcing bar to reinforce 10 said beam or column being made up into a rigid assembly contained within a cage of lighter bar and retained in the desired positions by the outer surfaces of said steel reinforcing bar abutting the inwardly–projecting ends of said attachment panels. Sheet 1 of 9 ss ss o o o o\ o

0) EP0290884A2 – FINE PROOF BOND BEAM COLUMN FOR REINFORCED CONC...

86) Family number: 2994437 (EP0290884A2) © PatBase

Title: FINE PROOF BOND BEAM COLUMN FOR REINFORCED CONCRETE CONSTRUCTIONS.

Priority: CA19880566869 19880516 EP19880106889 19880429 LU19870086878 19870514

Family:

Publication number	Publication date	Application number	Application date
AT80191 E	19920915	AT19880106889T	19880429
AU198816156 A1	19881117	AU19880016156	19880513
AU603668 B2	19901122	AU19880016156	19880513
CA1302723 A1	19920609	CA19880566869	19880516
DE3874201 D1	19921008	DE19883874201	19880429
EP0290884 A2	19881117	EP19880106889	19880429
EP0290884 A3	19890315	EP19880106889	19880429
EP0290884 B1	19920902	EP19880106889	19880429
JP63308131 A2	19881215	JP19880115970	19880512
LU86878 A	19890119	LU19870086878	19870514

Probable Assignee: ARBED

Assignee(s):(std)**:** ARBED

Assignee(s): ARBED S A ; ARBED S A LUXEMBURG LUXEMBOURG LU ; ARBED SA ; SCHLEICH JEAN BAPTISTE

Inventor(s):(std)**:** JEAN BAPTISTE SCHLEICH ; JIYANNBATEISUTO SHIYURAIHI ; SCHLEICH JEAN BAPTISTE

Inventor(s): SCHLEICH JEAN BAPTISTE L 1898 KOCKELSCHEUER LU

Agent(s): CALLINANS; OGILVY RENAULT LLP SENCRL SRL

Designated states: AT BE CH DE FR GB IT LI NL SE

International class (IPC 8–9): E04B1/16 E04B1/30 E04B5/29 E04H12/12 (Advanced/Invention); E04B1/16 E04B1/30 (Advanced/Non–invention); E04B1/16 E04B1/30 E04B5/17 (Core/Invention)

International class (IPC 1–7): E04B1/30 E04B1/94 E04B5/29 E04C3/293 E04H12/12

CPC: E04B5/29

European class: E04B5/29

Classification Explorer

Cited documents: US4107893 A, LU85753 A, LU67658 A, JP58101098 B4, GB784383 A, GB2184759 A1, FR2375402 A1, EP0189785 A2, EP0084961 A2, DE1056347 A, CA886291 A, AU560619 B2,

Forward Citations: JP4091870, JP2004316073,

Abstract:
Fireproof beam–column bond for reinforced concrete construction, in which the open chambers of the column profile (1, 20) are for the most part filled with concrete and the outer faces of the flanges are bare, i.e. not covered with concrete. The web and one flange of the beam (2) are bare; the other flange, supporting the concrete ceiling (8), is provided with dowels (9) which project into the ceiling. The beam (2) is fastened on both sides to fireproof columns (1) in such a way as to be tension– and compression–proof. The beam–column connection is advantageously produced by a tension strap (10) or a cover plate (12).

0) GB1211714A – STRUCTURAL FRAMES

87) Family number: 720459 (GB1211714A) © PatBase

Title: STRUCTURAL FRAMES

Priority: GB19670054115 19671128

Family:

Publication number	Publication date	Application number	Application date
GB1211714 A	19701111	GB19670054115	19671128

Probable Assignee: DYNA STRUCTURES

Assignee(s):(std)**:** BALTIMORE CONCRETE PLANK CORP ; DYNA STRUCTURES ; EDWARD DEWOLF PERRY

International class (IPC 8–9)**:** E04B1/21 (Advanced/Invention); E04B1/20 (Core/Invention)

International class (IPC 1–7)**:** E04B1/20

CPC: E04B1/215

European class: E04B1/21B

Classification Explorer

Forward Citations: WO0121899, FR2522042,

Abstract:
Source: GB1211714A 1,211,714. Building frameworks. BALTIMORE CONCRETE PLANK CORP and F. D. PERRY [trading as DYNA STRUCTURES]. 28 Nov., 1967, No. 54115/67. Heading E1W. In a building framework elongated connectors 36 which are received by and project upwardly either from a concrete foundation 28, Fig. 9 or from the upper end of a column 12, Fig. 24, serve to penetrate an axially extending tubular core 16 thereby to locate the lower ends of columns 12 (or superimposed columns, 12' Fig. 24), each column being supported by the engagement of the end face of the core 16 upon a radially projecting enlargement of the connector which may be a screw threaded collar 46 engaging an external screw thread on the connector 36 to provide for vertical adjustment of the supported column. Grout 64 is subsequently introduced between the bottom face of a column 12 and the foundation 28. Similarly in Fig. 23, grout (not shown) is provided beneath the lower face of a superimposed column 12' and the upper surface of a beam 14 having an aperture through which the connector 36 passes, a space between the beam 14 and the upper face of the column being defined and sealed by a vented gasket 50 and filled by bearing pad material 66, for example epoxy resin. Prestressed floor planks 15 may rest upon the beams 14. The beams 14 may pass over two or more columns as indicated in Fig. 23 (not shown). The erected columns may be post–tensioned by a rod 400, Fig. 20, screwed into a plate 460 carried by the lowermost connector 436.

0) CN101215856A – STEEL TUBE CONCRETE COLUMN–PLATE HINGED JOINT N...

88) Family number: 42054173 (CN101215856A) © PatBase

Title: Steel tube concrete column–plate hinged joint node

Priority: CN200710301338 20071227

Family:

Publication number	Publication date	Application number	Application date
CN101215856 A	20080709	CN200710301338	20071227
CN101215856 B	20100825	CN200710301338	20071227

Probable Assignee: UNIV HEBEI POLYTECHNIC

Assignee(s):(std)**:** HEBEI UNIV OF TECHNOLOGY ; PENGDA CONSTRUCTION GROUP CO LTD ; UNIV HEBEI POLYTECHNIC

Assignee(s): PENGDA CONSTRUCTION GROUP CO ; HEBEI POLYTECHNIC UNIVERSITY

Inventor(s):(std)**:** PENG LI ; YONG LIAO ; YOUPO SU ; YUMIN ZHANG

Inventor(s): ZHANG YUMIN ; SU YOUPO ; LI PENG ; LIAO YONG

International class (IPC 8–9): E04B1/38 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN101215856A The invention relates to a civil engineering structure, in particular to a concrete filled steel tubular column and plate hinged joint, which comprises a concrete filled steel tubular column and a concrete floor, wherein the concrete filled steel tubular column and the concrete floor are connected through a hinge support, the concrete filled steel tubular column and the plate hinge point are suitable for the building which is not provided with bearing walls and beams and are only provided with vertically bearing concrete filled steel tubular column, as a vertical bearing part, the section area of the concrete filled steel tubular column and plate hinge point is reduced by more than a half compared with the steel reinforcement concrete column, improves the joint anti–deformation ability, ensures that the joint has a stronger deformation ability than that of frame–shear wall. When the joint is under powerful earthquake destroying, the concrete filled steel tubular column moves along with the concrete floor and the upper column and the lower column of the concrete filled steel tubular column slide relatively to each other, the concrete floor shall not tilt, thereby avoiding building collapses.

89) Family number: 56509849 (CN203742000U) © PatBase

Title: U–SHAPED–STEEL–CONCRETE COMPOSITE BEAM AND RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN JOINT ASSEMBLY

Priority: CN201410111531 20140324 CN201420135032U 20140324

Family:

Publication number	Publication date	Application number	Application date
CN103821235 A	20140528	CN201410111531	20140324
CN103821235 B	20160907	CN201410111531	20140324
CN203742000 U	20140730	CN201420135032U	20140324

Probable Assignee: JIANGSU ZHONGBAO STEEL STRUCTURE CO LTD

Assignee(s):(std)**:** JIANGSU ZHONGBAO STEEL STRUCTURE CO LTD

Assignee(s): BAO STEEL CO LTD JIANGSU ; JIANGSU ZHONGBAO STEEL STRUCTURE CO

Inventor(s):(std)**:** GUO LANHUI ; ZHOU GUOPING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: ES2391014 AA, CN2360474 Y, CN203742000 U, CN202577609 U, CN202273319 U, CN103541426 A,

Forward Citations: CN105350658, CN104947802, CN104912197, CN104912196, CN104863271, CN103821235, CN103821235,

Abstract:
Source: CN203742000U The utility model discloses a U–shaped–steel–concrete composite beam and rectangular concrete filled steel tubular column joint assembly, and relates to a concrete filled steel tubular column joint assembly. The U–shaped–steel–concrete composite beam and rectangular concrete filled steel tubular column joint assembly solves the problems that an existing joint connecting mode is unreasonable, the bearing force of a joint is over low, the ductility and the energy–dissipating capacity of a joint core area are insufficient, and the joint is damaged before other components. According to the U–shaped–steel–concrete composite beam and rectangular concrete filled steel tubular column joint assembly, a first rectangular steel tube, a second rectangular steel tube and a third rectangular steel tube are sequentially arranged from top to bottom, partition plates in the joint area are fixedly arranged between the second rectangular steel tube and the third rectangular steel tube, a reinforcing ring of the joint area is fixedly arranged between the first rectangular steel tube and the second rectangular steel tube, four U–shaped steel beams are evenly distributed on the four outer end faces of the second rectangular steel tube, a plurality of joint area inserting plates are arranged in the shape of # and arranged on the reinforcing ring of the joint area, a rebar is inserted in each joint area inserting plate, and concrete is poured in each U–shaped steel beam and on the upper portion of each U–shaped steel beam. The U–shaped–steel–concrete composite beam and rectangular concrete filled steel tubular column joint assembly is applicable to constructional engineering.

0) US4014177A – MARINE PIER HAVING DEEPLY SUBMERGED STORAGE CON...

90) Family number: 3626842 (US4014177A) © PatBase

Title: Marine pier having deeply submerged storage container

Priority: GB19750000881 19750109 GB19760038979 19760921 US19740503079 19740906 US19750617091 19750926

Family:

Publication number	Publication date	Application number	Application date
FR2283995 A1	19760402	FR19750024355	19750805
FR2283995 B1	19800814	FR19750024355	19750805
FR2325771 A2	19770422	FR19760028828	19760924
FR2325771 B2	19821112	FR19760028828	19760924
GB1498047 A	19780118	GB19750000881	19750109
GB1538758 A	19790124	GB19760038979	19760921
GB1538759 A	19790124	GB19780025177	19760921
JP51038202 A2	19760330	JP19750001983	19741227
JP55029205 B4	19800801	JP19750001983	19741227
NO142535 B	19800527	NO19740004069	19741112
NO142535 C	19800903	NO19740004069	19741112
NO744069 A	19760309	NO19740004069	19741112
US4014177 A	19770329	US19750617091	19750926

Probable Assignee: CANADIAN PATENTS DEV

Assignee(s):(std)**:** CANADIAN PATENTS DEV ; CANADIAN PATENTS AND DEV

Assignee(s): CANADIAN PATENTS AND DEV LTD ; CANADIAN PATENTS AND DEVELOPMENT LIMITED ; CANADIAN PATENTS AND DEVELOPMENT LTD ; CANADIAN PATENTS AND DEVELOPMENT ; NATIONAL RESEARCH COUNCIL OF CANADA ; CANADIAN PATENTS DEVELOPMENT LTD ; KANADEIAN PATENTSU ANDO DEV LTD

Inventor(s):(std)**:** JARLAN G E ; JARLAN GERARD EUGENE ; JERARUDO II JIAARAN

International class (IPC 8–9)**:** B65D88/78 E02B17/00 E02B17/02 E04H7/00 E21B43/01 E21B43/017 (Advanced/Invention); B65D88/00 E02B17/00 E04H7/00 E21B43/00 (Core/Invention)

International class (IPC 1–7)**:** B63B35/00 B65D87/00 B65D87/08 B65D88/78 B65G5/00 E02B17/00 E02B17/02 E02B3/06 E02D17/00 E02D21/00 E04H1/00 E04H7/00 E04H7/04 E21B15/02 E21B43/01

CPC: E02B2017/0086 E02B2017/0039 E02B17/025 B65D88/78 E21B43/017

European class: B65D88/78 E02B17/02C E21B43/017 P02B17/00F

US class: 114/257 114/65A 405/205 405/210 61/87

Classification Explorer

Cited documents: US3921408 A, US3886753 A, US3858402 A, US3383869 A, FR2283995 A1, FR2251208 A5, FR2179433 A5,

Forward Citations: WO08054909, US5050290, US4836709, US4371292, US4302130, US4114392, US2015010364, US2010312722, US2010250352, US2010116216, US2009321663, US2009125316, US2009112777, US2009100772, US2008319766, US2008275308, US2008255868, US2008195426, US2007276681, US2007261899, US2007256564, US2007239480, US2007233506, US2007232220, US2007228090, US2007225995, US2007225994, US2007225993, US2007223658, US2007219914, US2007219814, US2007219813, US2007219812, US2007219810, US2007219431, US2007219430, US2007219429, US2007219428, US2007219427, US2007219426, US2007219425, US2007219424, US2007219423, US2007219422, US2007219421, US2007219420, US2007217577, US2007215434, US2007214729, US2007203727, JP6221029, JP57158413, GB2294490, GB2294490, FR2726302, FR2325771, FR2325771, CN103935716, CN103935716, AU689950,

Abstract:
Source: US4014177A A vertically−elongate monolithic pier body comprises:

0) GB1419674A – STEEL–REINFORCED CONCRETE FRAME STRUCTURE

91) Family number: 3034715 (GB1419674A) © PatBase

Title: STEEL–REINFORCED CONCRETE FRAME STRUCTURE

Priority: DE19722251613 19721020

Family:

Publication number	Publication date	Application number	Application date
DE2251613 A1	19740502	DE19722251613	19721020
FR2203922 A1	19740517	FR19730037110	19731017
FR2203922 B3	19760917	FR19730037110	19731017
GB1419674 A	19751231	GB19730045865	19731001

Probable Assignee: SCHMIDT HANS J DIPL ING 000 MUENCHEN

Assignee(s):(std)**:** SCHMIDT H J ; SCHMIDT HANS ; SCHMIDT HANS J

Assignee(s): SCHMIDT HANS J DIPL ING 000 MUENCHEN ; SCHMIDT HANS DT

Inventor(s):(std)**:** SCHMIDT HANS J DIPL ING

Inventor(s): SCHMIDT HANS J

International class (IPC 8–9): E04B1/20 E04B5/04 E04B5/43 (Advanced/Invention); E04B1/20 E04B5/04 E04B5/43 (Core/Invention)

International class (IPC 1–7): E04B1/19 E04B1/20 E04B5/04

CPC: E04B1/20 E04B5/04 E04B5/046 E04B5/43

European class: E04B1/20 E04B5/04 E04B5/04S E04B5/43

Classification Explorer

Forward Citations: WO08019699, JP2010518275, FR2742783, FR2736666, FR2583447, EP0210116, EA019161, CN102704606, CN101979789,

Abstract:
Source: GB1419674A 1419674 Prefabricated structures H J SCHMIDT 1 Oct 1973 [20 Oct 1972] 45865/73 Headings E1A and E1W A reinforced concrete building structure is made up basically from pre–fabricated units comprising a combination of column units e.g. 1, with integral plate–like heads, e.g. 2 extending outwardly from each side of the column, and approximately half–way towards the adjoining column on at least one side, together with floor slabs, e.g. 4, of the same thickness as the heads, and supported at their ends thereby to be flush therewith. The jointing edges may be retracted as shown, with space left at the top for in–situ concrete, with projecting reinforcement providing bonding, and a full layer of in–situ concrete topping may be provided as well. Laterally adjacent slabs 4 are also grouted together. The joint at the foot of each column unit may be flexible or rigid; in the former case lateral restraint may be gained from an adjacent building. Cantilever slabs 13 may be attached to steel pins 14 projecting from the heads 2.

0) CN203654473U – CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED...

92) Family number: 56689136 (CN203654473U) © PatBase

Title: CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE COMPOSITE BEAM

Priority: CN201320778831U 20131129

Family:

Publication number	Publication date	Application number	Application date
CN203654473 U	20140618	CN201320778831U	20131129

Probable Assignee: HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s):(std)**:** HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s): SHUN STEEL MFG CO LTD HUBEI ; HUBEI HONGSHUN STEEL STRUCTURE MFG CO

Inventor(s):(std)**:** WANG SHAOZHONG ; WU XIAOYIN ; ZHOU FAN ; ZHOU PENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105569192, CN104563305, CN104294917, CN104278749,

Abstract:
Source: CN203654473U The utility model relates to a connecting joint of a rectangular concrete filled steel tubular column and a steel reinforced concrete composite beam, and belongs to the field of building structures. The connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam is composed of the rectangular concrete filled steel tubular column, the steel reinforced concrete composite beam, an H–type steel connector, beam stiffening plates and column connecting plates. The H–type steel connector is connected between the end face of the steel reinforced concrete composite beam and the corresponding segment column face of the rectangular concrete filled steel tubular column, the stretching ends of steel bars to be cast on the upper portion of the steel reinforced concrete composite beam and the stretching ends of steel bars at the bottom of a steel–reinforced concrete precast beam of the lower portion of the steel reinforced concrete composite beam are in lap joint with the outer edges of an upper flange plate and a lower flange plate of the H–type steel connector and the outer edges of an upper connecting plate and a lower connection plate of the corresponding segment of the rectangular concrete filled steel tubular column respectively, and integrated onsite cast forming of the beam, the column and the joint structure of the beam and the column is completed on site. According to the connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam, the joint mode of internal separating plate outer stretching connection is adopted, when earthquake acting force is received, plastic deformation happens to the beam ends and a joint area, plastic hinges are formed, and the connecting joint is good in force transmission clear performance and conforms to the strong column and weak beam failure mode in earthquake resistant design codes.

93) Family number: 59210351 (CN204418391U) © PatBase

Title: CONNECTING NODE FOR CONCRETE COMPOSITE BEAM AND CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201510021003 20150116 CN201520029172U 20150116

Family:

Publication number	Publication date	Application number	Application date
CN104563305 A	20150429	CN201510021003	20150116
CN104563305 B	20170329	CN201510021003	20150116
CN204418391 U	20150624	CN201520029172U	20150116

Probable Assignee: JINAN RAILWAY VEHICLES GROUP CO LTD

Assignee(s):(std)**:** JINAN RAILWAY VEHICLES GROUP CO LTD

Assignee(s): JINAN RAILWAY GROUP LTD ; JINAN RAILWAY VEHICLES GROUP CO

Inventor(s):(std)**:** YANG YUNFENG ; WANG GUOFU

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP7292773 A2, CN204418391 U, CN203654473 U, CN203654465 U, CN202181623 U, CN103741812 A, CN103556781 A, CN103243817 A,

Forward Citations: CN105133893, CN105040834, CN104563305,

Abstract:
Source: CN204418391U The utility model belongs to the technical field of building structures, and specifically discloses a connecting node for a concrete composite beam and a concrete filled steel tubular column. The connecting node for the concrete composite beam and the concrete filled steel tubular column comprises the concrete composite beam and the concrete filled steel tubular column, wherein the concrete composite beam is a precast concrete composite beam; the ends of the precast concrete composite beam are provided with embedded steel plates; stirrups are embedded in the upper part of the precast concrete composite beam; longitudinal reinforcement through holes are reserved in the positions, which are corresponding to upper longitudinal reinforcements of the composite beam, of the concrete filled steel tubular column; a corbel is welded at a place, which is corresponding to the bottom elevation of the precast concrete composite beam, of the concrete filled steel tubular column; the corbel consists of bearing platform plates and longitudinal web plates; the embedded steel plates of the precast concrete composite beam are fixedly connected with the bearing platform plates of the corbel; the upper longitudinal reinforcements, which are fixedly arranged on the stirrups embedded at the upper part of the precast concrete composite beam, of the precast concrete composite beam traverse the longitudinal reinforcement through holes reserved in the concrete filled steel tubular column. The labor efficiency is improved; the construction period is shortened; the connection strength and the stability are improved; the industrialization development of a building is promoted.

94) Family number: 33318848 (US2006196132A) © PatBase

Title: MODULAR BUILDING SYSTEM AND METHOD FOR LEVEL ASSEMBLING OF PREFABRICATED BUILDING MODULES

Priority: ES20050000490 20050303

Family:

Publication number	Publication date	Application number	Application date
EP1700964 A2	20060913	EP20060004289	20060302
EP1700964 A3	20061206	EP20060004289	20060302
ES2284306 AA	20071101	ES20050000490	20050303
ES2284306 BA	20080916	ES20050000490	20050303
US2006196132 AA	20060907	US20060366024	20060302
US7594361 BB	20090929	US20060366024	20060302

Probable Assignee: COMPACT HABIT SL

Assignee(s):(std)**:** COMPACT HABIT S L ; RUANO JOSE T

Assignee(s): COMPACT — HABIT SL ; COMPACT HABIT SL

Inventor(s):(std)**:** RUANO JOSE T ; TRAGANT RUANO JOSE

Inventor(s): JOSE TRAGANT RUANO ; RUANO JOSE TRAGANT ; RUANO JOSE

Agent(s): JAMES W PRAVEL PRAVEL INTELLECTUAL PROPERTY LAW PC; LOCKE LORD BISSELL AND LIDDELL LLP; BRANDON T

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8–9): E04B1/348 E04B2/00 E04H1/00 E04H14/00 (Advanced/Invention); E04B2/00 E04H1/00 E04H14/00 (Core/Invention)

CPC: E04G21/142 E04B1/34823 E04B2001/3583 E04G21/161

European class: E04B1/348C2 E04G21/14B E04G21/16B P04B1/35T

US class: 220/1.5 220/4.27 52/236.3 52/582.1 52/79.13 52/79.9

Classification Explorer

Cited documents: WO9840573 A1, WO9738179 A1, US6871453 BB, US6625940 BB, US6109469 A, US5755063 A, US5706614 A, US5678715 A, US5396742 A, US5031794 A, US4942975 A, US4813542 A, US4694621 A, US4599829 A, US4435927 A, US4186841 A, US3990193 A, US3921240 A, US3907147 A, US3871146 A, US3824750 A, US3749273 A, US3690077 A, US3564795 A, US3377755 A, US2007271857 AA, GB1476959 A, FR2430487 A1, FR2209025 A1, ES377340 A1, EP1184521 A1, EP0962603 A1, DE2326277 A1,

Forward Citations: WO13175027, WO13014305, WO09133526, WO08068366, WO08065216, US9663937, US9366020, US9243398, US8935890, US8919058, US8910439, US8429871, US8407964, US8402706, US8365473, US8297002, US8276327, US7963073, US7941975, US7921609, US2014305069, US2014251988, US2012110928, US2011214361, US2011011011, US2009019811, US2008276553, US2008163808, US2007138173, RU2487282, GB2451092, ES2393446, ES2369947, ES2328894, ES2303457, EP2246493, DE102014002497, DE102014002480, DE102012000361,

Abstract:
Source: US2006196132A The modular building system consists of building modules (1) in high resistance, reinforced concrete, to be stacked vertically and placed side–by–side in the construction of preferably residential buildings. Each module (1) forms a monolithic structure or consists of a steel frame (103) and panels (102), with walls, ceiling and floor. These modules (1) include positioning devices (2 and 3) for stacking purposes; side connection elements (5 and 6) between the modules (1); and/or horizontal and vertical tightening bands (104 and 105). These modules are levelled by using levelling sheets and/or non–retraction mortar and/or a method with jacks (108) and tubular sections (109) filled with non–retraction mortar (193) until it sets and the jacks (108) are removed. Each building module (1) includes all the accessories and finishing elements of a home, such as facades, windows, utilities, furniture and interior equipment considered useful.

0) CN202466844U – TOP LAYER NODE CONNECTING STRUCTURE FOR CONCRET...

95) Family number: 52090047 (CN202466844U) © PatBase

Title:	TOP LAYER NODE CONNECTING STRUCTURE FOR CONCRETE–FILLED STEEL TUBE COLUMN AND STEEL REINFORCED CONCRETE BEAM
Priority:	CN201220088156U 20120309

Family:

Publication number	Publication date	Application number	Application date
CN202466844 U	20121003	CN201220088156U	20120309

Probable Assignee:	CN RAILWAY SIYUAN SURVEY AND DES
Assignee(s):(std)**:**	CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO LTD ; CN RAILWAY SIYUAN SURVEY AND DES
Assignee(s):	CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO
Inventor(s):(std)**:**	DAN ZHU ; DUANWEN SHI ; TING SHEN ; XING YU ; YE JIANG ; YUANZHOU CHEN
Inventor(s):	ZHU DAN ; CHEN YUANZHOU ; YU XING ; JIANG YE ; SHEN TING ; SHI DUANWEN
International class (IPC 8–9):	E04B1/41 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103993671,

Abstract:
Source: CN202466844U The utility model discloses a top layer node connecting structure for a concrete–filled steel tube column and steel reinforced concrete beams, which includes a concrete–filled steel tube column and four steel reinforced concrete beam, wherein the steel reinforced concrete beams include section steel plates and beam steel bars arranged at the outer parts of the section steel plates; beam steel bars are arranged at the top end of the concrete–filled steel tube column; upper reinforcing ring plates and lower reinforcing ring plates of the node connecting structure are all fixedly connected with the concrete–filled steel tube column; ring plate are fixed on the concrete–filled steel tube column below the lower reinforcing ring plates; the upper reinforcing ring plates are fixed with section steel top flanges of the section steel plates; the lower reinforcing ring plates are fixed with section steel bottom flanges of the section steel plates; the ring plates are fixed with the beam steel bars arranged at the lower parts of the section steel plates; and rib plates are fixed on the concrete–filled steel tube column between two adjacent steel reinforced concrete beams. According to the utility model, a node core area is formed through the node ring beams, so that a structure of strong nodes and weak members is realized, section size and deformation of beam columns can be effectively reduced, and the top layer node connecting structure is suitable for big–span project construction.

0) US2008098676A – CONNECTORS AND METHODS OF CONSTRUCTION FOR A PR...

96) Family number: 41770201 (US2008098676A) © PatBase

Title: CONNECTORS AND METHODS OF CONSTRUCTION FOR A PRECAST SPECIAL CONCRETE MOMENT RESISTING SHEAR WALL AND PRECAST SPECIAL CONCRETE MOMENT RESISTING FRAME BUILDING PANEL SYSTEM

Priority: US20060554611 20061031

Family:

Publication number	Publication date	Application number	Application date
US2008098676 AA	20080501	US20060554611	20061031

Probable Assignee: HUTCHENS JOHN FRANCIS

Assignee(s):(std)**:** HUTCHENS JOHN FRANCIS

Inventor(s):(std)**:** HUTCHENS JOHN FRANCIS

Agent(s): JOHN F HUTCHENS

International class (IPC 8–9)**:** E04B1/38 E04B7/00 (Advanced/Invention); E04B1/38 E04B7/00 (Core/Invention)

CPC: B28B7/0026 B28B7/0032 B28B19/003 B28B23/00 B28B23/0025 E04B1/043 E04B1/06 E04B2/86 E04B2002/8682

European class: B28B19/00E B28B23/00 B28B23/00D B28B7/00A7D B28B7/00B2 E04B1/04B E04B1/06 E04B2/86 P04B2/86R

US class: 52/281 52/281P 52/282.3 52/282.300S

Classification Explorer

Forward Citations: US9267283, US9090497, US8782993, US8640419, US2017044754, US2013319937, US2012247055, US2012210669, CN104074314, CN103530459, CN102127941, CN102002977,

Abstract:
Source: US2008098676A A precast concrete wall panel molding system for fabricating a wall shell and a plurality of ribs and beams. A precast concrete wall panel molding system with facilities for incorporating door and window frames. A ductile panel end connector for attaching panels one to another whether in parallel or angled as in inside or outside corners. A ductile panel end connector for attaching panels to columns. A wall anchor/shear plate with post–tensioning brace plate. A hybrid precast/cast–in–place special moment resisting shear wall/special moment resisting frame reinforced concrete building system for regions of potential seismic activity. A prescriptive method building system for composite structural building assemblies with conventional wood and light–gauge steel framing, structural steel, and other building code approved and tested building systems, building components, building panel systems, building roofing systems, modular and manufactured buildings, and building electrical, mechanical, and plumbing systems. A precast concrete wall panel system conforming to industry practices and standards as published by the Precast/Prestressed Concrete Institute, (PCI) in it's "PCI Design Handbook" (fifth edition, 1999), the American Concrete Institute "Building Code Requirements for Structural Concrete" (ACI 318–05), The "International Building Code 2006" and the "Uniform Building Code".

0) NZ621503A – HOLLOW SECTION STRUCTURAL MEMBER

97) Family number: 57316261 (NZ621503A) © PatBase

Title: HOLLOW SECTION STRUCTURAL MEMBER

Priority: AU20130900566 20130220 AU20140200899 20140220

Family:

Publication number	Publication date	Application number	Application date
AU2014200899 AA	20140904	AU20140200899	20140220
NZ621503 A	20150925	NZ20140621503	20140220

Probable Assignee: NEW ZEALAND STEEL LTD

Assignee(s):(std)**:** NEW ZEALAND STEEL LTD

Inventor(s):(std)**:** CLEMENTS NICHOLAS ALEXANDER STEPHEN ; NICHOLAS ALEXANDER STEPHEN CLEMENTS

Agent(s): GRIFFITH HACK

International class (IPC 8–9): E04B1/24 E04B1/30 E04C3/30 E04C3/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: NZ621503A A hollow section structural member 10 suitable to form an outer wall of a concrete–filled column in a framework of a multi–storey building, the hollow section structural member comprising two or more steel plates 12, 14 that form different portions of the hollow section structural member, at least one of the steel plates being folded and with the steel plates being welded together and forming the hollow section structural member, and connectors fastened to a surface of one or more of the steel plates, and with at least one of the steel plates having one or more openings for (a) receiving a beam, (b) venting vapour from internally of the hollow section structural member, or (c) enabling drainage of water from internally of the member.

0) AU2016250441A – A METHOD OF CONSTRUCTING A COLUMN, A SUBTERRANE...

98) Family number: 65638911 (AU2016250441A) © PatBase

Title: A METHOD OF CONSTRUCTING A COLUMN, A SUBTERRANEAN STRUCTURE, AND A STRUCTURE MADE FROM THE METHOD

Priority: AU20150904406 20151027 AU20150904407 20151027

Family:

Publication number	Publication date	Application number	Application date
AU2016250437 AA	20170511	AU20160250437	20161027
AU2016250441 AA	20170511	AU20160250441	20161027

Probable Assignee: ADVANCED SUBSTRUCTURES LTD

Assignee(s):(std)**:** ADVANCED SUBSTRUCTURES LTD

Inventor(s):(std)**:** AIREY PETER GRANT ; MATTY BASSAM SULEIMAN

Agent(s): WRAYS PTY LTD

International class (IPC 8–9)**:** E02D17/04 E02D17/08 E02D17/13 E02D27/12 E02D27/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: AU2016250441A Abstract The present invention provides a method of constructing a subterranean structure (11) and a column (19) used for same. The method comprises the steps of installing at least one retaining wall (15), creating at least one hole (18) and forming the column (19) therein, forming a slab (17) supported by the at least one retaining wall and the at least one column. An access way is formed when forming the slab to provide access under the slab. The method further comprises the step of excavating under the slab to provide the subterranean structure. 4 g4 E Figure 8

0) AU2010249311A – FOUNDATION STRUCTURE AND FOUNDATION CONSTRUCTIO...

99) Family number: 51436371 (AU2010249311A) © PatBase

Title: Foundation structure and foundation construction method

Priority: AU20100249311 20101213

Family:

Publication number	Publication date	Application number	Application date
AU2010249311 AA	20120628	AU20100249311	20101213
AU2010249311 BB	20141211	AU20100249311	20101213

Probable Assignee: SEKISUI HOUSE KK

Assignee(s):(std)**:** SEKISUI HOUSE KK

Assignee(s): SEKISUI HOUSE LTD

Inventor(s):(std)**:** HARAYAMA KOJI ; HATAE TOMOYA

Agent(s): GRIFFITH HACK

International class (IPC 8–9): E02D27/01 E02D27/08 E04B1/24 (Advanced/Invention)

Classification Explorer

Cited documents: JP4108920 A2, JP2005068858 A2, JP2003147780 A2, JP2000034735 A2,

Abstract:
Source: AU2010249311A A B S T R A C T Footing beam (1) making up a strip footing made of reinforced concrete has rectangular cross−sectional shape, being taller than it is wide, and has encased therewithin pair(s) of upper and lower main reinforcements (11, 12) and stirrup(s) (13); and footing slab (2) also making up same has approximately quarter−circle fan−shaped cross−sectional shape which is convex as viewed from above where it emerges to either side at a lower portion of the footing beam (1). Surface(s) of footing slab (2), such surface(s) being convex as viewed from above, is/are formed by causing at least a portion of footing slab form(s) (20), having approximately quarter−circle arcuate cross−section, to be left in place and cast into concrete. Set within footing beam (1) are at least two paired anchor bolts (3), which are respectively encased within cylindrical sheaths (31) in such fashion as to prevent grabbing thereof by concrete, and the respective lower ends of which are linked together in integral fashion by way of anchor plate(s) (32).

0) CN101818478A – CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCUL...

100) Family number: 46785759 (CN101818478A) © PatBase

Title: CONNECTION STRUCTURE FOR CONCRETE–FILLED CIRCULAR STEEL TUBULAR PIER COLUMN AND CONCRETE COVER BEAM

Priority: CN201010120563 20100309

Family:

Publication number	Publication date	Application number	Application date
CN101818478 A	20100901	CN201010120563	20100309
CN101818478 B	20120725	CN201010120563	20100309

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; HOHAI UNIVERSITY ; UNIV HOHAI ; UNIV HEHAI

Assignee(s): HEHAI UNIVERSITY

Inventor(s):(std)**:** BOHAI JI ; HAIFENG MO ; YADONG DONG ; ZHONGQIU FU

Inventor(s): JI BOHAI ; MO HAIFENG ; DONG YADONG ; FU ZHONGQIU

International class (IPC 8–9): E01D19/02 (Advanced/Invention); E01D19/02 (Core/Invention)

Classification Explorer

Cited documents: JP2005030119 A2, JP2002097609 A2, CN2507939 Y, CN1963105 A, CN1560369 A, CN1548654 A, CN101476348 A,

Forward Citations: CN105926427, CN105803925, CN105803925, CN104404869, CN103452039, CN103452039, CN103147460,

Abstract:
Source: CN101818478A The invention discloses a connection structure for a concrete–filled circular steel tubular pier column and a concrete cover beam. The connection structure comprises a reverse T–shaped steel beam, the concrete cover beam and the concrete–filled circular steel tubular pier column, wherein the reverse T–shaped steel beam is pre–buried at the lower end of the concrete cover beam. The connection structure is characterized by also comprising a steel tubular cover plate and a riveting rib with a nut, wherein the steel tubular cover plate is welded with the upper end of the concrete–filled circular steel tubular pier column; the hole on the web plate of the reverse T–shaped steel beam is connected with the concrete; a flange plate of the T–shaped steel beam is fixedly connected with the steel tubular cover plate through the riveting rib with the nut; and the two ends of the riveting rib with the nut are embedded in the concrete cover beam and the concrete–filled circular steel tubular pier column. The connection structure needs no complex arrangement of reinforcement, and each component can be processed in the factory and assembled on site. Only welding of a triangular supporting steel plate and the steel tubular cover plate is needed on site so as to ensure small workload and definite force transferring path. The connection structure has the advantages of simple and quick construction during the implementation.

- **search:** SS19 FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor* and PD<20160302 (Results 551)
- List: SS19 1–50 (FT=steel and plate* and column and (concrete filled or in–filled or filled) and concrete and reinfor* and PD<20160302) (Results 551)

0) US2015345159A – REINFORCING STRUCTURE FOR CONCRETE COLUMN

1) Family number: 55381052 (US2015345159A) © PatBase

Title: REINFORCING STRUCTURE FOR CONCRETE COLUMN

Priority: JP20130006483 20130117 JP20130006486 20130117 WO2014IB58277 20140115

Family:

Publication number	Publication date	Application number	Application date
AU2014206512 AA	20140724	AU20140206512	20140115
AU2014206512 BB	20160317	AU20140206512	20140115
CA2892302 AA	20150522	CA20142892302	20140115
CA2892302 C	20170314	CA20142892302	20140115
EP2946048 A1	20151125	EP20140702645	20140115
HK1216111 A1	20161014	HK20160104128	20160412
JP2014136923 A2	20140728	JP20130006483	20130117
JP2014136924 A2	20140728	JP20130006486	20130117
JP5361100 B1	20131204	JP20130006486	20130117
JP5411367 B1	20140212	JP20130006483	20130117
US2015345159 AA	20151203	US20140653341	20140115
US9353536 BB	20160531	US20140653341	20140115
WO14111851 A1	20140724	WO2014IB58277	20140115

Probable Assignee: SANYO HOME CO LTD

Assignee(s):(std)**:** SANYO HOME CO LTD ; SANYOHOME CO LTD

Assignee(s): YAMAKAWA HIROSHI ; SANYOHOME CO

Inventor(s):(std)**:** YAMAKAWA HIROSHI

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; BERESKIN AND PARR LLP SENCRL SRL; UEXKUELL AND STOLBERG; RENNER OTTO BOISSELLE AND SKLAR LLP; YAMAMOTO SHUSAKU ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D37/00 E04G23/00 E04G23/02 (Advanced/Invention); E04G (Subclass/Invention)

CPC: E04G23/0218 E04G2023/0251 E04G23/0225

US class: 1/1 52/514.5

Classification Explorer

Cited documents: US6006488 A, US4892601 A, US4439071 A, US4306821 A, US4071996 A, US3798867 A, US3355852 A, US2013055660 AA, US2003089063 AA, JP9177334 A2, JP9095910 A2, JP9095910, JP2012127130, JP2012036636 A2, JP2012036636, JP2012007418 A2, JP2012007418, JP2009095910 A2, JP2007002512 A2, JP2007002512, JP2005350878 A2, JP2005023745 A2, JP2005023745, JP2003113674, JP2000110365, JP11081554 A2, JP10220030 A2,

Forward Citations: WO16198913, US9476212, US2016145882, US2015354238, JP6117974, JP6095187, JP6047704, JP6047704, JP6016313, JP5984273, JP5869717, JP5850480, JP5830803, JP5780442, JP5641530, JP2017020261, JP2017014713, JP2017002549, JP2016204844, JP2016108806, JP2015206178, JP2015143465, JP2015086690, JP2015063890,

Abstract:
Source: US2015345159A A reinforcing structure for a concrete column is provided, which is capable of preventing the concrete column from being destroyed. A reinforcing structure for a concrete column comprises: a plurality of steel plates 6, overlapping portions of which are arranged to be slidable with each other by vibration due to an

external force; grout material 7 filled into a space portion 3 formed in between the plurality of steel plates 6 and a concrete column 1; and a reinforcing sheet 5 with adhesive wound around an outer circumference of the plurality of steel plates 6, wherein: the plurality of steel plates 6 are bound by the reinforcing sheet with adhesive. Preferably, a restricting portion 12 is provided for restricting sliding movement of the overlapping portions, at the overlapping portions of the plurality of steel plates 6.

0) US4722156A – CONCRETE FILLED STEEL TUBE COLUMN AND METHOD OF...

2) Family number: 29121419 (US4722156A) © PatBase

Title: Concrete filled steel tube column and method of constructing same

Priority:

CA19860503158 19860303
CA19860505996 19860407
JP19850042979 19850305
JP19850045285 19850307
JP19850087172 19850423
CA19880568735 19880606
JP19850193388 19850902
JP19850210453 19850924
JP19850210454 19850924
JP19850210456 19850924
JP19850087173 19850423
JP19850146386 19850703
JP19850156365 19850716
JP19850156366 19850716
JP19860001463 19850703
US19870107680 19871009
US19860899549 19860822
US19860847495 19860403
US19860835954 19860304
JP19870234374 19870918
JP19880080444 19880401
JP19860003179 19860110
JP19850299531 19851228
JP19850241049 19851028
JP19850295377 19851225

Family:

Publication number	Publication date	Application number	Application date
CA1259808 A1	19890926	CA19860503158	19860303
CA1273179 A1	19900828	CA19860505996	19860407
CA1300920 A1	19920519	CA19880568735	19880606
CN1008461 B	19900620	CN19861001986	19860303
CN1008643 B	19900704	CN19861006236	19860902
CN1009291 B	19900822	CN19861003232	19860506
CN1017364 B	19920708	CN19881004690	19880730
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CN86101986 A	19860903	CN19861001986	19860303
CN86103232 A	19870318	CN19861003232	19860506
CN86106236 A	19870805	CN19861006236	19860902
DE3676021 D1	19910117	DE19863676021	19860822
DE3679957 D1	19910801	DE19863679957	19860403
DE3681944 D1	19911121	DE19863681944	19860305
DE3884117 D1	19931021	DE19883884117	19880610
DE3884117 T2	19940505	DE19883884117T	19880610
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EP0195552 B1	19911016	EP19860301552	19860305
EP0214800 A2	19870318	EP19860306519	19860822
EP0214800 A3	19870527	EP19860306519	19860822
EP0214800 B1	19901205	EP19860306519	19860822
EP0218313 A2	19870415	EP19860302470	19860403
EP0218313 A3	19890607	EP19860302470	19860403
EP0218313 B1	19910626	EP19860302470	19860403
EP0308038 A1	19890322	EP19880305320	19880610
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KR940009460 B1	19941013	KR19880007707	19880625	
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US5012622 A	19910507	US19900503147	19900330	

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Inventor(s): HOSOKAWA OSAMU SUGINAMI KU TOKYO JP ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD CHUO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO LTD ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L... ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO L CHUO K ; NAKAMURA YASUKAZU MATSUDO SHI CHIBA KEN JP ; NAKAJIMA HIDEO SHIMIZU CONSTRUCTION CO LTD ; KOSHIDA KAZUNORI HINO SHI TOKYO JP ; KITAGAWA SEIHO SHIKI SHI SAITAMA KEN JP ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI... ; NAKASHIMA HIDEO MIDORI KU YOKOHAMA SHI KANAGAWA KE ; SHIOKAWA HIDEYO INBA GUN CHIBA KEN JP ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD CHUO K ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI TOKYO JP ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SATO TAKANORI SHIMIZU CONSTRUCTION CO LTD ; SATO TAKANORI SHIMIZU CONSTRUCTION CO L ; SATO TAKANORI SETAGAYA KU TOKYO JP ; SANO TAKESHI TAMA SHI TOKYO JP ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD CHUO KU T ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO LTD ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD CHUO K ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO LTD ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD CHUO KU ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD CHUO ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LTD ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO LT ; WANTANABE YASUSHI OHTA KU TOKYO JP ; WATANABE YASUSHI SHIMIZU CONSTRUCTION CO ; SHIOKAWA HIDEYO SHIMIZU CONSTRUCTION CO ; SATO TAKANORI SHIMIZU CONSTRUCTION CO ; SAITO YUTAKA SHIMIZU CONSTRUCTION CO ; ORITO YOSHIHIRO SHIMIZU CONSTRUCTION CO ; NAKAMURA YASUKAZU SHIMIZU CONSTRUCTION CO ; IKEDA KENICHI SHIMIZU CONSTRUCTION CO ; SHOKAWA TOMOO SHIMIZU CONSTRUCTION CO

Agent(s): MARKS AND CLERK

Designated states: DE FR GB

International class (IPC 8–9): B23K9/02 B23K9/028 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/22 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 (Advanced/Invention); B23K9/02 B23K9/028 E02D5/24 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/20 E04C3/29 E04C3/30 (Core/Invention)

International class (IPC 1–7): B23K31/06 C04C3/36 E02D5/00 E02D5/24 E02D5/30 E04B1/16 E04B1/20 E04B1/30 E04B1/58 E04C3/22 E04C3/293 E04C3/30 E04C3/32 E04C3/34 E04C3/36

CPC: E04B1/165 E04B1/30 E04C3/34 E02D5/30 Y02T10/7005

European class: E02D5/30 E04B1/16D E04B1/30 E04C3/34

US class: 264/256 264/262 52/263 52/721 52/721.4 52/724 52/725 52/726 52/726.1 52/726.3 52/742.14 52/834 52/848 52/98

Classification Explorer

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Forward Citations: WO9851883, WO13120138, WO13016683, WO11072451, WO10018491, WO09090301, WO08157768, WO03054321, US9677273, US9523188, US9248957, US9096999, US9067721, US8941270, US8888413, US8850750, US8484915, US8468775, US8250833, US8104242, US8056297, US7811495, US7475651, US7143554, US7107730, US6665990, US6655877, US6189286, US6141918, US6119425, US6061992, US5934035, US5678375, US5577857, US5423634, US5399169, US5285614, US5218802, US5174080, US5066834, US4864797, US2016251865, US2014000207, US2013133278, US2012114425, US2010319280, US2010071275, US2009313913, US2009038263, US2009021019, US2007261356, US2007199252, US2007175577, US2007028541, US2006174549, US2004055234, US2003029111, RU2597909, RU2496949, RU2495987, JP7139090, JP7034540, JP64062535, JP64033343, JP63223250, JP6093357, JP5915425, JP5734169, JP5033493, JP4491099, JP4304039, JP4094004, JP3941899, JP3778348, JP3013329, JP2697394, JP2575761, JP2080729, JP2014527470, JP2014015773, JP2013112973, JP2009061727, JP2005113413, JP2003138648, JP2000282578, JP1142146, JP11181957, JP1062535, JP1033343, ITTV20090161, FR2841579, FR2833632, EP0982447, EP0308038, EA10211, EA017610, EA010211, DE10261604, CN105178512, CN104790976, CN104763162, CN104405123, CN104120833, CN104006283, CN104006283, CN103967209, CN103924738, CN103924738, CN103422620, CN103422620, CN103122676, CN103122676, CN103061566, CN102677824, CN102635064, CN102635063, CN102409809, CN102322113, CN102134891, CN102011432, CN101982629, CN101806118, CN101793055, CH691691, AT502604,

Abstract:
Source: US4722156A An concrete filled steel tube column and method of constructing same. The concrete filled steel tube column includes a steel tube having an inner face; a concrete core disposed within the steel tube; and a separating layer interposed between the inner face of the steel tube and the concrete core for separating the concrete core from the inner face of the steel tube so that the steel tube may not be bonded to the concrete core. After the separating layer is formed on the inner face of the steel tube, the concrete is charged into the steel tube to form a concrete core.

0) US2015321838A – STEEL PLATE AND CONCRETE TANK UNIT, TANK GROUP ...

3) Family number: 57052994 (US2015321838A) © PatBase

Title: STEEL PLATE AND CONCRETE TANK UNIT, TANK GROUP AND OFFSHORE PLATFORMS

Priority: AU20130375773 20130122 CN201480001337 20140122 US20150805398 20150721 WO2013CN070808 20130122 WO2014CN071120 20140122 WO2014CN071121 20140122

Family:

Publication number	Publication date	Application number	Application date
AU2013375773 AA	20140731	AU20130375773	20130122
AU2013375773 BB	20160204	AU20130375773	20130122
AU2014210247 AA	20140731	AU20140210247	20140122
AU2014210247 BB	20160211	AU20140210247	20140122
CA2897223 AA	20150706	CA20142897223	20140122
CA2897267 AA	20150706	CA20132897267	20130122
CA2897267 C	20160906	CA20132897267	20130122
CN104321247 A	20150128	CN201480001335	20140122
CN104321247 B	20170412	CN201480001335	20140122
CN104395530 A	20150304	CN201480001337	20140122
CN104395530 B	20160824	CN201480001337	20140122
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CN104968583 B	20161221	CN201380069107	20130122
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WO14114235 A1	20140731	WO2014CN71120	20140122
WO14114236 A1	20140731	WO2014CN71121	20140122

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Inventor(s): ZHIRONG WU

Agent(s): FB RICE; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; BEIJING SANYOU INTELLECTUAL PROPERTY AGENCY LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B35/44 B65D88/02 B65D88/78 E02B17/00 E02B17/02 E02B17/06 E02D23/02 E02D23/10 E02D25/00 E02D27/12 E02D27/18 E02D27/20 E02D27/38 E02D27/52 E02D29/00 E02D29/09 E04H7/02 E04H7/04 E04H7/18 E21B43/01 (Advanced/Invention)

CPC: F17C2201/0104 F17C2201/054 F17C2203/0341 F17C2203/0362 F17C2203/0379 F17C2203/0631 F17C2203/0639 F17C2203/0678 F17C2205/0111 F17C2221/033 F17C2221/035 F17C2223/0153 F17C2223/0161 F17C2223/033 E02B2017/0069 B65D88/02 E04H7/04 E04H7/18 E02B17/0017 E02B17/027 E02D27/12 E02D27/38 E02D27/525 E02D29/00 E02B2017/0043 E02B2017/0056 E02B17/02 B63B35/4413 E02B17/06 B63B2035/442 B63B2035/448 E02B2017/0039 E02D27/20 E02D23/02 E02D23/10 E02D25/00 E02D27/18 E02D27/52 E02D29/06 E04H7/02 E02B17/025 B63B35/44 B65D88/78 E02B17/00 E02B2017/0078

US class: 220/567.1 405/203 405/204 405/205 405/210 405/211 405/224.1 405/8

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Cited documents: WO9729948 A1, US7114884 BB, US6786679 BB, US6408780 BA, US6340272 BA, US6244785 BA, US5791819 A, US5609442 A, US4966495 A, US4733993 A, US4703709 A, US4498412 A, US4428702 A, US429575 A, US4234270 A, US4202647 A, US4124989 A, US3999395 A, US3921558 A, US3766583 A, US3709307 A, US3630161 A, US3550385 A, US3537268 A, US3510892 A, US34426 A, US2402790 A, US2013032075 AA, US2012003048 AA, US2011013989 AA, US2010051624 AA, US2007140795 AA, US2005039667 AA, US2003152429 AA, US2003140838 AA, US2003024459 AA, US2002154954 AA, JP55075009 A2, GB2324778 B2, CN201678202 U, CN201647096 U, CN200971492 Y, CN102756793 A, CN102080369 A, CN101966868 A, CN101666080 A, CN101544272 A, CN101544270 A, CN101255701 A, CN101148951 A, CN101032997 A,

Forward Citations: WO16115426, WO16057958, WO16004847, US2017107713, US2016101836,

Abstract:
Source: US2015321838A A steel plate and concrete composite tank unit, tank groups and offshore platforms with new type of tank units are disclosed. The tank unit comprises an outer concrete tank that comprises an outer tank shell, two heads and ring shell connections at both ends, an inner steel tank that comprises an inner tank shell, epitaxial structures at both ends of the inner steel tank. Inner tank shell is connected to the outer tank shell by epitaxial structures, and an isolation layer that is formed from the gap between the outer concrete tank and the inner steel tank where it is filled with isolation medium.

0) US6041561A – SELF–CONTAINED MOLDED PRE–FABRICATED BUILDING P...

4) Family number: 23411547 (US6041561A) © PatBase

Title: Self–contained molded pre–fabricated building panel and method of making the same

Priority: US19970916626 19970822 US19990470943 19991222 WO1998US17169 19980819

Family:

Publication number	Publication date	Application number	Application date
AU199891992 A1	19990316	AU19980091992	19980819
CA2272588 AA	19990521	CA19982272588	19980819
EP0972121 A2	20000119	EP19980944455	19980819
US6041561 A	20000328	US19970916626	19970822
US6401417 BA	20020611	US19990470943	19991222
WO9910607 A2	19990304	WO1998US17169	19980819
WO9910607 A3	19990514	WO1998US17169	19980819

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Assignee(s): DENNIS LEBLANG ; LEBLANG WAYNE

Inventor(s):(std)**:** LEBLANG DENNIS

Inventor(s): DENNIS LEBLANG

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BORDEN LADNER GERVAIS LLP

Designated states: AM AT AU AZ BE BR BY CA CH CN CY CZ DE DK EE ES FI FR GB GR HU IE IL IT JP KG KR KZ LI LT LU LV MC MD MX NL NO NZ PL PT RO RU SE SG SK TJ TM TR UA

International class (IPC 8–9): E04B1/14 E04B1/16 E04B1/76 E04B2/00 E04B5/29 E04B7/20 E04C2/06 E04C2/284 E04C2/38 E04H4/00 (Advanced/Invention); E04B1/76 (Advanced/Non–invention); E04B1/02 E04B1/16 E04B5/17 E04B7/00 E04C2/06 E04C2/38 E04H4/00 (Core/Invention); E04B1/76 (Core/Non–invention)

International class (IPC 1–7): E04B2/00 E04C2/284 E04C3/02 E04H1/00

CPC: E04B1/14 E04B1/164 E04B5/29 E04B7/20 E04B2001/7679 E04C2/06 E04C2/384 E04H4/0087

European class: E04B1/14 E04B1/16C E04B5/29 E04B7/20 E04C2/06 E04C2/38C E04H4/00D2 P04B1/76M

US class: 52/234 52/309.12 52/481.1 522/340

Classification Explorer

Cited documents: USRE29965 E, US6023898 A, US6006484 A, US5943838 A, US5930968 A, US5797233 A, US5787665 A, US5709058 A, US5695443 A, US5678361 A, US5655344 A, US5526629 A, US5524412 A, US5491947 A, US5483777 A, US5218803 A, US5216863 A, US5092100 A, US5055252 A, US4934121 A, US4930278 A, US4909007 A, US4885884 A, US4751803 A, US4669240 A, US4649682 A, US4638615 A, US4622796 A, US4619032 A, US4605529 A, US4570398 A, US4494353 A, US4435936 A, US4276730 A, US4271111 A, US4235054 A, US4194336 A, US4047355 A, US4021989 A, US3965635 A, US3885008 A, US3730476 A, US3562970 A, US3305981 A,

Forward Citations: WO12135954, WO11077386, WO10014192, WO08007986, WO07096888, WO04001146, WO0133006, US9677268, US9663952, US9631363, US9493938, US9447557, US9399867, US9315988, US9260874, US9132461, US9074380, US9033303, US9016027, US8993462, US8991133, US8973334, US8950231, US8938926, US8904737, US8800227, US8763331, US8671637, US8656673, US8627636, US8607531, US8499526, US8495846, US8444789, US8429866, US8341907, US8297018, US8297016, US8281535, US8234833, US8201368, US8176696, US8161699, US8136248, US8109058, US8109055, US8079189, US8015771, US7998571, US7958687, US7905073, US7905062, US7805908, US7790784, US7788879, US7757454, US7713615, US7685789, US7596915, US7524555,

US7523591, US7421828, US7409800, US7313891, US7254925, US7137225, US7127858, US7040066, US7032356, US7017316, US6907708, US6907695, US6729094, US6698150, US6676102, US6622452, US6519900, US2015159372, US2015121791, US2014308509, US2014115989, US2014115988, US2013234002, US2012317902, US2012137610, US2012079784, US2012066988, US2012000593, US2011225910, US2011099940, US2011099930, US2011016800, US2011011006, US2010325988, US2010313500, US2010300012, US2010257805, US2010218446, US2010146874, US2010139177, US2010132291, US2010107539, US2010107536, US2010088975, US2010058700, US2009255196, US2009235598, US2009224134, US2009199500, US2009193733, US2009126305, US2009126304, US2009107065, US2009062431, US2009062413, US2009056257, US2008245013, US2008120942, US2008115450, US2008083180, US2007289239, US2007286688, US2007227087, US2007227086, US2007204540, US2007186497, US2007062151, US2007062144, US2006236653, US2006197257, US2006185290, US2006177279, US2006137269, US2006096236, US2006096222, US2006075701, US2006037282, US2006026925, US2005284101, US2005284071, US2005257494, US2005209414, US2005193678, US2005188635, US2005087908, US2005086900, US2005055935, US2005034418, US2005000178, US2004255534, US2004139674, US2004118069, US2004016194, US2003167722, US2003159391, RU2548262, GB2502713, FR2914664, FR2885624, EP1754842, CN103132690, CN103132690, BE1019464, AU2010334410,

Abstract:
Source: US6041561A The invention provides pre−fabricated self−contained building panels, including a panel incorporating a truss structure as a part thereof, and combinations thereof. The panels include a skeletal assembly comprising generally an array of plural structural steel channels, rigid sheeting proximate to said channels, support members adjacent the rigid sheeting, the channels supported between suitable base plates, angles for defining portions of said skeletal assembly and a forming structure as a part of said skeletal assembly, said skeletal assembly and forming structure being oriented horizontally on a planar surface. A self−hardening material, such as concrete, clay, etc. is introduced to the forming structure for embedding at least a portion of said skeletal assembly. The forming structure becomes an integral part of the completed building panel and is not disassembled therefrom. Angles are included as a part of the skeletal assembly for defining receiving chambers for self−hardening material such as concrete, clay and the like. A building truss including a pair of double−angle struts and a web−reinforcement bar threaded therealong, as well as rigid sheeting arranged to define a receiving chamber for the self−hardening material, is provided and combined as a part of the above mentioned building panels. A moulding and means to enable press−seating thereof in a wet concrete wall are disclosed as is a flexible brick facing also pressed into a wet concrete wall. The skeletal structures function as forms for forming the panel and/or the truss combined therewith. Forms also are described forming various architectural bodies and forms.

0) US2016298333A – THREE–DIMENSIONAL LIGHTWEIGHT STEEL TRUSS WITH ...

5) Family number: 56407188 (US2016298333A) © PatBase

Title: THREE–DIMENSIONAL LIGHTWEIGHT STEEL TRUSS WITH BI–DIRECTIONAL CONTINUOUS DOUBLE BEAMS

Priority: CN201410035766 20140124 CN201510038133 20150126 WO2015CN071574 20150126 CN201520052886U 20150126

Family:

Publication number	Publication date	Application number	Application date
CN103790231 A	20140514	CN201410035766	20140124
CN105297887 A	20160203	CN201510038133	20150126
EP3085844 A1	20161026	EP20150740446	20150126
IN201617027483 A	20161230	IN201617027483	20160811
JP2017503942 T2	20170202	JP20160548224T	20150126
PH2016500906 A	20160704	PH20160500906	20160516
TW201529938 A	20150801	TW20140113340	20140411
TW201608086 A	20160301	TW20150102603	20150126
TWM522974 Y	20160601	TW201502012431U	20150126
US2016298333 AA	20161013	US20150037584	20150126
WO15110081 A1	20150730	WO2015CN071574	20150126

Probable Assignee: CHENGDU CHANGMIN CENTURY CONSTRUCTION CO LTD

Assignee(s):(std)**:** CHENGDU CHANGMIN CENTURY CONSTRUCTION CO LTD ; CHUN HSIEH YING ; HSIEH YING CHUN ; XIE YINGJUN

Assignee(s): CHENGDU CHANG CHINA CENTURY TECHNOLOGY CO LTD BUILDING ; CHENGDU CHANGMIN CENTURY CONSTRUCTION CO

Inventor(s):(std)**:** CHUN HSIEH YING ; HSIEH YING CHUN ; XIE YINGJUN

Agent(s): BECKER KURIG STRAUS; OHNUKI SHINSUKE; ITOH TADAHIKO; ITOH TADASHIGE; BEIJING GLOBE LAW LAW FIRM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/19 E04B1/24 E04B1/28 E04B1/30 E04B1/38 E04B1/58 E04B1/62 E04B1/80 E04B2/56 E04B2/86 E04B5/40 E04B7/20 E04C3/04 E04C3/08 E04C3/36 E04C5/06 E04C5/065 E04C5/16 (Advanced/Invention)

CPC: E04B2/845 E04B2/847 E04B2/8658 E04B5/40 E04B2001/2415 E04B2001/2448 E04B2001/2454 E04B2001/2457 E04B2001/2463 E04B2001/2466 E04B2001/2472 E04B2001/2478 E04B2001/2481 E04B2001/2484 E04B2001/2496 E04C3/34 E04C5/065 E04C5/0636 E04C5/162 E04C3/04 E04C3/08 E04C3/36 E04B1/28 E04B2/86 E04B7/20 E04C2003/0413 E04C2003/0404 E04B1/24 E04C2003/0491

US class: 52/649.2

Classification Explorer

Cited documents: US9512616 BB, US8915042 BB, US8281534 BB, US7642550 BB, US7299596 BB, US5941035 A, US5289665 A, US4342177 A, US3600868 A, TWM377446 Y, CN204940522 U, CN203296170 U, CN201502135 U, CN201310664792, CN201310044986, CN201110023291, CN201010216616, CN200920171128, CN200920158989, CN200920147815, CN1338548 A, CN103790231 A, CN103711230 A, CN103114668 A,

Forward Citations: WO15110081, CN104963408,

Abstract:
Source: US2016298333A Disclosed is a three–dimensional lightweight steel framework formed by two–way

continuous double beams. The three–dimensional lightweight steel framework comprises beams (1), purlines and/or stringers (16), pillars (2), walls (62, 63), slabs (31) and/or a roof and anti–lateral force bracings (41) and/or pull rods (42), wherein the beams (1) are continuous double beans, and the continuous double beams are formed by combining continuous single beams having the same structure or different structures, and the continuous single beams are respectively arranged at two sides of the outer edges of the pillars (2), and keep continuous and uninterrupted with the pillars (2) at the crosswise junctions; and reinforced lightweight composite slabs can be selected as the slabs (31) completely or partly. The three–dimensional lightweight steel framework simplifies the production of a lightweight steel member, and simplifies the site installation by using bolts to conduct fixing.

0) US5410847A – JUNCTION STRUCTURE BETWEEN STEEL MEMBER AND STR...

6) Family number: 7174690 (US5410847A) © PatBase

Title: JUNCTION STRUCTURE BETWEEN STEEL MEMBER AND STRUCTURAL MEMBER

Priority: JP19900401568 19901212 JP19900402791 19901217 JP19910004324 19910118 JP19910030002 19910225 JP19910051890 19910318 JP19910051891 19910318 US19940192066 19940204 US19910805049 19911211

Family:

Publication number	Publication date	Application number	Application date
GB2252142 A1	19920729	GB19910026323	19911211
GB2252142 B2	19941109	GB19910026323	19911211
GB9126323 A0	19920212	GB19910026323	19911211
JP1943314 C3	19950623	JP19900402791	19901217
JP2006029 C3	19960111	JP19900401568	19901212
JP2027057 C3	19960226	JP19910004324	19910118
JP2027062 C3	19960226	JP19910051890	19910318
JP4213639 A2	19920804	JP19900401568	19901212
JP4216737 A2	19920806	JP19900402791	19901217
JP4237734 A2	19920826	JP19910004324	19910118
JP4269230 A2	19920925	JP19910030002	19910225
JP4289349 A2	19921014	JP19910051891	19910318
JP4289350 A2	19921014	JP19910051890	19910318
JP6074612 B4	19940921	JP19900402791	19901217
JP7033684 B4	19950412	JP19900401568	19901212
JP7042732 B4	19950510	JP19910004324	19910118
JP7042733 B4	19950510	JP19910051890	19910318
US5410847 A	19950502	US19940192066	19940204

Probable Assignee: KAJIMA CORP

Assignee(s):(std)**:** ARTES KK ; ARUTESU KK ; KABUSHIKIKAISHA ARTES ; KAJIMA CORP

Inventor(s):(std)**:** HAYASAKA HIROSHI ; ITO AKIYOSHI ; ITO SHOEI ; OKAWA YASUO ; SAEKI TOSHIO ; SUGAWARA KIYOBUMI ; TANAKA NAOKI

Inventor(s): TOSHIO SAEKI ; YASUO OKAWA ; KIYOBUMI SUGAWARA ; NAOKI TANAKA ; HIROSHI HAYASAKA ; AKIYOSHI ITO

International class (IPC 8–9): E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 F16B13/14 (Advanced/Invention) ; E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 (Core/Invention)

International class (IPC 1–7): E02D27/00 E04B1/16 E04B1/24 E04B1/30 E04B1/58 F16B7/04

CPC: Y10T403/7001 Y10T403/75 E04B1/30 F16B13/141

European class: E04B1/30 F16B13/14C

US class: 403/346 403/408.1 52/272 52/295 52/583.1 52/721 52/724.2 52/737.2 52/838

Classification Explorer

Cited documents: US4905436 A, US4111578 A, US3787134 A, US3513610 A, US3369334 A, US3261135 A, US2920475 A, US2569669 A, US1333523 A, JP63186809 B4, JP59171154 A2, JP57012739 A2, JP54033217 A2, JP49038447 A2, JP3125735 A2, JP3090760 A2, JP3021735 A2, JP2272125 A2, JP2272122 A2, JP2072122 A2, JP2061142 A2, JP2061141 A2, JP2061140 A2, JP1278637 A2, JP1278636 A2, JP1275820 A2, JP1275819 A2, JP1275818 A2, JP1260135 A2, JP1260134 A2, GB893213 A, GB1418192 A, GB1037570 A, FR921528 A, FR1067871 A,

Forward Citations: WO9851883, WO9836134, WO07066228, WO07066228, US9422717, US9399868, US9255408, US9145682, US8915043, US8468775, US8393118, US8381479, US8375678, US7975444, US7637076, US7107730, US6061992, US2015259917,

US2015259916, US2014311059, US2010319280, US2009139177, US2009038263, US2007261356, US2007209314, JP2007023682, JP2002129661, DE4318771, CN104075040, CN104075040, CN104075038, CN104075038, CN104005516, CN102733491, CN102733486,

Abstract:
Source: US5410847A A junction for connecting a steel member to a structural member, such as a beam in a steel framed construction to a column in a reinforced concrete construction, a steel framed concrete construction or a steel framed construction. Junction hardware connect to the steel member and a rod−like orthogonal metal connector is provided in concrete structural members. The elements are connected by tightening bolts or by screw joints through a coupler. Since the metal connector is in a form of rod, the concrete member has a high packing property. Field welding work is omitted by connecting the metal connector to the junction hardware by a bolt connection method or by a screw joint method to facilitate assembly. Furthermore, the intermediate portion of the metal connector may have a flat or curved shape or a metal connector orthogonal to the intermediate portion may have a passable through hole, and thus the bolt portion of both metal connectors are positioned at the same level as are the heights of the top ends of the steel beams intersecting at right angles.

0) US2010180519A – PRECAST WALL PANELS AND METHOD OF ERECTING A HI...

7) Family number: 46169228 (US2010180519A) © PatBase

Title: PRECAST WALL PANELS AND METHOD OF ERECTING A HIGH–RISE BUILDING USING THE PANELS

Priority: CN201280008218 20120208 EP20120744820 20120208 US20090356414 20090120 US20110023062 20110208 WO2009US31573 20090121 US20130874760 20130501 WO2012US24219 20120208

Family:

Publication number	Publication date	Application number	Application date
AU2009338184 AA	20100729	AU20090338184	20090121
AU2009338184 BB	20160512	AU20090338184	20090121
AU2012214539 AA	20120816	AU20120214539	20120208
AU2012214539 BB	20170406	AU20120214539	20120208
CA2826202 AA	20130730	CA20122826202	20120208
CN103403277 A	20131120	CN201280008218	20120208
CN103403277 B	20160113	CN201280008218	20120208
CN105714932 A	20160629	CN201610061038	20120208
DE602012021511 D1	20160929	DE201260021511T	20120208
EP2430250 A1	20120321	EP20090838994	20090121
EP2430250 A4	20140604	EP20090838994	20090121
EP2430250 B1	20160810	EP20090838994	20090121
EP2673428 A1	20131218	EP20120744820	20120208
EP2673428 A4	20140813	EP20120744820	20120208
EP2673428 B1	20160810	EP20120744820	20120208
IN05476DN2011 A	20131004	IN2011DN05476	20110715
IN07043DN2013 A	20160429	IN2013DN07043	20130807
JP2014508233 T2	20140403	JP20130553504T	20120208
JP6027983 B2	20161116	JP20130553504T	20120208
US2010180519 AA	20100722	US20090356414	20090120
US2011126484 AA	20110602	US20110023062	20110208
US2014047786 AA	20140220	US20130874760	20130501
US8074414 BB	20111213	US20090356414	20090120
US8631616 BB	20140121	US20110023062	20110208
WO10085245 A1	20100729	WO2009US31573	20090121
WO12109293 A1	20120816	WO2012US24219	20120208

Probable Assignee: NEWCO VENTURES LLC

Assignee(s):(std): BAKER WILLIAM F ; BESJAK CHARLES ; CARRION JUAN ; CAVANAGH JOHN A ; SKIDMORE OWINGS AND MERRILL LLP ; NEWCO VENTURES LLC ; MACDONALD JAMES E ; MERRILL LLP ; STEWART ROBERT C

Assignee(s): SKIDMORE OWINGS AND MERRILL LLP NEW YORK ; NEWCO VENTURES LLC SOUTH PLAINFIELD

Inventor(s):(std): BAKER WILLIAM F ; BESJAK CHARLES ; CARRION JUAN ; CAVANAGH JOHN A ; CHARLES BESJAK ; JUAN CARRION ; MACDONALD JAMES E ; STEWART ROBERT C ; MACDONALD JAMES C

Inventor(s): CAVANAGH JOHN A CENTERPORT ; BESJAK CHARLES WATCHUNG ; BAKER WILLIAM F EVANSTON ; STEWART ROBERT C ANNANDALE ; MACDONALD JAMES E NORTH BERGEN ; STEWART ROBERT ; MACDONALD JAMES ; CAVANAGH JOHN ; BAKER WILLIAM

Agent(s): GRIFFITH HACK; FINLAYSON AND SINGLEHURST; PIERROU MATTIAS; AWAPATENT AB; KOIKE AKIRA; IGA SEIJI; FUJII TOSHIYA; SONNENSCHEIN NATH AND ROSENTHAL LLP; SNR DENTON US LLP; DENTONS US LLP; BURTON THOMAS J ET

AL; KAPMAR DIMITRY ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/04 E04B1/18 E04B1/24 E04B1/30 E04B1/34 E04B1/61 E04B2/00 E04B2/64 E04B2/84 E04B5/00 E04C2/06 E04C3/00 E04C5/08 E04C5/16 E04D1/36 E04G21/16 E04G21/26 E04G3/00 E04H1/00 (Advanced/Invention); E04B2/00 E04H1/00 (Core/Invention)

CPC: E04C5/161 E04C5/162 E04B2/64 E04C2/06 E04B1/04 E04B1/24 E04B1/2403 E04B1/34 E04B2001/2415 E04B2001/2496 E04G21/16 E04G21/26

European class: E04B1/04 E04B1/24 E04B1/34 E04C5/16A E04C5/16B E04G21/16 E04G21/26 P04B1/24B P04B1/24B4 P04B1/24W

US class: 52/223.1 52/235 52/236.1 52/236.3 52/236.5 52/236.7 52/236.9 52/250 52/252 52/253 52/426 52/426P 52/578 52/578S 52/583.1 52/586.1 52/586.2 52/745.1 52/745.100S 52/79.14 52/79.140P

Classification Explorer

Cited documents: US8307601 BB, US8166717 BB, US7941985 BB, US7665264 BA, US7204060 BB, US7185467 BB, US7140155 BA, US7121520 BB, US7121061 BB, US7114695 BB, US6959515 BA, US6955016 BA, US6892498 BA, US6658799 BA, US6557316 BB, US6543371 BA, US6516583 BA, US6496996 BA, US6493996 BA, US6477814 BA, US6457281 BA, US6301851 BA, US6230465 BA, US6076319 A, US5813175 A, US5761862 A, US5737895 A, US5706620 A, US5493836 A, US5184808 A, US5065558 A, US5048257 A, US5035100 A, US4936069 A, US4649682 A, US4635422 A, US4606165 A, US4294051 A, US4219978 A, US4145861 A, US4142340 A, US4065905 A, US4059939 A, US4018021 A, US3952471 A, US3882649 A, US3851024 A, US3640039 A, US3512819 A, US3435580 A, US3398498 A, US3355852 A, US3292331 A, US3261135 A, US2751776 A, US2664740 A, US2618146 A, US2142305 A, US2011094182 AA, US2011030288 AA, US2011023397 AA, US2010180519 AA, US2010162658 AA, US2010058686 AA, US20100058686, US2009249725 AA, US2008083181 AA, US2006272251 AA, US2006185305 AA, US2004211140 AA, US2004118080 AA, US2004118069 AA, US2004118066 AA, US2004052589 AA, US2004020145 AA, US2003183742 AA, US1990656 A, US1501288 A, US1031926 A, US04649682, JP1230843 A2, JP01230843, CN1514901 A, CN101680227 A, CA1147928 A1,

Forward Citations: US9617724, US9328528, US9243398, US8919058, US2015275499, US2015040505, US2014030051, US2014005807, US2012174522, US2012110928, KR20140013926, KR101702933, EP2685019, CN103569568, CN103403277, CN103403277,

Abstract:
Source: US2010180519A A precast wall system and a method for constructing a high−rise building using the precast wall system is disclosed. The system includes a plurality of interconnected precast panels. Each precast panel has a top end plate, a bottom end plate, a plurality of vertical bars disposed between and attached to the end plates and a cementitious material encasing the vertical bars and defining a plurality of sides of the respective panel. A first group of the interconnected precast panels are arranged vertically on a second group of the interconnected precast panels and the top end plate of each panel corresponding the first group is connected to the bottom end plate of a respective one of the panels corresponding to the second group. Methods for horizontally and vertically connecting the precast panels to each other are also disclosed.

0) US5713130A – PARTIALLY THICK–WALLED ELONGATED METALLIC MEMBE...

8) Family number: 8538890 (US5713130A) © PatBase

Title: PARTIALLY THICK–WALLED ELONGATED METALLIC MEMBER AND METHODS OF MAKING AND CONNECTING THE SAME

Priority: CA19952139829 19950109 JP19940023167 19940124 JP19940156744 19940614 JP19940336196 19941222 JP19940059889 19940304 JP19940156774 19940614 JP19940336197 19941222

Family:

Publication number	Publication date	Application number	Application date
AU199510044 A1	19950803	AU19950010044	19950104
AU685878 B2	19980129	AU19950010044	19950104
CA2139829 AA	19950725	CA19952139829	19950109
CA2139829 C	20030812	CA19952139829	19950109
DE69424857 D1	20000713	DE19946024857	19941229
DE69424857 T2	20001228	DE19946024857T	19941229
EP0672475 A1	19950920	EP19940309896	19941229
EP0672475 B1	20000607	EP19940309896	19941229
JP2614417 B2	19970528	JP19940156774	19940614
JP2742395 B2	19980422	JP19940336197	19941222
JP2821095 B2	19981105	JP19940336196	19941222
JP7292771 A2	19951107	JP19940336196	19941222
JP8007635 A2	19960112	JP19940156774	19940614
JP8060747 A2	19960305	JP19940336197	19941222
US5713130 A	19980203	US19940365638	19941228

Probable Assignee: DAI ICHI HIGH FREQUENCY CO LTD

Assignee(s):(std)**:** NAT HOUSE IND ; DAI ICHI HIGH FREQUENCY CO LTD ; DAIWA HOUSE IND ; PANAHOME CO LTD

Assignee(s): WATANABE YASUO ; DAI ICHI HIGH FREQUENCY CO ; DAIWA HOUSE IND CO ; DAIWA HOUSE IND CO LTD ; NATL HOUSE IND CO LTD ; DAIWA HOUSE INDUSTRY CO ; DAIWA HOUSE INDUSTRY CO LTD ; DAIWA HOUSE INDUSTRY CO LTD OSAKA ; HANYOH SUSUMU ; FUKUDA AKIRA ; FURUMI KENJI

Inventor(s):(std)**:** FUKUDA AKIRA ; FUKUDA AKIRA C O DAIWA HOUSE I ; FURUMI KENJI ; FURUMI KENJI C O DAIWA HOUSE I ; FURUUMI KENJI ; HANYOH SUSUMU ; HANYOH SUSUMU C O DAI ICHI HIG ; WATANABE YASUO ; WATANABE YASUO C O DAI ICHI HI ; MORIMOTO TAIJI ; NAKAAGE SUSUMU ; YOKOYAMA KATSUMI

Inventor(s): AKIRA FUKUDA ; SUSUMU HANYOH ; WATANABE YASUO C O DAI ICHI HIGH FREQ CO ; WATANABE YASUO C O DAI ICHI HIGH FREQ CO LTD ; YASUO WATANABE ; HANYOH SUSUMU C O DAI ICHI HIGH FREQ CO ; HANYOH SUSUMU C O DAI ICHI HIGH FREQ CO LTD ; KENJI FURUMI ; FURUMI KENJI C O DAIWA HOUSE IND CO ; FURUMI KENJI C O DAIWA HOUSE INDUSTRY CO ; FURUMI KENJI C O DAIWA HOUSE INDUSTRY CO LTD ; FUKUDA AKIRA C O DAIWA HOUSE IND CO ; FUKUDA AKIRA C O DAIWA HOUSE INDUSTRY CO ; FUKUDA AKIRA C O DAIWA HOUSE INDUSTRY CO LTD

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT ATTORNEYS PTY LTD; SMART AND BIGGAR

Designated states: DE FR GB

International class (IPC 8–9): B21C37/15 B21C37/16 B21D39/04 B21J5/08 B21J9/08 E04B1/24 E04B1/58 E04C3/32 F16B35/04 F21S4/00 F21S8/04 F21V17/00 F21V21/02 (Advanced/Invention); B21J5/08 B21J9/08 F16B35/04 (Advanced/Non–invention); B21C37/15 B21J5/06 B21J9/00 E04B1/24 F21S4/00 F21S8/04 F21V17/00 F21V21/02 (Core/Invention); B21J5/06 B21J9/00 F16B35/04 (Core/Non–invention)

International class (IPC 1–7): B21C37/16 B21D21/04 B21D26/00 B21D39/04 B21J15/04 B21J5/08 B21J9/08 B21K21/08 E04B1/24 E04B1/38 E04B1/58 E04C3/32 F16B29/00 F16B35/04 F21S3/02 F21V17/00

	F21V21/02
CPC:	B21C37/15 Y10T29/49623 Y10T29/49631 Y10T29/49634 Y10T29/49771 Y10T29/49948 Y10T29/49963 B21C37/16 B21J5/08 B21J9/08 E04B1/24 E04B2001/2415 E04B2001/2418 E04B2001/2445 E04B2001/2448 E04B2001/2451 E04B2001/2454 E04B2001/2457 E04B2001/246 E04B2001/2472 E04B2001/2496
European class:	B21C37/15 B21C37/16 B21J5/08 B21J9/08 E04B1/24 P04B1/24B22 P04B1/24B4 P04B1/24B40 P04B1/24B41 P04B1/24B42 P04B1/24B5 P04B1/24B50 P04B1/24B51 P04B1/24C3 P04B1/24W
US class:	29/407.05 29/525.02 29/525.11 29/897.3 29/897.33 29/897.35 298/973 72/342.5 72/342.6
Classification Explorer	
Cited documents:	US4625533 A, US4014089 A, US3842644 A, US3487196 A, US3198928 A, JP60009543 A2, JP60009543, JP59206134 A2, JP59087943 A2, JP54037125 U1, JP52000470 A2, JP4179754 A2, JP4041735 A2, JP4034358 U, JP4004937 A2, JP3212533 A2, JP3212533, JP3166440 A2, JP3166438, JP2147140 A2, JP1143408 U, GB2242378 A1,
Forward Citations:	WO09150728, US8833127, US8245734, US7667157, US7231798, US6911089, US6238156, US6206392, US2012003496, US2006065651, US2006065035, US2004083957, KR101546665, KR101449188, JP5902882, JP3649575, JP2011016662, JP2009197472, JP2002038471, JP10220432, EP0960754, DE102009008944,

Abstract:
Source: US5713130A A method of and an apparatus for manufacturing an elongated metallic member (1) having at least one thickened wall area defined at a portion thereof. That portion of the elongated metallic member (1) is heated to a plasticizable temperature to form a heated area (5) while the latter is moved along the metallic member (1) and, at the same time, axially inwardly compressed to allow upsetting at the heated area (5), to thereby form a thickened wall area. A trailing portion (1a) of the thickened wall area of the elongated metallic member (1) immediately after the heated area (5) is cooled. The ratio (V/W) of a compressing speed V relative to the moving speed W of the position of the heated area (5) in reference to the thickened portion (1a) of the metallic member (1) is progressively increased from a small value, employed at an initial stage of wall thickening, along the metallic member (1) to an aimed value, employed at a steady stage of wall thickening, to thereby progressively increase a wall thickening ratio along the metallic member (1) to a designed value. The subsequent wall thickening is carried out while the ratio is maintained at said designed value for the steady stage of wall thickening. A method of connecting two metallic members (1) in end−to−end fashion and a method of connecting a beam to the metallic member (1) are also disclosed.

0) US2002064426A – COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR...

9) Family number: 34422367 (US2002064426A) © PatBase

Title: COMPOSITE CONCRETE METAL ENCASED STIFFENERS FOR METAL PLATE ARCH–TYPE STRUCTURES

Priority: JP19980501014 19970611 JP19980501014 19970611 US19980097860 19980616 WO1997CA00407 19970611 US19960662070 19960612 US19970662070 19970612

Family:

Publication number	Publication date	Application number	Application date
AU199730211 A1	19980107	AU19970030211	19970611
AU715030 B2	20000113	AU19970030211	19970611
BRPI9709714 A	20000111	BR1997PI09714	19970611
CA2255903 AA	19981124	CA19972255903	19970611
CA2255903 C	20030325	CA19972255903	19970611
CN1125908 C	20031029	CN19971095436	19970611
CN1221467 A	19990630	CN19971095436	19970611
DE69715194 D1	20021010	DE19976015194	19970611
DE69715194 T2	20030430	DE19976015194T	19970611
EP0904465 A1	19990331	EP19970924831	19970611
EP0904465 B1	20020904	EP19970924831	19970611
ES2182082 T3	20030301	ES19970924831T	19970611
JP2000511978 T2	20000912	JP19980501014T	19970611
JP2007071022 A2	20070322	JP20060343624	20061220
JP4031811 B2	20080109	JP20060343624	19970611
JP4031811 B2	20080109	JP20060343624	20061220
JP4035168 B2	20080116	JP19980501014	19970611
KR20000016602 A	20000325	KR19980710198	19981212
NO318605 B1	20050418	NO19980005825	19981211
NO985825 A	19981215	NO19980005825	19981211
NO985825 A0	19981211	NO19980005825	19981211
NZ333129 A	20000327	NZ19970333129	19970611
PL184271 B1	20020930	PL19970330546	19970611
PL330546 A1	19990524	PL19970330546	19970611
PT904465 T	20030131	PT19970924831T	19970611
RU2244778 C2	20050120	RU19990100392	19970611
RU99100392 A	20001027	RU19990100392	19990112
US2002064426 AA	20020530	US19980097860	19980616
US5833394 A	19981110	US19960662070	19960612
US6595722 BB	20030722	US19980097860	19980616
WO9747825 A1	19971218	WO1997CA00407	19970611

Probable Assignee: AIL INT INC

Assignee(s):(std)**:** AIL INTERNAT CORP ; AIL INTERNAT INC ; WILSON MICHAEL W ; AIL INTERNATIONAL INC ; AIL INTERNATL INC

Assignee(s): MICHAEL W WILSON ; MCCAVOUR THOMAS C ; AIL INTERNATIONAL INC NEW BRUNSWICK ; AIL INTERNATIONAL INC SACKVILLE ; AIL INTERNATIONAL CORP ; AIL INT ; AIL INT INC

Inventor(s):(std)**:** MCCAVOUR THOMAS C ; MCCAVOUR C ; MAKKAVUR TOMAS S

Inventor(s): THOMAS C MCCAVOUR

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SIM AND MCBURNEY

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN YU

International class (IPC 8–9): E01D4/00 E01F5/00 E02D29/045 E03F3/04 E04B1/32 E21D11/20 (Advanced/Invention); E01D4/00 E02D29/045 E03F3/04 (Advanced/Non–invention); E01D4/00 E01F5/00 E02D29/045 E03F3/04 E21D11/14 (Core/Invention)

International class (IPC 1–7): E01D4/00 E01F5/00 E02D E02D29/045 E02D29/45 E03F3/00 E03F3/04 E04B1/32 E21D11/20

CPC: E01F5/005 E02D29/045

European class: E01F5/00B E02D29/045

US class: 405/126 405/288

Classification Explorer

Cited documents: US5375943 A, US5326191 A, US4563107 A, US4390306 A, US4318635 A, US4186541 A, US4141666 A, US4099386 A, US4099359 A, US3855801 A, US3673806 A, US3509725 A, US3508406 A, US2067493 A, GB2140848 A1, FR2508072 A1, DE2657229 A1, CA862402 A,

Forward Citations: WO14134859, WO13023275, WO11092331, WO11092331, WO10056691, WO07073075, WO07073017, WO07021114, WO07003044, USD566852, US9617750, US9163392, US9151577, US9088142, US9085977, US9038328, US8955262, US8256173, US8220220, US8157475, US7861346, US7217064, US7056064, US7052209, US7052209, US6550816, US6050746, US2015252579, US2015007758, US2012301223, US2012020738, US2011250024, US2010122504, US2009214297, US2008307744, US2008298903, US2007000077, US2006150567, US2003136455, RU2593854, RU2471039, RU2471038, RU2471037, RU2471036, RU168800, KR20090091052, KR101654931, KR100837212, ITRM20090259, ES2330397, EP2354447, EP1966450, EP1966450, EP1896659, EP1896659, EA017922, CN105544608, CN105484759, CN105442463, CN105401596, CN104213515, CN103276675, CN103161349, CN103161349, CN103114520, CN102433846, CN102359062, CN102322275, CN102322275, AU2009200615,

Abstract:
Source: US2002064426A A composite concrete reinforced corrugated metal arch–type structure comprises: i) a first set of shaped corrugated metal plates interconnected in a manner to define a base arch structure with the corrugations extending transversely of the longitudinal length of the arch; ii) a second series of shaped corrugated metal plates interconnected in a manner to overlay the first set of interconnected plates of the base arch, the second series of plates having at least one corrugation extending transversely of the longitudinal length of the arch with the troughs of the corrugation of the second series of plates secured to the crests of the first set of plates; iii) the interconnected series of second plates and the first set of plates define individual, transversely extending, enclosed continuous cavity filled with concrete to define an interface of the concrete enclosed by the metal interior surfaces of the second series of crests and first set of troughs; iv) the interior surfaces of the cavity for each of the first and second plates having means for providing a shear bond at the concrete–metal interface to provide individual curved beams traversing the arch whereby the structure provides positive and negative bending resistance and combined bending and axial load resistance to superimposed loads.

0) US2009107065A – BUILDING CONSTRUCTION FOR FORMING COLUMNS AND B...

10) Family number: 43198191 (US2009107065A) © PatBase

Title: BUILDING CONSTRUCTION FOR FORMING COLUMNS AND BEAMS WITHIN A WALL MOLD

Priority: US20070000112P 20071024 US20080137224P 20080729 US20080231875 20080908 US20090208224P 20090223 US20090456707 20090622 US20090456707 20090722 WO2009US04335 20090727 US20110628044P 20111024 US20110629442P 20111118 US20120398243 20120216 US20120400103 20120219 US20120398168 20120217 US20120437707 20120402 US20120437630 20120402

Family:

Publication number	Publication date	Application number	Application date
AU2009277150 AA	20100204	AU20090277150	20090727
IN00351MN2011 A	20110826	IN2011MN00351	20110223
US2009107065 AA	20090430	US20080231875	20080908
US2010058700 AA	20100311	US20090456707	20090622
US2012144765 AA	20120614	US20120398243	20120216
US2012144767 AA	20120614	US20120400103	20120219
US2012174512 AA	20120712	US20120398168	20120217
US2012186174 AA	20120726	US20120437630	20120402
US2012186180 AA	20120726	US20120437707	20120402
US8161699 BB	20120424	US20090456707	20090622
US8176696 BB	20120515	US20080231875	20080908
US8671637 BB	20140318	US20120400103	20120219
US8756889 BB	20140624	US20120398168	20120217
US8763331 BB	20140701	US20120437630	20120402
US8800227 BB	20140812	US20120437707	20120402
WO10014192 A1	20100204	WO2009US04335	20090727

Probable Assignee: LEBLANG DENNIS WILLIAM

Assignee(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Assignee(s): DENNIS LEBLANG

Inventor(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Inventor(s): DENNIS LEBLANG

Agent(s): BAXTER IP; BAXTER PATENT ATTORNEYS PTY LTD; DENNIS LEBLANG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/16 E04B1/18 E04B1/38 E04B1/64 E04B2/00 E04B2/08 E04B2/30 E04B2/32 E04B2/76 E04B2/84 E04B2/86 E04C1/42 E04C2/10 E04C2/20 E04C2/52 E04C3/09 E04G11/06 E04G9/00 (Advanced/Invention); E04B2/86 E04C3/04 (Advanced/Non–invention); E04B1/18 E04B2/04 E04G11/00 E04G9/00 (Core/Invention)

CPC: E04B1/164 E04B2/7412 E04B1/80 E04B2/58 E04B1/14 E04B1/165 E04B2/763 E04B2/8617 E04B2/8635 E04B2/8641 E04B2/8647 E04C3/09 E04C2003/0473

European class: E04B1/14 E04B1/16C E04B1/16D E04B1/80 E04B2/58 E04B2/76C1 E04C3/09 P04B2/74C2P P04B2/86E1 P04B2/86G P04B2/86G1 P04B2/86H P04C3/04S3U

US class: 249/19 249/192 249/192S 249/19S 52/220.1 52/220.100P 52/220.2 52/220.200P 52/252 52/252P 52/302.1 52/302.100P 52/309.11 52/309.12 52/309.4 52/309.400S 52/426 52/426P 52/426S 52/439 52/439P 52/479 52/479S 52/506.05 52/506.050P 52/588.1 52/588.100S 52/698 52/698S 52/762 52/762S

Cited documents: US8161699 BB, US8109058 BB, US8037652 BB, US7908807 BB, US7790302 BB, US7681368 BA, US7666258 BB, US7415805 BB, US7409800 BB, US7395999 BB, US7308778 BB, US7278244 BA, US7254925 BB, US7232605 BB, US7231746 BB, US7185467 BB, US7162845 BB, US7077988 BB, US7028440 BB, US7028439 BB, US6988347 BB, US6978581 BA, US6952905 BB, US6935081 BB, US6880304 BA, US6869669 BB, US6851235 BB, US6837013 BB, US6817151 BB, US6754995 BA, US6729094 BA, US6708459 BB, US6701684 BB, US6698710 BA, US6681539 BB, US6662516 BB, US6647686 BB, US6609340 BB, US6588168 BB, US6584742 BA, US6568138 BA, US6564521 BA, US6541097 BB, US6523312 BB, US6519904 BA, US6481178 BB, US6438918 BB, US6430890 BA, US6408594 BA, US6401417 BA, US6378260 BA, US6355193 BA, US6308491 BA, US6293067 BA, US6269608 BA, US6263628 BA, US6256960 BA, US6250033 BA, US6247280 BA, US6240692 BA, US6167624 BA, US6167624 B1, US6164035 A, US6151858 A, US6134861 A, US6131365 A, US6125608 A, US6122888 A, US6119432 A, US6044603 A, US6041562 A, US6041561 A, US6026620 A, US5992114 A, US5950389 A, US5943775 A, US5864993 A, US5842314 A, US5842276 A, US5839249 A, US5819496 A, US5809726 A, US5809724 A, US5758463 A, US5722198 A, US5655350 A, US5638651 A, US5628158 A, US5596860 A, US5566518 A, US5526629 A, US5524400 A, US5505031 A, US5497589 A, US5381635 A, US5365716 A, US5353560 A, US5335472 A, US5279091 A, US5279088 A, US5207045 A, US5138813 A, US5062250 A, US4930278 A, US4909007 A, US4889310 A, US4813193 A, US4774794 A, US4744185 A, US4724794 A, US4703602 A, US4602467 A, US4357783 A, US4338759 A, US3678638 A, US2008127607 AA, US2008066408 AA, US2007278381 AA, US2007227086 AA, US2007199266 AA, US2007062134 AA, US2007044392 AA, US2006260267 AA, US2006251851 AA, US2004068948 AA, US2003106280 AA, US2001027630 AA, US1892605 A, US1850402 A,

Forward Citations: WO16032537, WO14128047, WO14059546, WO12092108, WO11127522, US9677285, US9617724, US9611656, US9598891, US9593491, US9574347, US9566742, US9534397, US9512621, US9493940, US9469984, US9464444, US9464443, US9422713, US9388566, US9382709, US9340966, US9328506, US9324730, US9322162, US9316006, US9267294, US9260869, US9255414, US9222261, US9157233, US9115503, US9115500, US9097016, US9091068, US9074369, US9068350, US9038343, US9032685, US9016027, US8997421, US8978334, US8978331, US8950130, US8875465, US8863463, US8839580, US8776468, US8769891, US8756890, US8661762, US8631623, US8621798, US8615952, US8607523, US8601761, US8578675, US8544233, US8375670, US8375669, US8359799, US8307598, US8276332, US2017121958, US2017067245, US2015354205, US2015300018, US2015267393, US2015218831, US2015001764, US2014332658, US2014250828, US2014165490, US2014150368, US2014116000, US2014115991, US2014115989, US2014115988, US2014109503, US2014069040, US2014059963, US2014059958, US2014000199, US2013326984, US2013295338, US2013273310, US2013192161, US2013180190, US2013118104, US2013074432, US2013036688, US2012285108, US2012231231, US2012227346, US2012225236, US2012144765, US2012124927, US2012096785, US2012040135, US2012036803, US2011302875, US2011220966, US2011113724, US2011091679, US2011036048, US2011036046, US2010176525, US2010058686, US2010005746, US2009282759, US2009277119, US2009064619, RU2610951, ITVI20100078, FR3002251, CN105569255, CN103758249, CN103031905, CN102587502,

Abstract:
Source: US2009107065A The present invention relates to an improved wall system where a wall form mold has a structural insulated core assembled to form a structural insulated panel (SIP) to form a concrete beam and concrete column to be poured anywhere within the wall as well as between building modules when placed together and erected vertically. The interlocking wall molds interlock within the wall as well as between panels and modules. The wall panels allow concrete columns and beams to be formed in any size and shape. The structural insulated core consists of interlocking foam spacers and support channels which can be glued or screwed together to form an independent wall or as part of a precast wall with columns and beams integrated within the wall panels. Insulated flanges within the wall forming mold separates the wall forming structure from the wall surfaces.

0) US2015068138A – CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM...

11) Family number: 58688176 (US2015068138A) © PatBase

Title: CONCRETE DECK FOR AN INTEGRATED BUILDING SYSTEM ASSEMBLY PLATFORM

Priority: US20130876475P 20130911 US20140061285P 20141008 US20140484051 20140911 US20150878420 20151008 US20160148546 20160506 WO2015US54685 20151008

Family:

Publication number	Publication date	Application number	Application date
IN201747010246 A	20170414	IN201747010246	20170323
US2015068138 AA	20150312	US20140484051	20140911
US2016076269 AA	20160317	US20150878420	20151008
US2016251853 AA	20160901	US20160148546	20160506
US9506266 BB	20161129	US20150878420	20151008
WO15038805 A1	20150319	WO2014US55236	20140911
WO16057790 A1	20160414	WO2015US54685	20151008

Probable Assignee: ADITAZZ INC

Assignee(s):(std)**:** ADITAZZ INC

Inventor(s):(std)**:** FOLDENAUER DONALD ; KIM SUNGMIN ; RUBEL ZIGMUND ; REID NICHOLAS ; MOORE MARK ; HAMOUDA EHAB ; FOLDENAUER DONALD J

Agent(s): WILSON MARK A ET AL; WILSON MARK A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** E04B1/04 E04B1/06 E04B1/19 E04B1/348 E04B1/38 E04B1/41 E04B5/00 E04B5/02 E04B5/04 E04B5/10 E04B5/14 E04B5/17 E04B5/44 E04C2/06 E04C5/01 E04C5/04 E04C5/08 E04C5/16 E04F13/02 E04H1/00 E04H1/04 E04H12/14 E04H12/16 E04H12/34 (Advanced/Invention); E04B1/24 (Advanced/Non–invention)

CPC: E04H12/16 E04C5/08 E04H12/14 E04H12/34 E04H1/04 E04B1/3483 E04B5/10 E04B5/44 E04B5/17 E04B5/023 E04B2005/176 E04C2/044 E04B1/24 E04B5/04 E04B5/14 E04B2001/2424 E04B2001/2442 E04B2001/2454 E04B2001/2484 E04C2/06 E04C5/04 E04C5/16 E04C5/0645 E04B2005/173

US class: 52/223.6 52/414 52/649.1 52/653.1 52/741.3 52/745.13 52/98

Classification Explorer

Cited documents: WO9733788 A1, US938458 A, US8840341 BB, US8448280 BB, US8245469 BB, US7963073 BA, US7281356 BB, US6857241 BA, US6804923 BA, US6793436 BA, US6568139 BB, US6484471 BB, US6467223 BA, US6308478 BA, US6178710 BA, US6178710 B1, US5953864 A, US5950378 A, US5809712 A, US5806273 A, US5802652 A, US5758467 A, US5678372 A, US5671582 A, US5642968 A, US5425214 A, US5399050 A, US5396747 A, US5216860 A, US5113625 A, US4972537 A, US4800697 A, US4330970 A, US4300320 A, US4285173 A, US4144369 A, US4120131 A, US4080765 A, US4037375 A, US3842562 A, US3832817 A, US3429092 A, US3029561 A, US2780150 A, US2215975 A, US2137009 A, US2016251853 AA, US2016130798 AA, US2015068138 AA, US2015013255 AA, US2014202795 AA, US2014041328 AA, US2012233945 AA, US2011283643 AA, US2011131905 AA, US2010251656 AA, US2010101160 AA, US2009308005 AA, US2009272067 AA, US2009266010 AA, US2009188193 AA, US2009057486 AA, US2008295433 AA, US2008083181 AA, US2008010943 AA, US2007101675 AA, US2007000077 AA, US2006179750 AA, US2004060249 AA, US1912290 A, US1624802 A, US1523811 A, US1319731 A, US1061665 A,

Forward Citations: US9506266, US2016076269, US2014202795,

Abstract:
Source: US2015068138A Embodiments of a deck assembly module for a steel framed building include a modular concrete deck platform. The platform includes a concrete slab having a top major surface and a bottom major surface and a structural grid pattern of reinforcing bar within the concrete slab. The concrete slab further includes a shear connector opening on a side surface of a side of the concrete slab. The shear connector opening is a recess on the side surface of the concrete slab. The platform further includes an integrated attachment assembly within the shear connector opening on the side of the concrete slab. The integrated attachment assembly includes a shear connector rebar including an extension of continuous reinforcing bar extending out of the shear connector opening and back into the shear connector opening. The shear connector rebar and the shear connector opening form a closed loop.

0) US2013224020A – FLOATING HYBRID COMPOSITE WIND TURBINE PLATFORM...

12) Family number: 51083443 (US2013224020A) © PatBase

Title: FLOATING HYBRID COMPOSITE WIND TURBINE PLATFORM AND TOWER SYSTEM

Priority: US20100410127P 20101104 US20110883652 20111104 US20130863074 20130415 US20120624050P 20120413 US20120653816P 20120531 US20130883652 20130506 WO2011US59335 20111104 WO2013US36596 20130415 US20160346320 20161108

Family:

Publication number	Publication date	Application number	Application date
BR112013011146 A2	20160802	BR20131111146	20111104
CA2870349 AA	20141010	CA20132870349	20130415
CL2013001239 A1	20141017	CL20130001239	20130506
CL2014002753 A1	20150605	CL20140002753	20141013
CN103282274 A	20130904	CN201180062603	20111104
CN103282274 B	20170329	CN201180062603	20111104
CN104619984 A	20150513	CN201380030463	20130415
EP2635489 A2	20130911	EP20110838877	20111104
EP2635489 A4	20150128	EP20110838877	20111104
EP2836708 A1	20150218	EP20130775201	20130415
EP2836708 A4	20160210	EP20130775201	20130415
JP2013545020 T2	20131219	JP20130537865T	20111104
JP2015513046 T2	20150430	JP20150505978T	20130415
JP5950923 B2	20160713	JP20130537865T	20111104
US2013224020 AA	20130829	US20110883652	20111104
US2013233231 AA	20130912	US20130863074	20130415
US2017051724 AA	20170223	US20160346320	20161108
US9394035 BB	20160719	US20130863074	20130415
US9518564 BB	20161213	US20110883652	20111104
WO12061710 A2	20120510	WO2011US59335	20111104
WO12061710 A3	20120628	WO2011US59335	20111104
WO13155521 A1	20131017	WO2013US36596	20130415
WO13155521 A8	20131128	WO2013US36596	20130415

Probable Assignee: UNIV MAINE SYS BOARD TRUSTEES

Assignee(s):(std): GOUPEE ANDREW ; GOUPEE ANDREW J ; UNIV MAINE SYS BOARD TRUSTEES ; UNIV MAIN SYSTEM BOARD OF TRUSTEES ; DAGHER HABIB J ; UNIV OF MAINE SYSTEM BOARD OF TRUSTEE ; VISELLI ANTHONY M ; UNIV OF MAINE SYSTEM BOARD OF TRUSTEES

Assignee(s): VISELLI ANTHONY M399 BUCK STREETBANGORME04401US ; UNIVERSITY OF MAINE SYSTEM BOARD OF TRUSTEES ; DAGHER HABIB J101 BUCK HILL DRIVEVEAZIEME04401US ; OF MAINE SYSTEM BOARD OF TRUSTEES UNIV107 MAINE AVENUEBANGORME04401US ; GOUPEE ANDREW37 TALL PINE LANEDEDHAMME04429US ; OF MAINE SYSTEM BOARD OF TRUSTEE UNIV ; OF MAINE SYSTEM BOARD OF TRUSTEES UNIV ; OF MAIN SYSTEM BOARD OF TRUSTEES UNIV

Inventor(s):(std): DAGHER HABIB J ; GOUPEE ANDREW ; GOUPEE ANDREW J ; VISELLE ANTHONY M ; VISELLI ANTHONY M

Inventor(s): VISELLI ANTHONY M399 BUCK STREETBANGORME04401US ; GOUPEE ANDREW37 TALL PINE LANEDEDHAMME04429US ; HABIB J DAGHER ; DAGHER HABIB J101 BUCK HILL DRIVEVEAZIEME04401US ; ANDREW J GOUPEE ; ANTHONY M VISELLI

Agent(s): RIDOUT AND MAYBEE LLP; ESTUDIO FEDERICO VILLASECA Y CIA; ALESSANDRI Y COMPANIA; GILES ASHLEY SIMON; YAMAMOTO OSAMU; YAMAZAKI KOSAKU; ONO SHINJIRO; TAKEUCHI SHIGEO; KOBAYASHI YASUSHI; MACMILLAN SOBANSKI AND TODD LLC; GILLESPIE TED C

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B1/10 B63B21/50 B63B35/00 B63B35/44 B63B5/14 B63B5/24 E02D27/52 F03D11/00 F03D11/04 F03D13/25 F03D9/00 (Advanced/Invention); B63B1/10 B63B3/04 F03D1/00 (Advanced/Non–invention)

CPC: E02B2017/0091 B63B1/125 B63B5/20 B63B5/22 B63B2001/126 B63B2001/128 B63B21/50 F03D13/22 F05B2230/6102 B63B3/04 B63B5/14 B63B5/24 B63B35/44 B63B2035/442 B63B2035/446 B63B2231/04 B63B2231/50 B63B2231/52 B63B2231/66 B63B2231/68 F05B2240/912 F05B2240/93 F05B2240/95 Y02E10/727 Y02E10/728 Y10T29/49826 B63B2021/505 Y02P70/523 B63B2001/044 F03D13/30 B63B2231/60 F03D13/25 B63B1/107 F03D13/20 B63B1/048

European class: B63B35/44 B63B5/14 B63B5/24 F03D11/04 L63B1/10C L63B231/04 L63B231/50 L63B231/52 L63B231/66 L63B231/68 L63B3/04 L63B35/44C L63B35/44E7 R05B240/912 R05B240/93 R05B240/95

US class: 1/1 114/265 29/428 416/84 416/85

Classification Explorer

Cited documents: WO15120229 A1, WO15120227 A1, WO13160579 A1, WO13040871 A1, WO11137903 A2, WO10138978 A2, WO10110329 A1, WO09131826 A2, WO09087200 A2, WO04087494 A2, WO04061302 A2, WO02087959 A2, US9243418 BB, US8752495 BB, US8622011 BB, US8471396 BB, US8082719 BB, US7841143 BB, US7819073 BB, US7810756 BB, US7476074 BB, US7281881 BA, US7242107 BA, US7234409 BB, US7156037 BB, US7086809 BB, US6957519 BB, US6601649 BB, US6488446 BA, US6427403 BA, US5931602 A, US4470723 A, US3977344 A, US3958381 A, US3490406 A, US2016096599 AA, US2016075413 AA, US2016025064 AA, US2015071779 AA, US2013276687 AA, US2013233231 AA, US2013224020 AA, US2012103244 AA, US2012014752 AA, US2011210233 AA, US2011192333 AA, US2011155038 AA, US2011148115 AA, US2011037264 AA, US2011006539 AA, US2010186651 AA, US2010129162 AA, US2010101173 AA, US2010071275 AA, US2010008733 AA, US2009307998 AA, US2009072544 AA, US2008184654 AA, US2008014025 AA, US2006165493 AA, US2003168864 AA, US2003165361 AA, JP2012056333 A2, JP2011521820 T2, JP201064649, JP2010539378 T2, JP2010280301 A2, JP2010216273 A2, JP2010115978 A2, JP2010064649 A2, JP2010064648 A2, JP200947069, JP2009248792 A2, JP2009248792, JP2009162229 A2, JP2009162229, JP2009085167 A2, JP2009047069 A2, JP2006513344 T2, JP2006131025 A2, JP2003184729 A2, JP2003184729, GB2378679 A1, GB2344843 A1, GB2159468 A1, FRWO2013160579, FR2970938 A1, EP2143629 A1, DKWO2011137903, DE10300214 A1, CNWO2013040871, CN204415681 U, CN203652079 U, CN203158199 U, CN1817737 A, CN1767976 A, CN101939537 A,

Forward Citations: WO17001246, WO16138088, WO16094541, WO15131756, WO15120227, WO15048147, WO14030007, WO14013098, WO14013097, WO13093160, US9651029, US9592889, US9522716, US9518564, US9518402, US9394035, US9238896, US9011047, US2016362162, US2016215762, US2016075413, US2016017868, US2015159635, US2014079490, US2011219713, KR101488292, KR101487804, JP6059801, JP5758501, JP2015521710, EP3049668, EP2899111, CN105836062, CN105257076, CN104925231, CN104790426, CN104790426,

Abstract:
Source: US2013224020A A wind turbine platform is configured for floating in a body of water and includes a hull defining a hull cavity therein. The hull is formed from reinforced concrete. A tower is configured to mount a wind turbine and is also connected to the hull. An anchor member is connected to the hull and to the seabed.

0) WO0146526A1 – EARTH RETENTION AND PILING SYSTEMS RETENUE DE T...

13) Family number: 11486060 (WO0146526A1) © PatBase

Title: EARTH RETENTION AND PILING SYSTEMS

Priority: AU1999PQ04796 19991221 AU20010024927 20001221 AU20040101058 20041215 AU20050200758 20050221 AU20070100294 20070412 AU20080243212 20081112 WO2000AU01600 20001221 AU20120202472 20120430

Family:

Publication number	Publication date	Application number	Application date
AU200124927 A5	20010703	AU20010024927	20001221
AU2004101058 AD	20050224	AU20040101058	20041215
AU2005200758 AA	20050317	AU20050200758	20050221
AU2007100294 AE	20070503	AU20070100294	20070412
AU2008243212 AA	20081204	AU20080243212	20081112
AU2012202472 AA	20120517	AU20120202472	20120430
AU2012202472 BB	20120927	AU20120202472	20120430
AU479699 A0	20000203	AU1999PQ04796	19991221
WO0146526 A1	20010628	WO2000AU01600	20001221

Probable Assignee: TRISTANAGH PTY LTD

Assignee(s):(std)**:** MACDONALD IAN ROBERT ; TRISTANAGH PTY LTD

Inventor(s):(std)**:** MACDONALD IAN ; MACDONALD IAN ROBERT

Inventor(s): IAN MACDONALD ; IAN ROBERT MACDONALD

Agent(s): CULLENS PATENT AND TRADE MARK ATTORNEYS; CULLENS PTY LTD

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

International class (IPC 8–9): E02D11/00 E02D17/04 E02D5/02 E02D5/04 E02D5/74 E02D5/80 E02D7/00 (Advanced/Invention); E02D5/74 (Advanced/Non–invention); E02D11/00 E02D17/02 E02D5/02 E02D5/74 E02D5/80 E02D7/00 (Core/Invention)

International class (IPC 1–7): E02D11/00 E02D5/02 E02D5/04 E02D5/80 E02D7/00

CPC: E02D5/74 E02D17/04

European class: E02D17/04 E02D5/74

Classification Explorer

Cited documents: US4498323 A, FR2376917 A1, DE19915759 A1, AU7095396 A1, AU1524992 A1,

Forward Citations: WO09097355, WO09097355, US9085872, US8714877, US8322949, US7722293,

Abstract:
A method of stabilisation and confinement of earth structures including the steps of: (a) excavating an earth structure to a predetermined depth; (b) inserting earth anchors (76) into a wall structure formed by excavation; (c) tensioning each of said earth anchors (76) to a required value against bearing members (74) lying against the surface of the wall structure; (d) interconnecting the exposed ends of selected earth anchors with reinforcing members; and, (e) applying a sprayable cementitious composition to the wall surface to encapsulate part or all of said reinforcing members.

14) Family number: 29371029 (US4776145A) © PatBase

Title: MULTI PURPOSE DOME STRUCTURE AND THE CONSTRUCTION THEREOF

Priority:

CA19870547969 19870928 CA19870616173 19870928 CA19875479690 19870928
CA19952153631 19950711 US19890436479 19891114 US19910753652 19910930
EP19870307967 19870909 US19900477715 19900209 US19880206849 19880615
US19830559911 19831209 US19890396377 19890821 US19860915269 19861003
US19970874494 19970613 US19940279635 19940722 US19930076261 19930611
US19930012986 19930129 US19910782436 19911025 US19910797904 19911126

Family:

Publication number	Publication date	Application number	Application date
AT76671 E	19920615	AT19870307967T	19870909
CA1300840 A1	19920519	CA19870547969	19870928
CA1315944 A1	19930413	CA19870616173	19870928
CA1315944 A2	19930413	CA19910616173	19910923
CA2153631 AA	19960123	CA19952153631	19950711
DE3779388 D1	19920702	DE19873779388	19870909
EP0262818 A2	19880406	EP19870307967	19870909
EP0262818 A3	19881026	EP19870307967	19870909
EP0262818 B1	19920527	EP19870307967	19870909
US4776145 A	19881011	US19830559911	19831209
US4879859 A	19891114	US19860915269	19861003
US5094044 A	19920310	US19900477715	19900209
US5105590 A	19920421	US19890436479	19891114
US5134830 A	19920804	US19890396377	19890821
US5177919 A	19930112	US19910753652	19910930
US5408793 A	19950425	US19930012986	19930129
US5675941 A	19971014	US19940279635	19940722
US5881530 A	19990316	US19970874494	19970613

Probable Assignee: DYKMANS MAXIMILIAAN JACOBUS

Assignee(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAN J ; DYKMANS MAXIMILLIAAN J

Assignee(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF ; DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF US

Inventor(s):(std)**:** DYKMANS MAX J ; DYKMANS MAXIMILIAAN J ; DYKMANS MAXIMILIAAN JACOBUS ; DYKMANS MAXIMILIAN JACOBUS ; DYKMANS MAXIMILLIAAN J ; DYKMANS MAXIMILLIAN J

Inventor(s): DYKMANS MAXIMILIAN JACOBUS LA MESA CALIF

Agent(s): SMART AND BIGGAR

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

International class (IPC 8–9): B65D88/00 B65D88/34 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04B7/10 E04C5/08 E04C5/18 E04G11/04 E04G11/06 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 (Advanced/Invention);
E04B1/32 (Advanced/Non–invention);
B65D88/00 B65D90/00 E04B1/16 E04B1/32 E04B7/08 E04C5/00 E04C5/18 E04G11/00 E04G21/12 E04H7/00 (Core/Invention)

International class (IPC 1–7): B65D88/00 B65D90/00 E02D5/74 E04B1/16 E04B1/32 E04G11/04 E04H7/00

CPC: B65D88/34 E04B1/168 E04B1/3211 E04B7/08 E04B2001/3217 E04B2001/3264 E04C5/08 E04C5/18 E04G11/04 E04G11/065 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 E04B7/102 E04G11/045 E04G2021/127

European class: B65D88/34 E04B1/16F1 E04B1/32C E04B7/08 E04B7/10B E04C5/08 E04C5/18 E04G11/04 E04G11/06B2 E04G11/36 E04G21/12 E04H7/20 E04H7/26 E04H7/28 P04B1/32H P04B1/32N1

US class: 156/143 220/319 264/32 264/34 405/229 405/244 417/38 427/496 427/501 427/508 427/513 52/169.7 52/2 52/2.15 52/215 52/223.14 52/223.2 52/223.3 52/223.4 52/223.6 52/223L 52/223R 52/224 52/235 52/245 52/247 52/249 52/297 52/298 52/309.16 52/309.17 52/573 52/573.1 52/741 52/741.1 52/741.4 52/745.01 52/745.06 52/745.07 52/745.2 52/80 52/80.1 52/800 52/801 52/81.1 52/81.6 522/980

Classification Explorer

Cited documents: USRE28689 E, US5675941 A, US5408793 A, US5134830 A, US5094044 A, US4884747 A, US4879859 A, US4875808 A, US4869467 A, US4776145 A, US4723751 A, US4696133 A, US4642856 A, US4629592 A, US4628861 A, US4593360 A, US4588541 A, US4578302 A, US4550544 A, US4514471 A, US4493286 A, US4468412 A, US4446083 A, US4442059 A, US4372733 A, US4365455 A, US4324074 A, US4321776 A, US4320075 A, US4317317 A, US4307554 A, US4302979 A, US4302978 A, US4289564 A, US4271647 A, US4269011 A, US4226677 A, US4170093 A, US4155967 A, US4148332 A, US4144680 A, US4126976 A, US4104097 A, US4102956 A, US4094110 A, US4077177 A, US4069642 A, US4068777 A, US4021972 A, US3984266 A, US3956816 A, US3927497 A, US3922426 A, US3914077 A, US3906700 A, US3892367 A, US3886961 A, US3872634 A, US3824751 A, US3801009 A, US3769763 A, US3765605 A, US3719341 A, US3676976 A, US3666190 A, US3666189 A, US3643910 A, US3619432 A, US3619431 A, US3616070 A, US3572596 A, US3557515 A, US3518748 A, US3510041 A, US3504474 A, US3462521 A, US3410039 A, US3409222 A, US3397503 A, US3338010 A, US3315343 A, US3280525 A, US3278128 A, US3277219 A, US3233376 A, US3153302 A, US3139464 A, US3118010 A, US2952947 A, US2892239 A, US2836529 A, US2833593 A, US2579183 A, US2544828 A, US2414310 A, US2413243 A, US2388701 A, US2335300 A, US2270229 A, US2250175 A, US2223418 A, US2185749 A, US1870487 A, US1668486 A, US1492327 A, SU7616799, SU761679 T, SU715757 T, SU596291 T, SU559009 T, SU236743 T, JP54022470 A2, GB938939 A, GB815942 A, GB776077 A, GB2092215 A1, FR94811 E, FR935724 A, FR549619 A, FR2490745 A1, FR1489329 A, FR1383795 A, DE3329296 A1, DE2722984 A1, DE2716325 A1, DE2013337 A1, DE1052103 B, DE1052103 A, DE1052103 A, CA707523 A, BE549619 A, AU788927 A1,

Forward Citations: WO9528538, WO16055840, WO15118258, WO14085629, WO14085629, WO05082747, WO0063503, USRE39554, USD746670, USD711214, USD608440, US9650800, US9611662, US9605423, US9556626, US9546495, US9453606, US9441389, US9284114, US9217255, US9181690, US8991137, US8973336, US8684220, US8650830, US8627612, US8621790, US8191318, US8167676, US7971602, US7913462, US7765746, US7682993, US7506483, US7260998, US6892505, US6843443, US6840013, US6771731, US6739103, US6675548, US6616381, US6421963, US6276095, US6240686, US6090465, US5918438, US5881530, US5759849, US5680739, US5675941, US5673528, US5672506, US5647503, US5542229, US5436385, US5408793, US5361550, US5313763, US5168676, US5094044, US5025605, US2015267434, US2015197953, US2015075099, US2014250803, US2014245691, US2014231617, US2014144916, US2012311941, US2012297698, US2012285575, US2012211391, US2012102875, US2012000546, US2011219707, US2010320915, US2010294778, US2010154320, US2010154319, US2010154318, US2010101163, US2009212168, US2009025306, US2008196348, US2008128030, US2007102063, US2007094938, US2006230985, US2006207337, US2006037278, US2005210767, US2005166475, US2005097830, US2005077293, US2004045227, US2004006926, US2003233798, US2003150188, US2003054542, US2002187730, US2002074444, RU2582682, GB2473017, GB2473017, GB2218453, FR3017123, ES2136521, EP2578235, EP1690585, EP1087069, EP0829586, EP0572243, EP0357151, EP0357151, DE202008017456, AU2007100985,

Abstract:
Source: US4776145A An improved dome structure on a base is disclosed comprising of a membrane sandwiched between layers of rigidifying material such as shotcrete which also serve to embed the circumferential and radial prestressing members. Circumferential prestressing can be applied to minimize bursting stresses. Further layers of rigidifying material can then be applied over the circumferential prestressing as a final protection and cover. The radial prestressing materials can contain spacers or hooks to preclude the circumferential prestressing material from riding up on the structure. The lower portion of the dome can include a reverse curvature to minimize stresses and stabilize the structure.

15) Family number: 43489452 (US2009173037A) © PatBase

Title: PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY EQUIPMENTS

Priority: CA20082642047 20081020 CA20082765207 20081020 US20080148051 20080415 US20080971018 20080108 US20080248051 20081009 US20090248051 20091009 US20080811199 20081017 US20080971018 20080107 US20080148051 20081009 WO2008CA01809 20081017

Family:

Publication number	Publication date	Application number	Application date
AU2008346725 AA	20090716	AU20080346725	20081017
BRPI0819947 A2	20150616	BR2008PI19947	20081017
CA2642047 AA	20090707	CA20082642047	20081020
CA2642047 C	20120626	CA20082642047	20081020
CA2765207 AA	20090707	CA20082765207	20081020
CN101910530 A	20101208	CN200880124304	20081017
EP2240652 A1	20101020	EP20080870040	20081017
EP2240652 A4	20140611	EP20080870040	20081017
IL206699 A0	20101230	IL20080206699	20081017
IN01385MN2010 A	20101112	IN2010MN01385	20100629
JP2011508837 T2	20110317	JP20100540994T	20081017
JP5336514 B2	20131106	JP20100540994T	20081017
KR20110016853 A	20110218	KR20107013188	20081017
MX2010007574 A1	20101110	MX20100007574	20081017
NZ586584 A	20130531	NZ20080586584	20081017
US2009173037 AA	20090709	US20080248051	20081009
US2010281784 AA	20101111	US20080811199	20081017
US2011120049 AA	20110526	US20080971018	20080108
WO09086617 A1	20090716	WO2008CA01809	20081017

Probable Assignee: LEO ANO

Assignee(s):(std)**:** ANO LEO ; LEO ANO

Inventor(s):(std)**:** ANO LEO ; LEO ANO

Agent(s): SPRUSON AND FERGUSON; ADE AND CO INC; THOMSON NEIL DAVID; ANO LEO; JEROME D JACKSON JACKSON PATENT LAW OFFICE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/18 E04B1/343 E04B1/348 E04B1/61 E04B1/62 E04B1/66 E04B1/70 E04B1/74 E04B1/76 E04B1/80 E04C2/20 E04C2/24 E04C2/26 E04C2/30 E04C2/38 E04C2/52 E04C3/02 E04C3/29 E04D13/08 E04D13/18 E04G E04G21/00 E04H1/00 E06B3/66 F24F5/00 (Advanced/Invention);
E04B1/00 E04B1/18 E04B1/61 E04B1/62 E04B1/66 E04C2/10 E04C2/30 E04C2/38 E04C3/29 E04G21/00 (Core/Invention);
E04G (Subclass/Invention)

International class (IPC 1–7): E04B1/18 E04B1/62 E04C2/30 E04G21/00

CPC: F24F2005/0078 E04B1/74 E04B1/80 E04B1/0023 E04B1/30 E04B1/803 E04B2/7412 E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/1625 E04D13/17 E04D2013/0893 E06B3/6612 E06B3/6722 F24F5/0075 F24F13/18 Y02B30/92 Y02B80/12 Y02B80/24

European class: E04B1/00C E04B1/30 E04B1/74 E04B1/80 E04B1/80B E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/16A1C E04D13/17 E06B3/66D F24F13/18 F24F5/00K P04B2/74C2P P04D13/08W P06B3/67F2 Y02B10/22 Y02B30/92 Y02B80/12 Y02B80/24

US class: 52/16 52/16P 52/173.1 52/173.100S 52/173.3 52/173.300S 52/220.1 52/220.100S 52/302.1 52/302.100S 52/309.4 52/309.400S 52/633 52/633S 52/64 52/64S 52/741.1 52/741.100S 52/741.4 52/741.400P 52/745.13 52/745.130S 52/782.1 52/782.100P 52/782.100S 52/786.1 52/786.100S 52/79.1 52/79.100S

Classification Explorer

Cited documents: WO06123005 A1, US7788868 BB, US6976337 BB, US6916392 BB, US6857237 BA, US6830791 BA, US6793971 BB, US6705939 BB, US6701681 BB, US6676506 BB, US6637644 BB, US6622456 BB, US6584735 BB, US6578331 BA, US6446402 BA, US6429961 BA, US6216688 BA, US6209269 BA, US6158190 A, US6105336 A, US6000192 A, US5953883 A, US5890341 A, US5873203 A, US5787652 A, US5765330 A, US5761864 A, US5753069 A, US5608995 A, US5573618 A, US5424111 A, US5347779 A, US5269109 A, US5265389 A, US5197242 A, US4981003 A, US4671032 A, US4642958 A, US4571909 A, US4465058 A, US4393861 A, US4380994 A, US4303058 A, US4295415 A, US4236360 A, US4062347 A, US3981294 A, US3736715 A, US3643394 A, US3641724 A, US3343474 A, US3258889 A, US3217455 A, US3161267 A, US2641449 A, US2011023759 AA, US2010287851 AA, US2007251164 AA, US2007094964 AA, US2006123723 AA, US2005252108 AA, US2004209567 AA, US2004172892 AA, US2003217522 AA, US2003167714 AA, US2003150174 AA, US2003101664 AA, US2003041557 AA, US06000192, US05890341, JP5024756 U1, JP2001065074 A2, JP05024756 U, EP0794294 A1, DE19804008 A1,

Forward Citations: WO17017608, US9617750, US9562351, US9435113, US9310132, US9297164, US9234355, US9109364, US8789328, US8677696, US8375670, US8272182, US8152608, US2016040424, US2015361654, US2015292204, US2014230354, US2014182224, US2014133092, US2014124053, US2012318475, US2012304562, US2012108158, US2011308184, US2011225916, US2011107693, US2011091679, RU2582241, JP2011052411, EP3133221, CN103958796, CN102561725, CN102561725, CN102561531, CN102535841,

Abstract:
Source: US2009173037A This continuing present patent offers the "repeat at will" built–in on/off vacuum effect after installed at site, coordinating with the forced fluid to create a window treatment effect, and as well as being able to provide the three stages insulation value at the same time. The other parts of this continued patent are supplementation of additional claims and to complete and improve the parent patent regarding energy conservation for buildings. It offers more efficient ways of constructing energy efficient buildings for residential, commercial and industrial use.

16) Family number: 32847771 (US2008083181A) © PatBase

Title: INTEGRAL COMPOSITE–STRUCTURE CONSTRUCTION SYSTEM

Priority: EC20030004697 20030718 EC2003SP04697 20030718 US20060306969 20060117 WO2004EC00003 20040430 WO2003EC00003 20030718

Family:

Publication number	Publication date	Application number	Application date
AT393271 E	20080515	AT20040730490T	20040430
CN1823203 A	20060823	CN200480020203	20040430
DE602004013329 D1	20080605	DE200460013329T	20040430
ECSP034697 A	20040628	EC2003SP04697	20030718
EP1650371 A1	20060426	EP20040730490	20040430
EP1650371 B1	20080423	EP20040730490	20040430
IN06002DN2005 A	20091002	IN2005DN06002	20051222
US2008083181 AA	20080410	US20060306969	20060117
US7624550 BB	20091201	US20060306969	20060117
WO05007986 A1	20050127	WO2004EC00003	20040430
WO05007986 B1	20050421	WO2004EC00003	20040430

Probable Assignee: OSPINA PEDRO

Assignee(s):(std)**:** NEL OSPINA CABEZAS PEDRO ; OSPINA CABEZAS PEDRO NEL ; OSPINA CABEZAS PEDRO NEL FERNANDO ; OSPINA PEDRO

Inventor(s):(std)**:** NEL OSPINA CABEZAS PEDRO ; OSPINA CABEZAS PEDRO NEL ; OSPINA CABEZAS PEDRO NEL FERNANDO ; OSPINA PEDRO

Agent(s): LORENTE BERGES ANA ET AL; FURR LAW FIRM; JEFFREY

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B1/24 E04B1/30 E04B2/84 E04B5/00 E04B5/16 E04B5/21 E04B5/29 E04B5/40 E04B5/43 E04B9/22 E04C3/294 (Advanced/Invention); E04B2/84 (Advanced/Non–invention); E04B1/16 E04B1/24 E04B1/30 E04B2/84 E04B5/00 E04B5/16 E04B5/17 E04B5/32 E04B5/43 E04B9/22 E04C3/29 (Core/Invention); E04B2/84 (Core/Non–invention)

International class (IPC 1–7): E04B2/84 E04B5/00 E04B5/29 E04B5/40

CPC: E04B1/161 E04B1/24 E04B1/30 E04B2/845 E04B5/29 E04B5/40 E04B5/43 E04B2001/2415 E04B2001/2445 E04B2001/2448 E04B2001/2481 E04B2001/2484 E04C3/294

European class: E04B1/16A E04B1/24 E04B1/30 E04B5/29 E04B5/40 E04B5/43 E04C3/294 P04B1/24B22 P04B1/24B4 P04B1/24B40 P04B1/24D P04B1/24E P04B2/84P2

US class: 52/262 52/299 52/331 52/333 52/334 52/335 52/336 52/341 52/351 52/600 52/687

Classification Explorer

Cited documents: US6112482 A, US5918428 A, US5809722 A, US5595034 A, US5544464 A, US4653237 A, US4592184 A, US4584803 A, US4527372 A, US4115971 A, US3736716 A, US3596421 A, US2003115815 AA, LU88443 A, GB2053308 A1, EP1227198,

Forward Citations: WO14094458, WO14047738, WO08019699, US9562355, US9540815, US9506266, US9447553, US9260866, US9194095, US9180323, US8978340, US8943776, US8863455, US8752347, US8695294, US8407959, US8341907, US2015330075, US2015196785, US2015139719, US2015068138, US2014144101, US2014047786, US2013305652, US2012324811, ITCS20120013, EA019161, CN104812972,

CN104812972, CN103953111, CN103953111, CN103835422, CN103835422, CN103485483, CN103485479, CN103485478, CN103485477, CN103397696, CN103397696, CN103061417,

Abstract:
Source: US2008083181A Composite structural system for floors or roofs comprising steel beams and reinforced concrete slab or shear walls comprising steel columns and reinforced concrete diaphragms. In both cases a steel plate with holes crossed with rebars is welded to the steel beam or to the steel column which performs the integral combination of the concrete, the structural element and the rebars.

0) US2008098687A – SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HI...

17) Family number: 41770225 (US2008098687A) © PatBase

Title: SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HIGH HIGH STRENGTH MASONRY STRUCTURES – WITH SUPERSTRONGBLOKS

Priority: US20060854913P 20061027 US20070925302P 20070419 US20070977470 20071025 WO2007US82488 20071025

Family:

Publication number	Publication date	Application number	Application date
AU2007317627 AA	20080515	AU20070317627	20071025
CA2667658 AA	20090427	CA20072667658	20071025
CA2667658 C	20131001	CA20072667658	20071025
CN101611202 A	20091223	CN200780046836	20071025
EP2074267 A2	20090701	EP20070854412	20071025
IL198399 A0	20100217	IL20070198399	20071025
IN02814DN2009 A	20090619	IN2009DN02814	20090428
JP2010508453 T2	20100318	JP20090534851T	20071025
KR20090076991 A	20090713	KR20097010754	20071025
MX2009004524 A1	20090619	MX20090004524	20071025
RU2009119974 A	20101210	RU20090119974	20071025
US2008098687 AA	20080501	US20070977470	20071025
US8850763 BB	20141007	US20070977470	20071025
WO08057778 A2	20080515	WO2007US82488	20071025
WO08057778 A3	20081106	WO2007US82488	20071025

Probable Assignee: PATRICIA MARSH

Assignee(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F ; ROGER MARSH ; PATRICIA MARSH ; PATRICIA M MARSH ; ROGER F MARSH

Assignee(s): 3B CONSTRUCTION SOLUTIONS INC ; BOLT A BLOK INC ; MARSH ROGER F ; MARSH PATRICIA M

Inventor(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F

Inventor(s): PATRICIA M MARSH ; ROGER F MARSH ; MARSH ROGER ; MARSH PATRICIA

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BENNETT JONES LLP; EVENS PAUL JONATHAN; RITCHISON LAW OFFICES PC JOHN D RITCHISON; BRANNON SOWERS AND CRACRAFT; KRAMER LESLIE P

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04C5/08 E04H5/00 E04H5/08 F16B17/00 (Advanced/Invention); E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04H5/00 F16B17/00 (Core/Invention); E04B (Subclass/Invention)

International class (IPC 1–7): E04B1/02

CPC: E04B2/16 E04B2002/0254

European class: E04B2/16 P04B2/02M3E

US class: 411/84 52/223.7 52/293.2 52/606

Classification Explorer

Cited documents: US962463 A, US952305 A, US6915614 BB, US6691471 BB, US6427390 BA, US6244785 BA, US6178714 BA, US6178714 B1, US6167669 BA, US6167669 B1, US6098357 A, US5950319 A, US5809732 A, US5511902 A, US4640071 A, US3763609 A, US3296758 A, US2963828 A, US2007186502 AA, US2007107333 AA, US2007017176 AA, US2006168906 AA, US2004020145 AA, US1892605 A, US1753451 A, JPS55160459 U, JP6040146 U1, JP55160459 U1, JP4020632 A2, JP2002081152 A2, JP2002030682 A2,

Forward Citations: WO11143248, US9523201, US9328501, US9045877, US8931223, US8893447, US8225578, US2016169526, US2014130434, US2013212965, US2013129444, US2011167749, ITBO20110240, CN102605876, CN102605876,

Abstract:
Source: US2008098687A An improved, high strength construction system that uses post tensioning. It is comprised of a series of interconnected, super heavy duty hollow core blocks 102 with minimal ducts 103, a series of tendons 105, and a plurality of anchors or plates 104 with additional features. The system 101 is configured with the plurality of adjacent blocks 102 contiguous and touching one another and demountably coupled to each other by means of the tendons 105 and anchors 103. The unique features include a strong, durable full plate 104 and bolt 105 both of which may be treated for corrosion resistance. This new coupling results in a structure that is far stronger than an ordinary block structure built with mortar and standard reinforcing. The SYSTEM has more predictable and controlled strength which is stronger than most reinforced concrete systems.

18) Family number: 12927850 (US6330776B) © PatBase

Title: STRUCTURE FOR REINFORCING CONCRETE MEMBER AND REINFORCING METHOD

Priority:
JP19970251193 19970916 JP19970251194 19970916 JP19980146403 19980527
JP19980199317 19980714 JP19970251195 19970916 JP19980001126 19980106
WO1998JP04149 19980916 JP19980206985 19980722 JP19980206982 19980722
JP19980206984 19980722 JP19980206983 19980722

Family:

Publication number	Publication date	Application number	Application date
CA2302790 AA	20000303	CA19982302790	19980916
EP1016767 A1	20000705	EP19980942996	19980916
EP1016767 A4	20010801	EP19980942996	19980916
JP11152907 A2	19990608	JP19980206982	19980722
JP11152931 A2	19990608	JP19980206983	19980722
JP11256838 A2	19990921	JP19980206984	19980722
JP2000027446 A2	20000125	JP19980199317	19980714
JP2000045565 A2	20000215	JP19980206985	19980722
JP3870364 B2	20070117	JP19980199317	19980714
JP3870365 B2	20070117	JP19980206984	19980722
JP3882348 B2	20070214	JP19980206983	19980722
JP3882349 B2	20070214	JP19980206985	19980722
JP3918310 B2	20070523	JP19980206982	19980722
KR100408437 B1	20031206	KR20007002781	20000316
KR20010024043 A	20010326	KR20007002781	20000316
TW406160 B	20000921	TW19980115453	19980916
US6330776 BA	20011218	US20000517509	20000302
WO9914453 A1	19990325	WO1998JP04149	19980916

Probable Assignee: NIPPON STEEL CORP

Assignee(s):(std): FUJITA TADAO ; IKETANI JUN ICHI ; INADA YASUO ; JINNO YASUO ; SHIMIZU CONSTRUCTION CO LTD ; NIPPON STEEL CORP ; TONEN CORP ; SAITO HIDETO ; TSUKAGOSHI HIDEO ; SAWAIDE MINORU ; SHIMIZU YOSHIHIKO ; NIPPON STEEL AND SUMITOMO METAL CORP

Assignee(s): SHIMIZU CORP

Inventor(s):(std): IKETANI JUN ICHI ; IKETANI JUNICHI ; INADA YASUO ; JINNO YASUO ; SAITO HIDEO ; SAITO HIDETO ; SAWAIDE MINORU ; SHIMIZU YOSHIHIKO ; TSUKAGOSHI HIDEO ; FUJITA TADAO

Inventor(s): FUJITA TADAO AND

Agent(s): SIM AND MCBURNEY

Designated states: AT BE CA CH CY DE DK ES FI FR GB GR IE IT KR LU MC NL PT SE US

International class (IPC 8–9): D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02 (Advanced/Invention);
E04G23/02 (Advanced/Non–invention);
D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02 (Core/Invention)

International class (IPC 1–7): D07B9/00 E04B1/20 E04C5/07 E04C5/16 E04G21/12 E04G23/02 E04H9/02

CPC: E04C5/07 E04G23/0218 E04H9/02 E04G23/0225 E04G2023/0251 E04G2023/0262

European class: E04C5/07 E04G23/02C E04H9/02

US class: 52/167.1 52/514 52/649.1 52/649.2 52/698 52/721.4

Classification Explorer

Cited documents: WO9621785 A1, US6189286 BA, US5960597 A, US5937606 A, US5924262 A, US5657595 A, US5649398 A, JP9144338 A2, JP9144334 A2, JP9072105 A2, JP9072101 A2, JP4189977 A2, JP3033360 A2, FR2754556 A1, DE19733065 A1, DE19702246 A1,

Forward Citations: WO16005941, WO14138092, WO04003316, WO0204759, US9290957, US9290956, US9194140, US9085898, US8567146, US8429877, US7493738, US7453544, US7311964, US7141284, US6964141, US6652187, US6457289, US2014245695, US2010147449, US2009013625, US2007199264, US2007121050, US2005139308, US2004040257, US2004025465, US2003181114, RU2494204, KR101736040, KR101681520, KR101618252, KR101395202, KR100806958, JP5848103, JP5757632, JP4952049, JP4639380, JP4182855, JP4043271, JP2014015791, JP2013108267, JP2013087934, JP2013007250, JP2012052293, JP2011196138, JP2008297871, JP2008231827, JP2007303100, JP2007009482, JP2007002468, JP2006052633, JP2005120629, JP2003293598, GB2450988, GB2450988, ES2342527, EP1726742, EP1726742, DE102007010574, CN104196256, CN104196256, CN102182326, CN102153369,

Abstract:
Source: US6330776B In the structure for reinforcing a concrete member and the reinforcing method of the present invention, a reinforcing sheet is arranged and joined to a various kinds of concrete member, such as column, beam, wall, floor, and the like, by applying the reinforcing sheet to the surface of the concrete member and attaching to the fixing anchors joined to the concrete member or the other concrete member surrounding the concrete member. The fixing anchor comprises a large amount of reinforcing fiber, and is obtained by bundling a part of the reinforcing fiber. The unbundled portion of the fixing anchor is spread along the surface of the concrete member. The reinforcing sheet is over−lapped to the unbundled portion using resin adhesives. In addition, reinforcing fibers, such as carbon fiber, aramid fiber, glass fiber, and the like are preferably used as the material comprising the fixing anchor and reinforcing sheet. Thereby, the reinforcing member can be joined via the fixing anchor to the concrete members. Therefore, it is possible to securely join the edges of the reinforcing member, and reliably exert the reinforcing effects on the concrete member.

0) CN105297896A – CORED BRACKET HAUNCHED TYPE COMPOUND CONCRETE–F...

1) Family number: 61578277 (CN105297896A) © PatBase

Title:	CORED BRACKET HAUNCHED TYPE COMPOUND CONCRETE–FILLED STEEL TUBE COLUMN–STEEL BEAM NODE
Priority:	CN201510851692 20151130

Family:

Publication number	Publication date	Application number	Application date
CN105297896 A	20160203	CN201510851692	20151130

Probable Assignee:	UNIV NORTH CHINA TECHNOLOGY
Assignee(s):(std)**:**	NORTH CHINA UNIV OF TECHNOLOGY ; UNIV NORTH CHINA TECHNOLOGY
Inventor(s):(std)**:**	WANG QIANG ; ZHANG YUFEN
International class (IPC 8–9):	E01D19/00 E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN105297896A The invention discloses a cored bracket haunched type compound concrete–filled steel tube column–steel beam node and relates to a joint connection form of compound concrete–filled steel tube columns and steel beams, belonging to the technical field of constructional engineering and bridge engineering. The joint is composed of a compound concrete–filled steel tube column, a steel beam and a force transfer member, wherein the compound concrete–filled steel tube column consists of an inner steel tube, an outer steel tube and filled concrete; the steel beam consists of upper and lower flanges and webs; the force transfer member consists of a steel bracket and an inclined haunch plate; and the steel bracket is composed of upper and lower flanges and webs. The steel bracket webs are continuously penetrated at the joint core, and the upper and lower flanges of the steel bracket are discontinuous inside the inner steel tube; the joint of the steel bracket and the inner and outer steel tubes is subjected to weld reinforcement, and one part, which extends out of the outer steel tube, of the steel bracket is in stud welded connection with the steel beam; and meanwhile, the inclined haunch plate is welded between the steel beam and the compound concrete–filled steel tube column. The joint disclosed by the invention is simple in structure and convenient in construction, combines the form of cored bracket and haunched type joints and has the advantages of high rigidity and strength, high integrity, clear force transfer path and the like, and rigid connection between the compound concrete–filled steel tube column and the steel beam can be realized.

0) CN205116561U – REINFORCING BAR CONCRETE DYSMORPHISM POST OF BU...

2) Family number: 61260965 (CN205116561U) © PatBase

Title: REINFORCING BAR CONCRETE DYSMORPHISM POST OF BUILT –IN CFRP PIPE

Priority: CN201510664996 20151016 CN201520796771U 20151016

Family:

Publication number	Publication date	Application number	Application date
CN105201146 A	20151230	CN201510664996	20151016
CN205116561 U	20160330	CN201520796771U	20151016

Probable Assignee: UNIV SHENYANG JIANZHU

Assignee(s):(std)**:** SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU

Inventor(s):(std)**:** MOU LU ; XU CHENGHAO ; XU YAFENG ; ZHANG YUE

International class (IPC 8–9): E04C3/36 (Advanced/Invention)

Classification Explorer

Cited documents: KR200461569 Y1, JP4052352 A2, JP2012237162 A2, CN205116561 U, CN104453096 A, CN104389380 A, CN104314234 A, CN102425268 A,

Forward Citations: CN105201146,

Abstract:
Source: CN205116561U The utility model aims at providing a reinforcing bar concrete dysmorphism post of built –in CFRP pipe. The utility model discloses the technological solution that adopts is a reinforcing bar concrete dysmorphism post of built –in CFRP pipe, including reinforcing bar, reinforcing bar, CFRP pipe and concrete, the reinforcing bar form and be located special –shaped post limb position by steel sheet welding, the reinforcing bar include the stirrup and indulge the muscle, the stirrup enclose into the skeleton, vertical muscle setting in special –shaped column section bight, the center of the crossing department of special –shaped post limb be provided with the CFRP pipe, special –shaped post intussuseption be filled with the concrete. Special –shaped column section form be T or L or cross.

3) Family number: 60995939 (WO17045223A1) © PatBase

Title: PREFABRICATED PIER COLUMN MEMBER WITH STEEL–CONCRETE COMPOSITE STRUCTURE

Priority: CN201510601078 20150918 CN201516010783 20150918 WO2015CN090689 20150925

Family:

Publication number	Publication date	Application number	Application date
AU2015409344 AA	20170323	AU20150409344	20150925
CN105113389 A	20151202	CN201510601078	20150918
CN105113389 B	20170125	CN201510601078	20150918
EP3181755 A1	20170621	EP20150903296	20150925
WO17045223 A1	20170323	WO2015CN090689	20150925

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** FU ZHONGQIU ; JI BOHAI ; YU ZHENPENG

Agent(s): SHELSTON IP PTY LTD; WALSH MARIE GORETTI; NANJING SUGAO PATENT AND TRADEMARK FIRM ORDINARY PARTNERSHIP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E01D19/02 E01D21/00 (Advanced/Invention)

CPC: E01D19/02

Classification Explorer

Cited documents: WO14193022 A1, KR20140027701 A, KR101406035 B1, KR101263557 B1, JP2009161905 A2, CN204435210 U, CN204282199 U, CN202989763 U, CN202672025 U, CN202131563 U, CN202047358 U, CN104746422 A, CN104404869 A, CN104294753 A, CN104278621 A, CN103015309 A, CN101831875 A, CN101074554 A,

Forward Citations: CN105386405,

Abstract:
Disclosed is a prefabricated pier column member with a steel–concrete composite structure, comprising a reinforcing tube (2) buried in a pile foundation platform (1). The reinforcing tube is connected to the bottom of a lower section (3) of a hollow steel tube pier and is filled with concrete, and the upper and lower sections of the pier column are connected with each other via sections and are reinforced by a pre–buried local steel mesh. A steel beam (12) is connected to an upper section (8) of the hollow steel tube pier column in an assembly way. A pre–stressed tension duct is reserved on the steel beam and the upper section of the pier column. Disclosed is also a construction method for the prefabricated pier column member with a steel–concrete composite structure. The method can shorten the construction period, reduce the construction difficulties, and speed up the construction schedule. The connection mode used is safe, reliable and easy to control; and the advantages of compressive property of concrete and tensile property of steel are fully taken. The whole member has a good application prospect because it is cost–effective and convenient and the construction of which is simple and fast.

0) CN205000555U – HUGE POST OF MULTICAVITY GUAN ZHONGGUAN REINFOR...

4) Family number: 61046592 (CN205000555U) © PatBase

Title: HUGE POST OF MULTICAVITY GUAN ZHONGGUAN REINFORCED CONCRETE OF SPACE RESTRAINT

Priority: CN201510561889 20150907 CN201520685311U 20150907

Family:

Publication number	Publication date	Application number	Application date
CN105133793 A	20151209	CN201510561889	20150907
CN205000555 U	20160127	CN201520685311U	20150907

Probable Assignee: YAO PANFENG

Assignee(s):(std)**:** YAO PANFENG

Inventor(s):(std)**:** YAO PANFENG

International class (IPC 8–9): E04C3/36 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP2005220698 A2, JP2002129653 A2, JP11013139 A2, CN2801934 Y, CN205000555 U, CN202248269 U, CN104674986 A, CN103967214 A,

Forward Citations: CN105133793,

Abstract:
Source: CN205000555U The utility model relates to a huge post of multicavity guan zhongguan reinforced concrete of space restraint, wherein, huge post includes core steel pipe concrete part and outsourcing steel pipe concrete part, wherein, cavity in the core steel pipe forms, the indoor packing of inner chamber has the inner chamber concrete to have the framework of steel reinforcement that link up in the cavity middle part including and, wherein, the core steel pipe with form outer cavity between the outsourcing steel pipe, the indoor packing of exocoel has the framework of steel reinforcement that exocoel concrete and at least one have a perfect understanding, the core steel pipe with it forms space steel tube structure to connect through vertical connecting plate between the outsourcing steel pipe. The outer steel pipe of this huge post is connected to together through vertical connecting plate with interior steel pipe, and forming space steel tube structure can effectively improve the atress performance of traditional steel pipe concrete. Has stronger compressive capacity and under long –term loading, the steel is good with concrete combined action performance. The convenience that has good anti –seismic performance, fire behavior and construction.

0) CN205012561U – HIGH STRENGTH SQUARE STEEL TUBE CONCRETE COLUMN...

5) Family number: 61045075 (CN205012561U) © PatBase

Title: HIGH STRENGTH SQUARE STEEL TUBE CONCRETE COLUMN

Priority: CN201510537965 20150828 CN201520658583U 20150828

Family:

Publication number	Publication date	Application number	Application date
CN105133790 A	20151209	CN201510537965	20150828
CN205012561 U	20160203	CN201520658583U	20150828

Probable Assignee: FENGFAN GREEN BUILDINGS CHANGSHU CO LTD

Assignee(s):(std)**:** FENGFAN GREEN BUILDINGS CHANGSHU CO LTD

Assignee(s): STYLE GREEN BUILDING CHANGSHU LTD ; FENGFAN GREEN BUILDINGS CHANGSHU CO

Inventor(s):(std)**:** ZHAO JIANJUN ; ZHAO JINYUAN ; ZHAO YUEHUA

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100076576 A, JP9195444 A2, CN205012561 U, CN103615071 A, CN102635202 A, CN102003042 A, CN101818543 A,

Forward Citations: CN105133790,

Abstract:
Source: CN205012561U The utility model discloses a high strength square steel tube concrete column, include: square steel tube, wire spiral, reinforcing bar and concrete, wire spiral embeds the square steel tube center, the reinforcing bar is arranged in among the wire spiral, the square steel tube inner wall with distance between the wire spiral outer wall is greater than the wire spiral inner wall with distance between the reinforcing bar outer fringe, the concrete fills up the inner space of square steel tube. The utility model relates to a high strength square steel tube concrete column, simple structure, reasonable in design, it reaches the reinforcing bar that contacts with wire spiral through built –in wire spiral, is showing and is improving the restrictive ability of square steel tube to the concrete to prevent effectively that square steel tube straight flange steel sheet from taking place local buckling, the utility model discloses a square steel tube concrete column has excellent bearing capacity, ductility performance and higher intensity, is the ideal tubular product of building field.

6) Family number: 61045084 (CN105133792A) © PatBase

Title: STEEL REINFORCED CONCRETE CROSS–SHAPED COLUMN WITH HONEYCOMB–TYPE WEB AND CONSTRUCTION METHOD THEREOF

Priority: CN201510542880 20150828

Family:

Publication number	Publication date	Application number	Application date
CN105133792 A	20151209	CN201510542880	20150828

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** CAO PINGZHOU ; MAO FANSHEN ; WU KAI ; XU FANGYUAN ; ZHANG HENG

International class (IPC 8–9): E04B1/98 E04C3/36 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, JP3066851 A2, CN2797485 Y, CN104234318 A, CN103850350 A, CN103216039 A, CN103015628 A, CN101302776 A,

Forward Citations: CN105544867,

Abstract:
Source: CN105133792A The invention discloses a steel reinforced concrete cross–shaped column with a honeycomb–type web and a construction method thereof. The steel reinforced concrete cross–shaped column with the honeycomb–type web comprises closed profiled steel plates, the honeycomb–type web and inside–filled concrete. The closed profiled steel plates form a hollow column body in a surrounding mode, the cross section of the hollow column body is in a cross shape, the section of the honeycomb–type web is in a cross shape, the honeycomb–type web comprises four web units, honeycomb–type through holes are formed in all the web units, and flange plates are welded to the ends of the web units. The honeycomb–type web is symmetrically arranged inside the hollow column body. According to the scheme, the honeycomb–type web does not affect working of a vibrator, the concrete can flow through the through holes in the web and is convenient to pour, the problems of pouring quality are reduced, and the bearing capacity of the concrete is remarkably improved. In addition, the steel reinforced concrete cross–shaped column can be prefabricated in a factory, formwork erecting and steel bar arranging are not needed in construction, and construction is rapid and convenient.

0) CN104929364A – AUXILIARY CONSTRUCTION METHOD FOR LONGSPAN CANT...

7) Family number: 60425934 (CN104929364A) © PatBase

Title: AUXILIARY CONSTRUCTION METHOD FOR LONGSPAN CANTILEVER ENTIRE LAMINATED VIERENDEEL TRUSS STRUCTURE

Priority: CN201510389649 20150706

Family:

Publication number	Publication date	Application number	Application date
CN104929364 A	20150923	CN201510389649	20150706
CN104929364 B	20170322	CN201510389649	20150706

Probable Assignee: GUANGDONG FOURTH CONSTRUCTION ENGINEERING CO LTD

Assignee(s):(std)**:** GUANGDONG FOURTH CONSTRUCTION ENGINEERING CO LTD

Assignee(s): GUANGDONG PROVINCE FOURTH CONSTRUCTION LTD ; GUANGDONG FOURTH CONSTRUCTION ENGINEERING CO

Inventor(s):(std)**:** DENG YINGQIANG ; GUO GUANBIN ; LIU SI ; QIU LI ; WANG QILIN ; ZHAO QINGQIANG ; ZHOU YU ; ZHU JIAYUE

International class (IPC 8–9): E04B1/00 E04B1/19 E04G21/00 E04G21/14 (Advanced/Invention)

Classification Explorer

Cited documents: US2012304584 AA, JP2003293591 A2, CN204059966 U, CN203373850 U, CN202248253 U, CN103790229 A,

Abstract:
Source: CN104929364A The invention provides an auxiliary construction method for a longspan cantilever entire laminated Vierendeel truss structure. The method includes the steps that 1, a cantilever reinforced concrete Vierendeel truss is constructed; 2, a steel structure column temporary supporting system is constructed, wherein the system is composed of a plurality of steel structure columns, one steel structure column is erected at the position corresponding to a supporting column under each cantilever beam, each steel structure column is formed by connecting three sections of steel columns, and the installation process includes the steps of pasting a steel base plate on the first layer of floor, marking steel column installation locations on the steel base plate, hoisting the upper sections of steel columns to abut against the cantilever beams, hoisting the middle sections of steel columns to be in butt joint with the upper sections of steel columns, hoisting the lower sections of steel columns to be in butt joint with the middle sections of steel columns, enabling the steel structure columns to just fall off onto the steel column installation locations of the steel base plate, jacking up the steel structure columns to abut against the cantilever beams, enabling the gaps between the steel structure columns and the steel base plate to be filled with steel plates and conducting full welding; 3, laminated layers above the Vierendeel truss are continuously constructed; 4, the steel structure column temporary supporting system is removed. By the adoption of the method, the effectiveness and safety of constructing the entire laminated Vierendeel truss which is high in cantilever height and large in span can be guaranteed.

0) CN104912196A – CONNECTION JOINT OF CONCRETE FILLED STEEL TUBUL...

8) Family number: 60366680 (CN104912196A) © PatBase

Title: CONNECTION JOINT OF CONCRETE FILLED STEEL TUBULAR COLUMN AND ENCLOSED U–SHAPED STEEL CONCRETE COMPOSITE BEAM

Priority: CN201510329603 20150615

Family:

Publication number	Publication date	Application number	Application date
CN104912196 A	20150916	CN201510329603	20150615

Probable Assignee: UNIV SHANDONG JIANZHU

Assignee(s):(std)**:** SHANDONG JIANZHU UNIV ; UNIV SHANDONG JIANZHU

Inventor(s):(std)**:** JIANG WEI ; LIN YAN ; ZHOU XUEJUN

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2003343008 A2, CN203742000 U, CN203145194 U, CN103161224 A, CN102561530 A,

Forward Citations: CN105569191,

Abstract:
Source: CN104912196A The invention provides a connection joint of a concrete filled steel tubular column and enclosed U–shaped steel concrete composite beam; in order to save materials and solve the problem that since a connection plate at the connection part of a composite beam bottom plate and a steel pipe outwards extends, an indoor corner has a convex angle to influence the beautiful sense, an inner partition plate is arranged at a position corresponding to a U–shaped steel bottom plate in the steel pipe, and the periphery of the inner partition plate is welded with the inner wall of the steel pipe. Sleeves which are movably connected with the end parts of hogging moment reinforcing steel bars are correspondingly arranged at two relative ends in the steel pipe along the length direction of the composite beam respectively; and the sleeves are welded with the outer wall of the steel pipe. The joint is capable of relieving the condition that the bearing capacity of the steel pipe is weakened due to hole forming in the side wall of the steel pipe; the welding workload is reduced; construction is facilitated; and assembly is realized. In order to effectively transmit a load, a horizontal stiffening plate is fixedly welded at positions corresponding to the sleeves in an inner cavity of the steel pipe, and the welding workload in field is reduced; a U–shaped steel side plate is connected with the wall of the steel pipe by adopting high–strength bolts through connection plates; the connection plates are connected with the wall of the steel pipe by angle welding; and welding is completed in a factory.

0) CN104947802A – NODE FOR CONNECTING CONCRETE–FILLED STEEL TUBE ...

9) Family number: 60477997 (CN104947802A) © PatBase

Title: NODE FOR CONNECTING CONCRETE–FILLED STEEL TUBE COLUMN AND EXTERNAL WRAPPING U–SHAPED STEEL CONCRETE COMPOSITE BEAM

Priority: CN201510329959 20150615

Family:

Publication number	Publication date	Application number	Application date
CN104947802 A	20150930	CN201510329959	20150615

Probable Assignee: UNIV SHANDONG JIANZHU

Assignee(s):(std)**:** SHANDONG JIANZHU UNIV ; UNIV SHANDONG JIANZHU

Inventor(s):(std)**:** LIN YAN ; YANG RONGQIAN ; ZHOU XUEJUN

International class (IPC 8–9)**:** E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Cited documents: JP7158161 A2, JP11124909 A2, CN203742000 U, CN103967133 A,

Abstract:
Source: CN104947802A The invention provides a node for connecting a concrete–filled steel tube column and an external wrapping U–shaped steel concrete composite beam. The node facilitates the pouring of concrete in a steel tube, easily guarantees pouring quality of concrete in a node area, is favorable for welding operation and easily guarantees weld seam quality. An outer annular plate is welded to the outer side of the steel tube at the position of a U–shaped steel base plate, the two opposite ends inside the outer annular plate in the length direction of the composite beam are connected with the U–shaped steel base plate having undergone limb cutting through butt joint weld seams, the weld seams do not crack easily, the connecting strength is high, and the vibration resistance is good. Sleeves capable of being movably connected with the ends of a hogging moment steel rib are arranged at the two opposite ends inside the steel tube in the length direction of the composite beam respectively; and the sleeves are welded to an outer wall of the steel tube. The structural type can reduce the weakening of steel tube bearing capacity caused by hole opening in a side wall of the steel pipe, the welding workload is reduced, and the construction and assembly are facilitated. To effectively transmit a load, horizontal reinforcing plates are fixedly welded to the positions of a steel tube inner cavity corresponding to the sleeves.

0) CN104912206A – SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUM...

10) Family number: 60363643 (CN104912206A) © PatBase

Title: SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUMN–I–SHAPED STEAL BEAM FRAMEWORK NODE

Priority: CN201510288317 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104912206 A	20150916	CN201510288317	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** LIU JIEPENG ; LIU JINGCHEN ; XU CHUANGZE ; YANG YUANLONG ; ZHOU XUHONG

International class (IPC 8–9)**:** E04B1/58 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, CN202544241 U, CN202139694 U, CN201433512 Y, CN103541512 A,

Abstract:
Source: CN104912206A The invention discloses a special–shaped concrete filled steel tube column–I–shaped steal beam framework node. The invention aims at solving the problems of strict anti–seismic design requirement and poor anti–seismic performance of a conventional reinforced concrete special–shaped column framework node, improving design indexes of the maximum use height and the column shaft compression ratio of a special–shaped column structure house and further promoting the use of the special–shaped column structure in a high–fortification–intensity region, and provides the special–shaped concrete filled steel tube column–I–shaped steal beam framework node. In order to reduce the relatively high steel consumption of the special–shaped concrete filled steel tube column and framework node and solve the local buckling problem of a column steel tube and a node steel plate, construction measures of installing pulling steel bar reinforcing ribs inside a special–shaped steel tube and installing vertical rib plates in beam column connecting positions are used; the constraint effect of the special–shaped steel tube on the concrete is improved; the bearing capability of a special–shaped concrete filled steel tube is further improved; meanwhile, the capability of the node for transmitting the internal force of the beam post is improved; and the anti–seismic capability of the special–shaped column framework node is further improved.

0) CN104863271A – CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CO...

11) Family number: 60198362 (CN104863271A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CONCRETE BEAM JOINT CONNECTION METHOD

Priority: CN201510288472 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104863271 A	20150826	CN201510288472	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** GU JUN ; LIU JIEPENG ; YU YU

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP4696843 B2, JP2006144427 A2, CN203866976 U, CN203640061 U, CN201507030 U, CN104499575 A, CN103821235 A,

Abstract:
Source: CN104863271A The invention belongs to the field of building structures, and particularly relates to a concrete–filled steel tube column–reinforced concrete beam joint connection method. The method is a novel connection method aiming to solve the problems that a connection joint of a concrete–filled steel tube column and a reinforced concrete beam is large in welding workload and large in construction operation difficulty. The method is characterized in that an upper flange plate, a lower flange plate, a vertical plate, a plurality of longitudinal ribs, a plurality of sleeves and a circular steel pipe are included and has the advantages that the vertical plate is narrow, the beam end rib drawing arrangement is not affected by the vertical plate; the tail ends of reinforcing steel bars are provided with the sleeves, the length of the lap joint segment is decreased, the length of the upper flange plate and the lower flange plate can be decreased, conveying is facilitated, and steel can be saved; connection among the upper flange plate, the lower flange plate, the vertical plate and column type steel flange is finished in a factory, the construction stage is free of welding work, and construction is fast and convenient to conduct.

0) CN204645314U – MULTICAVITY BODY RECTANGLE OUTSOURCING STEEL SH...

12) Family number: 59913438 (CN204645314U) © PatBase

Title: MULTICAVITY BODY RECTANGLE OUTSOURCING STEEL SHEET SHEAR WALL

Priority: CN201510203426 20150427 CN201520257574U 20150427

Family:

Publication number	Publication date	Application number	Application date
CN104790559 A	20150722	CN201510203426	20150427
CN204645314 U	20150916	CN201520257574U	20150427

Probable Assignee: CHINA NORTHEAST ARCHITECTURAL DESIGN AND RES INST CO LTD

Assignee(s):(std)**:** CHINA NORTHEAST ARCHITECTURAL DESIGN AND RES INST CO LTD ; CHINA STATE CONSTRUCTION CO ; CHINA STATE CONSTRUCTION ENGINEERING CORP LTD

Assignee(s): CHINA NORTHEAST ARCHITECTURAL DESIGN AND RESEARCHINSTITUTE CO

Inventor(s):(std)**:** CHEN PENG ; CHEN YONG

International class (IPC 8–9): E04B2/56 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014062379 A2, CN204645314 U, CN1959027 A, CN103074951 A,

Forward Citations: CN106013607, CN105781364, CN104790559,

Abstract:
Source: CN204645314U (B,) multicavity body rectangle outsourcing steel sheet shear wall, lower rib board, the floor roof beam that corresponds position department tip cavity by the first outsourcing steel sheet along the wall body thickness orientation, multicavity body rectangle outsourcing steel sheet shear wall's tip floor, cant chisei, multicavity body rectangle outsourcing steel sheet shear wall's middle floor, concrete, the floor roof beam of pouring corresponds position department tip cavity along wall body length direction's second outsourcing steel sheet, the cavity in last floor, floor roof beam correspond the position, go up the hole of reserving concreting on floor and the lower rib board, upward floor and lower rib board and the first outsourcing steel sheet and second outsourcing steel sheet or tip floor are connected on the bight air vent hole of reservation and are formed. The utility model discloses set the shear wall to the multicavity body, concreting in the cavity is equivalent to and is in the same place a plurality of rectangular concrete –filled steel tubular column (CFST) support connnections that outsourcing steel sheet and floor can be made in the mill, and the construction is simple, and the without template is energy –concerving and environment –protective, has the advantage of ordinary rectangle reinforced concrete wall and built –in steel sheet shear wall simultaneously. (B,)

0) CN204456458U – CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL T...

13) Family number: 59729340 (CN204456458U) © PatBase

Title: CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL TUBULAR COLUMN AND H–TYPE STEEL GIRDERS

Priority: CN201520101680U 20150212

Family:

Publication number	Publication date	Application number	Application date
CN204456458 U	20150708	CN201520101680U	20150212

Probable Assignee: JIANGSU HUAJIAN CONSTRUCTION CO LTD

Assignee(s):(std)**:** JIANGSU HUAJIAN CONSTRUCTION CO LTD

Assignee(s): CONSTRUCTION CONSTRUCTION CO LTD JIANGSU PROVINCE CHINA ; JIANGSU HUAJIAN CONSTRUCTION CO

Inventor(s):(std)**:** CHEN YIJIAN ; JIANG ZHENGWU ; SHI GAOCHENG ; WU BIQIAO ; ZHOU QITAI

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204456458U The utility model discloses a connecting structure of a concrete–filled steel tubular column and H–type steel girders. The connecting structure of the concrete–filled steel tubular column and the H–type steel girders comprises a steel tube filled with concrete, a reinforcing ring welded to the steel tube in a sleeving mode and the H–type steel girders connected with the reinforcing ring in a welded mode, wherein the reinforcing ring comprises a ring web, the H–type steel girders comprise girder webs, the connecting structure of the concrete–filled steel tubular column and the H–type steel girders further comprises vertical connecting plates connected with the ring web through bolts and the girder webs through bolts respectively, and a transverse reinforcing rib is arranged on the surface of each vertical connecting plate. The connecting structure of the concrete–filled steel tubular column and the H–type steel girders improves the reliability and the stability of a connection point structure and reduces the weakening due to factors such as welding quality and welding residual stress on the connection point bearing capacity.

14) Family number: 59407650 (CN204475670U) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN WITH BUILT–IN PRE–PROCESSING SEMICONTINUOUS STEEL REINFORCEMENT CAGE

Priority: CN201510060416 20150205 CN201520082003U 20150205

Family:

Publication number	Publication date	Application number	Application date
CN104675019 A	20150603	CN201510060416	20150205
CN104675019 B	20170419	CN201510060416	20150205
CN204475670 U	20150715	CN201520082003U	20150205

Probable Assignee: YAO PANFENG

Assignee(s):(std)**:** YAO PANFENG

Inventor(s):(std)**:** YAO PANFENG

International class (IPC 8–9): E04B1/94 E04B1/98 E04C3/34 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014062379 A2, JP10204993 A2, GB2184759 B2, CN2801934 Y, CN204475670 U, CN204059759 U, CN102995834 A, CN101519897 A,

Forward Citations: CN106013607, CN105178358, CN105178358, CN104675019,

Abstract:
Source: CN204475670U The utility model relates to a concrete–filled steel tube column with a built–in pre–processing semicontinuous steel reinforcement cage. The steel tube column comprises a steel cylinder and a continuous steel reinforcement cage, wherein interrupted steel reinforcement cages are prefabricated in the steel cylinder; the steel cylinder with the interrupted steel reinforcement cages prefabricated inside is a whole consisting of the interrupted steel reinforcement cages, a giant steel cylinder and binding pieces; the interior of the giant steel cylinder is separated into a plurality of cavities by longitudinal vertical partition plates and transverse vertical partition plates; transverse division plates are arranged in each cavity at intervals along the height direction of each cavity; the interrupted steel reinforcement cages are positioned between the adjacent transverse division plates, and are connected with an inner wall of the giant steel cylinder to a whole through the binding pieces; the continuous steel reinforcement cage is arranged along the full length of the cavities; and holes allowing the continuous steel reinforcement cage to penetrate through are formed in the transverse division plates. The concrete–filled steel tube column solves the technical problems that the overlong giant concrete–filled steel tube column structure is low in compressive strength and poor in fire resistance, and the concrete–filled steel tube column can be widely applied to a super high–rise long–span structure.

0) US2012102863A – SOLOARMAR CONSTRUCTION ENGINEERING SYSTEM

51) Family number: 33546234 (US2012102863A) © PatBase

Title: SOLOARMAR CONSTRUCTION ENGINEERING SYSTEM

Priority: PA20050086310 20050421 WO2006CR00004 20060421

Family:

Publication number	Publication date	Application number	Application date
BRPI0612360 A2	20101103	BR2006PI12360	20060421
BRPI0612360 B1	20160119	BR2006PI12360	20060421
CR8348 A	20080926	CR20060008348	20060420
ES1068509 UA	20081101	ES20080001102U	20080526
ES1068509 Y1	20090201	ES20080001102U	20080526
MX2007013094 A1	20100324	MX20070013094	20060421
PA8631001 A1	20051223	PA20050086310	20050421
US2012102863 AA	20120503	US20060912303	20060421
US8955282 BB	20150217	US20060912303	20060421
WO06111106 A2	20061026	WO2006CR00004	20060421
WO06111106 A3	20061221	WO2006CR00004	20060421
WO06111106 B1	20070301	WO2006CR00004	20060421

Probable Assignee: SOLOARMAR PANAMA S A

Assignee(s):(std)**:** BARQUERO YAP LUIS ANDRES ; CHING MIXZA YAP ; LUIS ANDRES BARQUERO YAP ; YAP CHING MIXZA ; SOLOARMAR PANAMA S A

Assignee(s): SOLOARMAR PANAMA SA ; MIXZA YAP CHING

Inventor(s):(std)**:** BARQUERO YAP LUIS ANDRES ; CHING MIXZA YAP ; YAP CHING MIXZA

Inventor(s): MIXZA YAP CHING

Agent(s): WESTERMAN HATTORI DANIELS AND ADRIAN LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): E02D29/00 E04B1/02 E04B1/686 E04B2/00 E04B2/02 E04B2/16 E04B2/18 E04B2/24 E04B5/04 E04C1/00 E04C1/40 E04C2/52 (Advanced/Invention); E04B2/02 (Advanced/Non–invention); E02D29/00 E04B2/14 E04C1/00 (Core/Invention)

International class (IPC 1–7): E02D29/00

CPC: E04B2/16 E04B2/24 E04B2002/0245

European class: E04B2/16 E04B2/24 P04B2/02M3A

US class: 52/396.06 52/415 52/415P 52/562 52/585.1 52/606 52/745.09 52/745.090S

Classification Explorer

Cited documents: US919272 A, US7328535 BA, US6996945 BB, US6857240 BA, US6691485 BA, US6000186 A, US599864 A, US5921046 A, US5802792 A, US5771650 A, US5252017 A, US4454699 A, US4110949 A, US3966339 A, US3609926 A, US2243339 A, US2235646 A, JP8135044 A2, JP2000234405 A2, JP2000234404 A2, JP0135044, GB2320041 A1, EP0170840 A1, CA2158771 AA, CA1258592 A1,

Forward Citations: WO15132422, US9175469, US2016244368, US2016032586, US2013247497, ES2545162,

Abstract:
Source: US2012102863A The invention relates to the Soloarmar construction system comprising an original wall

construction method, in which the cavities in the blocks are precisely aligned in the vertical axis. According to the invention, the blocks are assembled using an inner engagement device such that resistant masonry can be produced quickly and specially adapted for clay or concrete blocks using specific industrial templates, machines, nozzles and dies designed by Soloarmar. The appearance and characteristics obtained are similar to those obtained with standard masonry techniques, but with the mixture only being used to lay the first course instead of between all of the blocks.

0) JP2012140824A – CONCRETE FILLED STEEL PIPE COLUMN

52) Family number: 51743112 (JP2012140824A) © PatBase

Title: CONCRETE FILLED STEEL PIPE COLUMN

Priority: JP20110000702 20110105

Family:

Publication number	Publication date	Application number	Application date
JP2012140824 A2	20120726	JP20110000702	20110105
JP5839800 B2	20160106	JP20110000702	20110105

Probable Assignee: TAKENAKA KOMUTEN CO

Assignee(s):(std)**:** TAKENAKA KOMUTEN CO

Assignee(s): TAKENAKA KOMUTEN CO LTD ; TAKENAKA CORP

Inventor(s):(std)**:** NAGAOKA TSUTOMU ; NISHIMURA TOSHIHIKO

International class(IPC 8–9)**:** E04B1/30 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: JP6431821 U, JP64031821 U1, JP64031821 U, JP64031821 U, JP63134026 U1, JP63134026 U, JP63134026 U, JP4062711 U1, JP2001181005 A2, JP2001181005,

Forward Citations: JP6025884, JP2016148201, CN105569268, CN104100040,

Abstract:
Source: JP2012140824A PROBLEM TO BE SOLVED: To provide a concrete filled steel pipe column having improved workability while inhibiting the local buckling of the side wall of a steel pipe.SOLUTION: Each side wall 12A of a steel pipe 12 is reinforced by a vertical reinforcing rib 20 disposed inside the steel pipe 12. The vertical reinforcing rib 20 is formed of a plate−like steel sheet, and disposed inside the steel pipe 12 with its longitudinal direction as the axial direction of the steel pipe 12. The vertical reinforcing rib 20 is disposed projecting from the side wall 12A of the steel pipe 12, with (the end face of) one end 20A in the cross direction abutting approximately perpendicular on the center in the cross direction of (the inner face of) the side wall 12A of the steel pipe 12 and the other end 20B in the cross direction directed inside the steel pipe 12. One end 20A (joint end) of the vertical reinforcing rib 20 is continuously welded to the side wall 12A of the steel pipe 12 in the longitudinal direction of the vertical reinforcing rib 20. Thus, out−of−plane rigidity is imparted to the side wall 12A of the steel pipe 12.

0) KR20150137180A – REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE ...

53) Family number: 61034201 (KR20150137180A) © PatBase

Title: REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE

Priority: KR20140064352 20140528

Family:

Publication number	Publication date	Application number	Application date
KR101577704 B1	20151217	KR20140064352	20140528
KR20150137180 A	20151209	KR20140064352	20140528

Probable Assignee: SAMSUNG EVERLAND INC

Assignee(s):(std)**:** SAMSUNG C AND T CORP ; SAMSUNG EVERLAND INC

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** KIM CHANG SOO ; KIM YOUNG RAE ; KO SEOK JIN ; KWON DOO HYUN ; LEE JEONG HA ; LIM YOUNG JUN ; OH KYUNG HWAN ; PARK DONG SOON ; SIM KYU KWAN ; WON JEONG HWAN

International class (IPC 8–9): E04B1/30 E04C3/34 E04C5/06 (Advanced/Invention)

CPC: E04C3/36 E04B1/185 E04C5/012 E04C5/0604

Classification Explorer

Cited documents: KR101457077 B1, KR101428539 B1,

Abstract:
Source: KR20150137180A The present invention provides an improved concrete–filled column comprising: an angular plate column (100) having an internal space (110) filled with concrete; a steel frame (200) installed in the internal space (110) in the longitudinal direction of the plate column (100); and a corner reinforcing member (300) formed in the corner of the plate column (100) to resist to the lateral pressure caused by concrete with which the internal space (110) is filled. The corner reinforcing member (300) is in contact with a first side (100a) and a second side (100b) forming a vertex (A) of the plate column (100), thereby forming a first contact point (B) in contact with the first side (100a) and a second contact point (C) in contact with the second side (100b), and the distance (D1) from the vertex (A) to the first contact point (B) is different from the distance (D2) from the vertex (A) to the second contact point (C). The present invention has an effect of ensuring the structural stability of a large–caliber concrete–filled column.

0) CN105133792A – STEEL REINFORCED CONCRETE CROSS–SHAPED COLUMN W...

54) Family number: 61045084 (CN105133792A) © PatBase

Title: STEEL REINFORCED CONCRETE CROSS–SHAPED COLUMN WITH HONEYCOMB–TYPE WEB AND CONSTRUCTION METHOD THEREOF

Priority: CN201510542880 20150828

Family:

Publication number	Publication date	Application number	Application date
CN105133792 A	20151209	CN201510542880	20150828

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** CAO PINGZHOU ; MAO FANSHEN ; WU KAI ; XU FANGYUAN ; ZHANG HENG

International class (IPC 8–9)**:** E04B1/98 E04C3/36 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, JP3066851 A2, CN2797485 Y, CN104234318 A, CN103850350 A, CN103216039 A, CN103015628 A, CN101302776 A,

Forward Citations: CN105544867,

Abstract:
Source: CN105133792A The invention discloses a steel reinforced concrete cross–shaped column with a honeycomb–type web and a construction method thereof. The steel reinforced concrete cross–shaped column with the honeycomb–type web comprises closed profiled steel plates, the honeycomb–type web and inside–filled concrete. The closed profiled steel plates form a hollow column body in a surrounding mode, the cross section of the hollow column body is in a cross shape, the section of the honeycomb–type web is in a cross shape, the honeycomb–type web comprises four web units, honeycomb–type through holes are formed in all the web units, and flange plates are welded to the ends of the web units. The honeycomb–type web is symmetrically arranged inside the hollow column body. According to the scheme, the honeycomb–type web does not affect working of a vibrator, the concrete can flow through the through holes in the web and is convenient to pour, the problems of pouring quality are reduced, and the bearing capacity of the concrete is remarkably improved. In addition, the steel reinforced concrete cross–shaped column can be prefabricated in a factory, formwork erecting and steel bar arranging are not needed in construction, and construction is rapid and convenient.

0) CN103556819A – CONSTRUCTION METHOD FOR RESERVING CONSTRUCTIONA...

55) Family number: 55738180 (CN103556819A) © PatBase

Title: CONSTRUCTION METHOD FOR RESERVING CONSTRUCTIONAL COLUMN HOLES IN BEAM PLATE

Priority: CN201310593262 20131123

Family:

Publication number	Publication date	Application number	Application date
CN103556819 A	20140205	CN201310593262	20131123
CN103556819 B	20151209	CN201310593262	20131123

Probable Assignee: CHINA CONSTRUCTION 4TH ENG BUREAU 6TH CO LTD

Assignee(s):(std)**:** CHINA CONSTRUCTION 4TH ENG BUREAU 6TH CO LTD ; CHINA CONSTRUCTION 4TH ENGINEERING BUREAU 6TH CO LTD

Assignee(s): CHINA CONSTRUCTION 4TH ENGINEERING BUREAU 6TH CO

Inventor(s):(std)**:** CHENG QUN ; LINGHU YAN ; SUN PENGCHENG ; WANG LI ; XU BO ; ZHANG JIAN ; ZHOU CHONG

International class (IPC 8–9): E04G15/00 E04G15/06 (Advanced/Invention)

Classification Explorer

Cited documents: EP1101883 A1, CN201620602 U, CN201574583 U, CN201460211 U, CN102121315 A,

Forward Citations: CN105155669, CN104831924,

Abstract:
Source: CN103556819A The invention provides a construction method for reserving constructional column holes in a beam plate so as to overcome defects of existing constructional column reinforcing steel bar embedding construction methods. The construction method comprises the steps as follows: a beam plate template frame used for casting the beam plate is spliced through construction templates; a slope–shaped steel plate base is placed in a position, where a constructional column is required to be arranged, within the beam plate template frame; four hole positioning rods are perpendicularly welded on the top surface of the slope–shaped steel plate base; surfaces of the slope–shaped steel plate base and the hole positioning rods are coated with a release agent; each hole positioning rod is sleeved with a PVC (polyvinyl chloride) bushing, a cavity of the beam plate template frame is filled with concrete slurry, and the concrete slurry is solidified to become the concrete beam plate; and the beam plate template frame, the PVC bushings, the slope–shaped steel plate base and the hole positioning rods are disassembled. The construction method has the advantages as follows: the method is simple in procedure, high in operability and low in construction difficulty, and the strength of the beam plate is not damaged, so that the construction cycle is shortened, manpower and material costs are saved, and the structure quality of a building is guaranteed.

0) WO15157835A1 – TOWER FOR GENERATING WIND POWER TOUR POUR LA G...

56) Family number: 60613914 (WO15157835A1) © PatBase

Title: TOWER FOR GENERATING WIND POWER

Priority: BR20141009219 20140415

Family:

Publication number	Publication date	Application number	Application date
BR102014009219 A2	20151208	BR20141009219	20140415
WO15157835 A1	20151022	WO2015BR00055	20150415

Probable Assignee: CARVALHO S A SA

Assignee(s):(std)**:** CEMIG GERACAO E TRANSMISSAO S A ; CARVALHO S A SA ; ROSAL EN S A ; VALLOUREC TUBOS DO BRASIL S A

Assignee(s): CARVALHO SA ; CEMIG GERACAO E TRANSMISSAO SA ; VALLOUREC TUBOS DO BRASIL SA ; ROSAL ENERGIA SA

Inventor(s):(std)**:** ALVES WANDERSON MENDES ; ARAUJO AFONSO HENRIQUE MASCARENHAS DE ; CARDOSO DE MELO PAULO HENRIQUE ; COSTA EMERSON CAMILO DA ; DA COSTA EMERSON CAMILO ; MASCARENHAS DE ARAUJO AFONSO HENRIQUE ; MAYOR IARA MAIA SOUTTO ; MELO PAULO HENRIQUE CARDOSO DE ; MENDES ALVES WANDERSON ; SOUTTO MAYOR IARA MAIA

Inventor(s): WANDERSON MENDES ALVES ; AFONSO HENRIQUE MASCARENHAS DE ARAUJO ; PAULO HENRIQUE CARDOSO DE MELO ; EMERSON CAMILO DA COSTA ; IARA MAIA SOUTTO MAYOR

Agent(s): AMIN SAMIA BATISTA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04C3/04 E04H12/10 E04H5/02 (Advanced/Invention)

CPC: E04C3/04 E04H5/02 E04H12/10

Classification Explorer

Cited documents: WO9955989 A1, WO13083802 A2, WO12042309 A1, US2011265419 AA, US2011133475 AA, US2009249707 AA, EP2444571 A1, EP2280138 A2,

DE102007036764 B3

BR9606177 A,

Abstract:
The present invention relates to a tower (1) for generating wind power, comprising at least three columns (3) extending from a base of the tower up to the upper end thereof, each column (3) comprising a plurality of interconnected tubular elements and a plurality of tubular elements mounted in the form of a trellis (4) between the columns (3) thereby forming the structure from the base to the upper end of the tower (1).

0) WO15166504A2 – CONSTRUCTIONS – INSTANT AND ECONOMICAL BY MECHA...

57) Family number: 60729109 (WO15166504A2) © PatBase

Title: CONSTRUCTIONS – INSTANT AND ECONOMICAL BY MECHANIZATION/ USE OF NEW JIGS AND FIXTURES–REQUIRING SHUTTERING/NO SHUTTERING AT ALL

Priority: WO2014IN00285 20140429

Family:

Publication number	Publication date	Application number	Application date
WO15166504 A2	20151105	WO2014IN00285	20140429

Probable Assignee: SURESH CHAWLA

Assignee(s):(std)**:** SURESH CHAWLA

Inventor(s):(std)**:** SURESH CHAWLA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04G21/00 (Advanced/Invention)

CPC: E04G21/185 E04G11/06 E04G13/02 E04B2/8658 E04G17/06

Classification Explorer

Abstract:
Source: WO15166504A2 [Source: Claim 1] 1. I claim Constructions– Instant and Economical by mechanization/ use of new jigs and fixtures– requiring shuttering/no shuttering at all characterized as technology which reduces time for each activity such activities as reinforcement binding, centering and shuttering, pouring cement concrete mix, fixing wall tiles, external cladding, doors, windows and services etc. by use of mechanization and new jigs and fixtures and various other means due to which the cost of labor component, supervision and other costs can be reduced which forms quite a big chunk for construction sector, whereby the inflation in costs of materials can also be taken care of, the reinforcement binding can be economized, made easy and fast such as by mechanization and introducing rings for columns and beams over central pole/ pipe, the rings can be welded over slip pipe pieces with spacers, which can be slipped over the central pipe/pole to build columns and beams in very short time, whereby the rings, spacers and slip pipe pieces can be build in work shops or factories as per the requirement of sizes and shapes using machines, jigs and fixture as can also be manufactured at very less cost and time due to economy of scales since a column or beam can have one single ring or multiple rings of different diameters and sizes in big sized– column or beam if there is such design requirement but since normally the columns and beams are rectangular, square or round, once the new systems become popular, the rings of various sizes can be available in stores– off the shelf, and the rings can have u shaped pieces called – holders, pre –welded/pre fixed to rings at appropriate locations as per requirement of structural designs to receive the reinforcement bars for tying to it as the process makes it easy for even casual labor under the supervision of site engineer to build column or beam since the pre–stressed concrete panels of least thickness possible for 3mxl.2m size or bigger or smaller sizes can be cut to sizes or made as per sizes of the columns and beams which can be fixed on the outer surfaces of rings, to act as exterior concrete surfaces cum shuttering itself, also the pre stressed concrete panels can be directly fixed on outer surfaces of rings or spacer bars and can be provided if required to provide cover to the rings of columns and beams alternatively, even shuttering made out of wooden boards or polycarbonate sheets or other kinds for columns and beams can also be bound after fixing spacers made out of steel bars welded on outer surfaces of rings for providing gap and cap over the rings, further, such shuttering made in modules or self serving pre–stressed concrete panels can be tied together by nut and bolts fixed on rings or by pipe spacers having another 5 longer pipe with grooves of smaller diameter slipped in to the pipe spacers, such inner pipes can be pierced through the shuttering boards or concrete panels for driving the wedges in to grooves provided in longer pipes to keep the shuttering boards/ pre stressed concrete panels in place tight to introduce cement concrete mixture, also, the reinforcement of walls can again be bound in short time if L0 internal infrastructure of pipes is created by placing vertical pipes with holes at appropriate locations where walls have to be built and horizontal pipes are welded or joined using plumbers to join horizontal pipes to vertical pipes at appropriate heights as per design requirements to form a grid of the center line of walls or civil structure, the horizontal pipes are further fixed to central pipes .5 or poles of vertical columns, the vertical pipes are in turn joined to central pipe /pole of beams, the binding of walls, columns and beams thus form center line of the total structure and an internal infrastructure of the building or civil structure, as once the center line shell is ready, slip pipes with holes having spacers as per width of the walls attached to it can be introduced over the :0 vertical pipes, also loose jointing systems which can also be used to join spacers to vertical pipes, wedges can be fixed in holes of slip pipe pieces and the vertical pipes to form internal infrastructure, pipe runners can also be fixed as

alternative at ends of spacers in horizontal form to provide extra support for pre−stressed concrete panels/ shuttering plates/ shuttering boards/Synthetic 5 sheets etc to rest on both sides of spacers/pipe runners to form boxes for introduction of cement concrete mix and such pre−stressed concrete panels/ shuttering boards etc can be held together by use of more spacers other than the spacers used in pipe pieces slipped over vertical pipes, not to mention that the extra spacers can be made out of rectangular, square or round pipes with 0 internal pipes of lesser diameter to be bigger in length than spacers to come out of holes provided/drilled in pre−stressed concrete panels/shuttering boards etc, the internal pipes can have horizontal grooves provided for incursion of wedges to hold tight and together the boards/ pre stressed concrete panels placed on both sides of central infrastructure, the same system of pipe spacer can be used 5 for columns, beams and other structures, the central infrastructure or pipe grid can have pre−designed reinforcement tied to it in center or on sides or welded mesh tied to it for reinforcement requirements for reinforced cement concrete (RCC) walls, even insulation boards etc can be fixed on one side or both sides of reinforcement, the external boards and internal boards can be fixed to central infrastructure in turns, the internal board/shuttering panels/ pre−stressed concrete panels having holes/ hold fasts can be fixed first with hooks / steel wires etc or magnets to receive all services fixed to its internal side facing internal pipe infrastructure as per the designs, to fix all services, the support of the space in between the boards/shuttering panels/ pre−stressed concrete panels and reinforcement bars or welded mesh can be taken for proper placement of services in required locations, the pre−stressed concrete panels can be cut at places where boxes or plumbing /sanitary items etc. have to be fixed, after all services are in place, the external boards/shuttering panels/ pre−stressed concrete panels can be fixed to internal infrastructure to tie both internal boards/shuttering panels/ pre−stressed concrete panels with external boards/shuttering panels/ pre−stressed concrete panels together using more spacer pipes having internal pipe of lesser diameter to pierce through boards/shuttering panels/ pre−stressed concrete panels and the wedges can be inserted in the grooves of longer pipes to hold internal and external panels together tightly, once the external and internal boards/shuttering panels/ pre− stressed concrete panels are fastened well, the cement concrete mix can be introduced from above to create unified structure which will bind pre−stressed concrete panels into the cement concrete itself and become unified RCC structure while the shuttering materials or boards etc can be removed by removing wedges from grooves, the pre−stressed concrete panels can have tiles/external cladding pre bound to it at the time of casting the pre−stressed concrete panels like stone slabs /tiles etc which can be placed in the moulds, clamps can be attached to stone slabs/tiles etc where casting process has to commence, cement and coarse sand/ fine sand mix can be laid over the stone slabs /tiles and allowed to dry before placing pre−stressed steel bars, wires over the stone slabs /tiles in a removable frame to introduce cement concrete mix of appropriate mix ratio over the dried cement sand mix placed over stone slabs/tile, once the concrete cement is set, the wires can be de−tensioned and outer frame removed for the panel to go for curing and once the slabs with pre fixed external/internal claddings are ready, the panels can be fixed to internal infrastructure in place of normal pre−stressed concrete panels where ever there is such requirement like the external panels can have pre− fixed external cladding on panels fixed on external sides of internal infrastructure of pipes and panels having pre fixed tiles can be placed for toilet or kitchen walls before introducing cement concrete mix from above to provide finished surfaces where ever required, the roof can also be self supported by placing pre−stressed concrete panels resting on horizontal supports and these horizontal supports rest on internal infrastructure of pipes or after casting of cement concrete walls and these horizontal supports can rest on holes provided at appropriate spacing's on top of walls, also these horizontal supports can not only rest on holes or internal infrastructure but extend beyond walls to become self supporting platform for carrying out outside work or exterior jobs of the building where once self supporting pre−stressed concrete panels are in position, services can be provided by cutting pre−stressed concrete panels at locations where concealed boxes or other items have to be fixed on roof and once services are in position, the reinforcement as per requirement is placed over the pre−stressed concrete panels to cast further portion of the roof as per the requirement of thickness of the roof, also, the roofs can be casted by use of tee sections /other sections of steel, placed at appropriate spacing's on vertical pipes of walls as per design requirements with rectangular /round bars welded to it on extruding side of tee and the grid so formed can be placed with flat side of tee on top and round bars/square bars at the bottom of tee section, such grid can be placed on the walls infrastructure/after walls are casted, the square or rectangular bars can have welded mesh with least spaces in between the wires of the welded mesh and these welded mesh can be tied or fixed by welding to round or square boards from bottom to receive the cement concrete mix for roofing, the spaces in closely built welded mesh can be filled first by cement mixture or by dry stone chips or by other methods including fixing plastic sheets/polythene sheets at bottom of welded mesh /above welded mesh. Cement concrete mix can be casted on self supporting steel grid with welded mesh to cover all the member after placing services, more reinforcement if required is placed on steel members at required locations to form the roof, all the steel members perform as reinforcement including tee section, round or square bars and the welded mesh etc, roofs can also be built by first pouring cement concrete mix in walls, once walls are ready in twelve hours or so, holes can be provided at top of walls while casting the walls for pipes and steel structure to extrude out of walls for external scaffolding and to rest shuttering on pipes or steel structure placed in between the holes in the walls at the top, usual reinforcement can be placed with services to pour cement concrete mix 5 and to wait till the roof is solid enough for pipes, steel structure and shuttering to be removed from top of walls of each floor while other activities carry on as usual, with doors and windows duly painted along with frames and all fittings can also be fixed to internal infrastructure while pouring cement concrete mix itself by welding steel sheet frames/ aluminum sheet frames/stone slabs of the 10 size of doors and windows with the width of the sheets exceeding the width of doors and windows frames but not more than the size of the walls to seal the area in between width of door /window frames and shuttering area, where cement concrete mix has to be introduced, if the width of walls is more than the width of door /window frames, stone slabs can also be fixed in between door L5 window frames and walls to be casted, the door/windows can be covered from both sides at the time of pouring of cement concrete mix for protection, the external cladding and tiles can also be fixed to internal infrastructure at required locations by forming frames out of angle or tee section placed at appropriate spacing's both ways having welded mesh of appropriate size, welded to frame, 10 the frame also has hold fasts for frames to get fixed to cement concrete mix and the frames so formed

can be placed in horizontal plane to place all the tiles/stone pieces as per design on the welded mesh, cement sand mixture can be pasted on the outer surfaces of tiles/stone slabs to create soft layer on tiles/stone slabs. Once all the tiles/ stone pieces are placed neck to neck, !5 another frame of same sizes and design can be placed on top of first frame, both frames can be held tight by nut bolts/screwing together from top and sides through extruded pieces with holes, duly welded to frames, the internal frame with tiles/stone pieces will get fixed permanently along with tiles after setting of cement at required location of the buildings, the tiles/stone pieces with soft layer so will act as shuttering for cement concrete mix, the external frames can be removed by unscrewing or removing nut bolts, the voids left be treated later by plaster etc, for footing foundations and raft foundations, modules of cubicle's in self supporting steel structures with rectangular top or square top with height as per the design required can be prebuilt in workshops with reinforcement bound 15 in place by welding or through U shaped pieces placed at appropriate locations as per the designs, the reinforcement bars can extrude in all directions in horizontal plane for raft foundations, the modules can be joined by nut bolts or wedges to form a flat foundation structure and the extruding bars can also be tied together, with the columns in steel structure having reinforcement prebuilt in it can be placed at appropriate locations as per the design and tied or welded to the flat surface with bent reinforcement bars in columns can also be tied at bottom of frames/reinforcement bars as per the requirements of the design, central pipes in footing of columns and columns of raft foundation can be provided with sockets at top to join the pipes of upper floors with pipes coming out of foundation columns to create center line of entire building, for rapid road constructions, frames of channels / other sections / flats of appropriate size in width can be manufactured as per contour of the road in modules with nut bolts etc extruding out of frames for binding together the modules in length and breadth, the frames can have single layer or multiple layers of reinforcement or reinforcement on sides only as per the structural design tied to/welded to it or extruding out of holes provided in the frames for expansion, the modules can be placed on the flat surface of earth created before laying the modules, the flat surface of ground can have compacted layer/ layers of boulders/ stone chips of bigger size, cement and coarse sand mix called PCC can be laid before modules are placed, the lower layer can also be built by placing frames in modules duly joined together using nut bolts etc and cement concrete mix introduced in lower layer as well using bigger stone chips in place of smaller stone chips used in upper layer, for quick constructions of finishing layer, once each module is placed, cement concrete mix can be introduced in the frame by manual labor or through the pumps mounted on trucks to create flat surface of road on top, once one module or multiple modules tied together with nut bolts etc are filled with the cement concrete mix, more modules can be joined to construct roads in fastest way, the frames will remain embedded in cement concrete mix after casting and act as shuttering while casting, for roads in hills, flat sections of steel can be used for sides of road to form the contour easily by bending the flats as per the site condition and welding the reinforcement right at the spot or at a little distance using portable welding sets with generators if electricity is not available to repeat the process of pouring cement concrete mix, for flyover, bridges and structures for elevated railway transport etc the columns along with foundation and top beam can be prebuilt in workshops using methodology of columns as described for columns of buildings and creating self supporting steel structure with prebuilt reinforcement as per design for foundation of column and top beam of column– all tied in single piece can be transported to site for placing in position, for shuttering pre–stressed hollow concrete modules of the size of columns can be built in work shops or pres–stressed Hume pipe pieces/modules can be introduced from above if circular columns have to be built, alternatively regular shuttering as is being used can also be fixed to cast cement concrete mix in installments' as per design requirements, beams of the flyover, bridges and other structures can have self supporting /self loading steel structures which are not only capable of taking the load of self structure but the cement concrete load and the pressure experienced during casting of cement concrete by pressure pumps, the steel structures can also have pre–stressed tendons already provided in the steel structure, spacer bars are also fixed on outer surfaces to fix shuttering on top of spacer bars, the spacer bars provide cover over the steel structure surfaces, the shuttering is fixed by using spacer pipes having smaller, longer pipes in spacer pipes and wedges as described above are driven in grooves, the complete structure is transported to site for loading the self supporting structure on columns, the self supporting steel structure can be built in single unit as per the length required between two columns or in modules to be joined at site to receive the cement concrete mix, for columns on pile caps and well cap foundations, the columns can be prebuilt with reinforcement pre– bound in self supporting steel structures which can be fixed by tying or by welding on pile caps, well caps or by other methods to build columns for flyover and bridges as described above, for dams similar exercise of creating self supporting steel structures with reinforcement prefixed in structures can be manufactured in modules which can be joined together with nut bolts or pipes with grooves to form mega structures to pour cement concrete mix after placing the shuttering as used in columns and beams etc, the civil structures can also be built without the requirement of shuttering at all by welding welded mesh or by binding welded mesh on outer surfaces of structures where solid shuttering is required. "The welded mesh thus can replace shuttering", the welded mesh can be welded or fixed on horizontal pipes/wall runners fixed to spacers of the internal infrastructures, the welded mesh can be manufactured with very little spaces in between the wires, after the welded mesh has been fixed in outer surfaces, the cement concrete mix can be introduced in the boxes formed by the welded mesh surrounding like the usual shuttering, the welded mesh can be covered by thin plastic sheets/polythene sheets etc from outside or by fixing plastic sheets/polythene sheets in side of welded mesh, for flyover as well the outer surfaces can have welded mesh surrounding to act as shuttering. Foundation steel structures can also have welded mesh surrounding to receive the cement concrete mix, reinforced cement concrete structures can also float to create floating ports or floating cities etc by placing empty drums made out of steel or plastics at appropriate locations in self supporting steel structure or stainless structure with steel reinforcement or stainless steel reinforcement to create floating R.C.C. structures after casting of cement concrete mix in self supporting structure having shuttering pre built or by fixing pre stressed concrete panels on external surfaces, new shuttering material can be created by fixing strong shuttering materials like polycarbonate sheets etc on steel frames or aluminum frames having welded mesh below the polycarbonate sheets as support, the frames can have better joining systems like extruding flats with grooves to insert wedges in grooves to join steel /aluminum frames together in horizontal plane and holes in frames to join shuttering panels on both sides of internal infrastructure by spacer pipes as explained or for normal shuttering as in practice, by

creation of central infrastructure right from footing foundations to raft foundations provided in self supporting steel structures with central pipes coming out of structures to facilitate the creation of central infrastructure of columns, beams and walls, will reduce dependence on labor factor, the processes will also reduce mistakes in identifying horizontal and vertical center line for upper floors without creating any structure design issues as central infrastructure is restricted to walls alone which may or may not be load bearing while retaining the design of columns and beams as it is in practice, the columns and beams will be created very fast by use of pre designed and pre manufactured components in factories, after fixing the pre stressed concrete panels of least thickness possible in inside of the central infrastructure pipes, placing of services will become easy as the panels can be cut easily to fix electric boxes, sanitary pipes etc as per design requirements, once services are in place all that is required is to introduce cement concrete mix after fixing external pre stressed panels which can have pre cladding of stone slabs/tiles etc to provide finished surface right from beginning, the tiles cladding of pre stressed concrete panels meant for toilets and kitchen etc will further reduce number of activities already in use in constructions, like total elimination of shuttering, plaster, removal of shuttering, waiting for roofs to dry etc.

58) Family number: 50438674 (US2013097961A) © PatBase

Title: SQUARE SHAPED LIGHTWEIGHT STEEL COMPONENT WITH REINFORCED MEMBERS

Priority: CN201010216616 20100630 WO2011CN75874 20110617

Family:

Publication number	Publication date	Application number	Application date
CN102312483 A	20120111	CN201010216616	20100630
CN102312483 B	20131225	CN201010216616	20100630
US2013097961 AA	20130425	US20110807179	20110617
US9151036 BB	20151006	US20110807179	20110617
WO12000391 A1	20120105	WO2011CN75874	20110617

Probable Assignee: HSIEH YING CHUN

Assignee(s):(std)**:** HSIEH YING CHUN ; HSIEH YINGCHUN ; XIE YINGJUN ; YINGJUN XIE

Inventor(s):(std)**:** HSIEH YING CHUN ; HSIEH YINGCHUN ; XIE YINGJUN ; YINGJUN XIE

Agent(s): MCHALE AND SLAVIN PA; BEIJING DINGJIADA IP FIRM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/18 E04B1/19 E04B1/24 E04B1/30 E04C3/07 E04C5/18 (Advanced/Invention); E04C3/04 (Advanced/Non–invention)

CPC: E04B1/185 E04B1/30 E04C3/07 E04C2003/0421 E04C2003/0465 E04C2003/0473

European class: E04C3/07 P04C3/04S1U P04C3/04S3S P04C3/04S3U

US class: 1/1 52/653.2

Classification Explorer

Cited documents: WO9730235 A1, US6971690 BB, US6802170 BB, US5992125 A, US5157883 A, US3890697 A, US3300940 A, US2731824 A, US2008041555 AA, US2005241261 AA, US2004907 A, US2004163356 AA, US2004045237 AA, US2003126827 AA, DE2701396 A1, CN202194250 U, CN202194250 A, CN201738444 U, CN20173844 A, CN201502135 U, CN201367675 Y, CN1702258 A,

Forward Citations: CN102900199,

Abstract:
Source: US2013097961A A square shaped lightweight steel component with reinforced members includes a main body structure (1) and reinforced members (2). The main body structure (1) is a square steel tube integrally molded by a steel plate with certain thickness. One side of the square steel tube is provided with an opening. Angular curled edges (5) are respectively set on two sides of the opening. The reinforced members (2) are fixedly connected with the side of the main body structure (1) having the opening and installed with an interval therebetween.

59) Family number: 60499474 (IN00890DE2014A) © PatBase

Title:	CONSTRCTION – INSTANT AND ECONOMICAL BY MECHANIZATION/USE OF NEW JIGS AND FIXTURES REQUIRING SHUTTERING/NO SHUTTERING AT ALL
Priority:	IN2014DE00890 20140328

Family:

Publication number	Publication date	Application number	Application date
IN00890DE2014 A	20151002	IN2014DE00890	20140328

Probable Assignee:	SURESH CHAWLA
Assignee(s):(std):	SURESH CHAWLA
Inventor(s):(std):	SURESH CHAWLA
International class (IPC 8–9):	B05B (Advanced/Invention); B05B (Subclass/Invention)

Classification Explorer

Abstract:
Source: IN00890DE2014A 1. This invention of 'Constructions–instant and economical by mechanization/ use of new jigs and fixtures– requiring siiuttering/no sliuttering at ail' relates to construction of civil structures– buildings, flyovers and bridges etc at lower cost and in shortest possible time frame with higher efficiency as compared to present systems of constructions. The reinforcement binding can be economized by introducing rings for columns and beams over central pole/pipe. The rings can be welded over slip pipe pieces which can be slipped over the pipes to build columns and beams in very short time. The rings can have U shaped pieces or spacers, pre –welded/pre fixed to rings at appropriate locations to receive the reinforcement bars for tying to it. The shuttering for columns can be bound after fixing spacers made out of steel bars welded on outer surfaces of rings for providing gap and cap over the rings. The shuttering made in modules can be tied together by nut and bolts fixed on rings or by pipe spacers having another pipe of smaller diameter slipped in to the spacers pipe of larger length with grooves. The inner pipes can be pierced through the shuttering boards for driving the wedges in to grooves to keep the shuttering boards tight to introduce cement concrete mixture. The reinforcement of walls can again be built in short time if vertical pipes with holes at appropriate heights are placed at appropriate locations. The horizontal pipes are fixed to vertical pipes at appropriate heights as per design requirements –to form a grid of the center line of walls or civil structure. The horizontal pipes are further fixed to central pole or pipe of vertical columns. The binding of walls and columns thus form center line of the structure and an internal infrastructure of the building or civil structure. Once the center line shell is ready, slip pipes with holes having spacers as per width of the walls – attached to it can be introduced over the vertical pipes. Wedges can be fixed in holes of slip pipe pieces and the vertical pipes to form internal infrastructure for shuttering boards to rest on the spacers at appropriate spacing to form boxes for introduction of cement concrete mix. The shuttering boards etc can be held together by use of more spacers other than the spacers used in pipe pieces. The same system of pipe spacer can be used for columns, beams and other structures. The central infrastructure or pipe grid can have pre–designed reinforcement tied to it in center or on sides or welded mesh tied to it for reinforcement requirements for reinforced cement concrete (RCC) walls. Even insulation boards etc can be fixed on one side or both sides of reinforcement. The external boards and internal boards can be fixed to central infrastructure in turns. The internal board can be fixed first with hooks / steel wires etc or magnets to receive all services fixed to its internal side facing internal pipe infrastructure as per the designs. To fix all services the support of the space in between the board and reinforcement bars or welded mesh can be taken for proper placement of services in required locations. The roof can be self supporting by use of tee sections /other sections of steel– placed at appropriate locations on vertical pipes of walls as per design requirements with rectangular /round bars welded to it on extruding side of tee. The grid so formed can be placed with flat side of tee on top and round bars/square bars at the bottom of T section. The grid can be placed on the walls infrastructure. The square or rectangular bars can have welded mesh with least spaces in between the wires of the welded mesh. The welded mesh can be fixed by welding etc. to round or square boards from bottom to receive the cement concrete mix for roofing. The spaces in closely built welded mesh can be filled first by cement mixture or m by other methods. Roofs can also be built by first pouring cement concrete mix in walls, once walls are ready in twelve hours or so, holes can be provided at top of walls while casting the walls for pipes and steel structure to extrude out of walls for external scaffolding and to rest shuttering on pipes or steel structure placed in between the holes in the walls at the top. Usual reinforcement can be placed with services for pouring cement concrete mix and to wait till the roof is solid enough for pipes, steel structure and shuttering to be removed from top of walls of each floor while other activities carry on as usual. Doors and windows duly painted with frames and all fittings can also be fixed to internal infrastructure while pouring cement concrete mix itself by welding steel sheet frames/ aluminum sheet frames of the size of doors and windows with the width of the sheets exceeding the width of doors and windows frames but not more than the size of the walls to seal the area in between width of door /window frames and shuttering area – where cement concrete mix has to be introduced. Stone slabs can also be fixed in between door window frames and walls to be casted. The external cladding and tiles can be fixed to internal infrastructure at required locations by forming frames out of angle or tee section placed at appropriate spacing's both ways having welded mesh of appropriate size –welded

to frame. The frame so formed can be placed in horizontal plane to place all the tiles/stone pieces as per design on the welded mesh. Once all the tiles/ stone pieces are placed neck to neck, another frame of same sizes and design can be placed on the first frame. Both frames can be held tight by nut bolts/screwing together from top and sides through extruded pieces, having holes– welded to frames. The internal frame with tiles/stone pieces can be fixed at required location of the buildings.The tiles/stone pieces can act as shuttering for cement concrete mix. The internal frame can also have hold fasts going inside the internal infrastructure. Once cement concrete is introduced the tiles/stone pieces in touch with the cement concrete mix get fixed permanently after 12 hours or so along with internal frame. After setting of cement, the external frame can be removed by unscrewing or removing nut bolts. For raft foundations, modules of cubicle's in structural steel with rectangular top or square top with height as per the design required can be prebuilt in work shops with reinforcement bound in place by welding or through u shaped pieces placed at appropriate locations as per the designs, the reinforcement bars can extrude in all directions in horizontal plane. The modules can be joined by nut bolts to form a flat foundation structure and the extruding bars can also be tied together, the columns in steel structure having reinforcement prebuilt in it can be placed and tied to the flat surface with bent reinforcement bars at bottom as per the requirements of the design. For rapid road constructions, frames of channels / other sections / flats of appropriate size in width can be manufactured as per contour of the road in modules with nut bolts etc extruding out of frames for binding together the modules in length and breadth. The frames can have single layer or multiple layers of reinforcement tied to it through holes provided in the frames for expansion or welded to frames as per the requirements of the design. The modules can be placed on the flat surface of earth created before laying the modules. Once each module is placed, cement concrete mix can be introduced in the frame by manual labor or through the pumps mounted on trucks to create flat surface of road on top. For roads in hills, flat sections of steel can be used for sides of road to form the contour easily by bending the flats as per the site condition and welding the reinforcement to repeat the process of pouring cement concrete mix. For flyover, bridges and other structures for elevated railway transport etc. the \< ORIGIN/I VV ' columns can be created using methodology orcolumns for buildings while beams of the flyover, bridges and other structures can have self supporting /self loading steel structures, created as per the design of the bridge or flyover in modules or in single piece with the reinforcement prefixed in the self supporting structure to receive the cement concrete mix. The self supporting structures can have shuttering used for walls or columns etc. For footings foundations, the foundations can be prebuilt in steel sections with reinforcement bound as per the design provided for columns for buildings. The footing structure can be welded or fixed to columns of the building for quick constructions. The civil structures can also be built without the requirement of shuttering at all by welding welded mesh or by binding welded mesh on outer surfaces of structures where solid shuttering is required. The welded mesh can be welded or fixed on horizontal pipes fixed to spacers of the internal infrastructures. The welded mesh can be manufactured with very little spaces in between the wires. After the welded mesh has been fixed in outer surfaces the cement concrete mix can be introduced in the boxes formed by the welded mesh surrounding like the usual shuttering. Floating ports and floating RCC structures can be built in water bodies by using self supporting steel structures having reinforcement duly bound In it along with empty drums with air tight– closed lids placed in the structure at appropriate locations depending upon the structural designs to receive cement concrete mixture while outside of waters and pushing the structures in to the water after cement sets in or the exercise can happen on barges in water itself. Floor tiles/stone slabs can also be fixed like wall tiles except that the modules of upper frames and lower frames containing tiles /stones slabs can be horizontal and frames containing floor tiles /stone slab frames can be laid on cement concrete mix pre–laid before lowering the frames. Segmented R.C.C. poles can be manufactured usin

0) CN104947802A – NODE FOR CONNECTING CONCRETE–FILLED STEEL TUBE ...

60) Family number: 60477997 (CN104947802A) © PatBase

Title: NODE FOR CONNECTING CONCRETE–FILLED STEEL TUBE COLUMN AND EXTERNAL WRAPPING U–SHAPED STEEL CONCRETE COMPOSITE BEAM

Priority: CN201510329959 20150615

Family:

Publication number	Publication date	Application number	Application date
CN104947802 A	20150930	CN201510329959	20150615

Probable Assignee: UNIV SHANDONG JIANZHU

Assignee(s):(std)**:** SHANDONG JIANZHU UNIV ; UNIV SHANDONG JIANZHU

Inventor(s):(std)**:** LIN YAN ; YANG RONGQIAN ; ZHOU XUEJUN

International class (IPC 8–9)**:** E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Cited documents: JP7158161 A2, JP11124909 A2, CN203742000 U, CN103967133 A,

Abstract:
Source: CN104947802A The invention provides a node for connecting a concrete–filled steel tube column and an external wrapping U–shaped steel concrete composite beam. The node facilitates the pouring of concrete in a steel tube, easily guarantees pouring quality of concrete in a node area, is favorable for welding operation and easily guarantees weld seam quality. An outer annular plate is welded to the outer side of the steel tube at the position of a U–shaped steel base plate, the two opposite ends inside the outer annular plate in the length direction of the composite beam are connected with the U–shaped steel base plate having undergone limb cutting through butt joint weld seams, the weld seams do not crack easily, the connecting strength is high, and the vibration resistance is good. Sleeves capable of being movably connected with the ends of a hogging moment steel rib are arranged at the two opposite ends inside the steel tube in the length direction of the composite beam respectively; and the sleeves are welded to an outer wall of the steel tube. The structural type can reduce the weakening of steel tube bearing capacity caused by hole opening in a side wall of the steel pipe, the welding workload is reduced, and the construction and assembly are facilitated. To effectively transmit a load, horizontal reinforcing plates are fixedly welded to the positions of a steel tube inner cavity corresponding to the sleeves.

0) NZ621503A – HOLLOW SECTION STRUCTURAL MEMBER

61) Family number: 57316261 (NZ621503A) © PatBase

Title: HOLLOW SECTION STRUCTURAL MEMBER

Priority: AU20130900566 20130220 AU20140200899 20140220

Family:

Publication number	Publication date	Application number	Application date
AU2014200899 AA	20140904	AU20140200899	20140220
NZ621503 A	20150925	NZ20140621503	20140220

Probable Assignee: NEW ZEALAND STEEL LTD

Assignee(s):(std)**:** NEW ZEALAND STEEL LTD

Inventor(s):(std)**:** CLEMENTS NICHOLAS ALEXANDER STEPHEN ; NICHOLAS ALEXANDER STEPHEN CLEMENTS

Agent(s): GRIFFITH HACK

International class (IPC 8–9)**:** E04B1/24 E04B1/30 E04C3/30 E04C3/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: NZ621503A A hollow section structural member 10 suitable to form an outer wall of a concrete–filled column in a framework of a multi–storey building, the hollow section structural member comprising two or more steel plates 12, 14 that form different portions of the hollow section structural member, at least one of the steel plates being folded and with the steel plates being welded together and forming the hollow section structural member, and connectors fastened to a surface of one or more of the steel plates, and with at least one of the steel plates having one or more openings for (a) receiving a beam, (b) venting vapour from internally of the hollow section structural member, or (c) enabling drainage of water from internally of the member.

0) US2010024332A – STRUCTURAL ELEMENT AND METHODS OF USE THEREOF

62) Family number: 40838886 (US2010024332A) © PatBase

Title: STRUCTURAL ELEMENT AND METHODS OF USE THEREOF

Priority: AU20060902631 20060517 AU20060902631P 20060517 WO2007AU00651 20070516 AU20070250534 20070516 AU20120247042 20121108

Family:

Publication number	Publication date	Application number	Application date
AU2007250534 AA	20071122	AU20070250534	20070516
AU2012247042 AA	20121129	AU20120247042	20121108
AU2012247042 BB	20150514	AU20120247042	20121108
AU2012247042 CA	20150917	AU20120247042	20121108
CA2652410 AA	20081117	CA20072652410	20070516
EP2021555 A1	20090211	EP20070718897	20070516
EP2021555 A4	20120118	EP20070718897	20070516
IN05153KN2008 A	20090327	IN2008KN05153	20081217
KR20090013830 A	20090205	KR20087030773	20081217
RU2008149771 A	20100627	RU20080149771	20070516
RU2418917 C2	20110520	RU20080149771	20070516
US2010024332 AA	20100204	US20070301002	20070516
WO07131284 A1	20071122	WO2007AU00651	20070516

Probable Assignee: ASSOCIATED VALAIRE PTY LTD

Assignee(s):(std)**:** ASSOCIATED VALAIRE PTY LTD ; ASSOSHIAJTET VALAJRE PTI LTD ; VALAIRE TREVOR

Inventor(s):(std)**:** VALAIRE TREVOR ; VALAJRE TREVOR

Inventor(s): TREVOR VALAIRE

Agent(s): WALSH AND ASSOCIATES; CASSAN MACLEAN; JEHAN ROBERT; SALTAMAR INNOVATIONS

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/16 E04B5/04 E04B5/16 E04B5/17 E04C3/20 (Advanced/Invention); E04B5/16 E04B5/17 E04C3/20 (Advanced/Non–invention); E04B1/16 E04B5/04 E04B5/16 E04B5/17 E04C3/20 (Core/Invention)

International class (IPC 1–7): E04B5/17 E04C3/20

CPC: E04B5/38 E04B5/43

European class: E04B5/38 E04B5/43

US class: 52/250 52/250S 52/251 52/251S 52/252 52/252P 52/263 52/263S 52/602 52/602S

Classification Explorer

Cited documents: WO9606994 A1, WO0188297 A1, WO0007016 A1, US867251 A, US7810293 BB, US754783 A, US6817150 BA, US6631599 BA, US6578343 BA, US6272749 BA, US6094878 A, US505659 A, US4630414 A, US4120131 A, US3967426 A, US3956864 A, US3496691 A, US2579050 A, US2270114 A, US2017832 A, US2009049778 AA, US2008313990 AA, US2001045071 AA, US1792491 A, US1768181 A, US1508050 A, US1345156 A, US1093653 A, JP6322923 A2, DE538424 A, DE2403364 A1, DE2225344 A1,

Forward Citations: USD622867, USD622866, US8549805, US2011192108, RU2495204, KR101370930, KR101285487, KR101012321, FR2973407, CN103572874, CN103541478,

CN103541478, CN102312506, CN102312498,

Abstract:
Source: US2010024332A A pre−formed structural concrete element for use in the formation of a composite concrete floor of a building or the like, the element comprising: a generally planar base portion having opposing faces; a series of generally parallel spaced apart formations extending from one said faces of the base portion each defining along with an adjacent formation a void space therebetween and wherein the formations terminate in a plateau and have at least a narrow portion and a wide portion between the plateau and the one said faces of the base portion.

0) US2015259125A – MODULAR ELEMENT FOR STORAGE BASIN CONSTRUCTION,...

63) Family number: 55894081 (US2015259125A) © PatBase

Title: MODULAR ELEMENT FOR STORAGE BASIN CONSTRUCTION, SUPPORTING STRUCTURE, METHOD OF CONSTRUCTION THEREOF

Priority: RO20120000568 20120730 WO2013RO00013 20130724

Family:

Publication number	Publication date	Application number	Application date
EP2893098 A2	20150715	EP20130843054	20130724
RO129241 A2	20140228	RO20120000568	20120730
US2015259125 AA	20150917	US20130418233	20130724
WO14084748 A2	20140605	WO2013RO00013	20130724
WO14084748 A3	20150226	WO2013RO00013	20130724
WO14084748 A4	20150402	WO2013RO00013	20130724

Probable Assignee: BREAZ LAURENTIU DUMITRU

Assignee(s):(std)**:** BREAZ LAURENTIU DUMITRU

Inventor(s):(std)**:** BREAZ LAURENTIU DUMITRU

Agent(s): CIUDA BERIVOE ANCA; TODIRICA NATALIA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B65D81/18 B65D81/38 B65D90/02 E04B2/02 E04B2/14 E04B2/18 E04B2/22 E04B2/26 E04B2/32 E04B2/36 E04C1/41 E04H7/18 (Advanced/Invention)

CPC: E04B2/22 E04B2/26 E04B2/32 E04B2/36 E04B2002/0221 E04B2002/0265 E04H7/18 B65D90/024 B65D90/028 B65D81/3825 B65D81/18 E04B2/18 Y10T29/4998

US class: 220/592.2 220/592.22 29/527.1

Classification Explorer

Cited documents: WO12008864 A1, WO09061227 A2, WO07081233 A2, US6691485 BA, US3693307 A, US2008250736 AA, US2005011899 AA, US2004000114 AA, US2003029118 AA, US2002148187 AA, US2002017070 AA, GB1170103 A, FR2533956 A1, FR2343104 A1, DE7808241 U, DE2156006 A1,

Forward Citations: WO16040694,

Abstract:
Source: US2015259125A The invention relates to modular elements for building a storage basin, to a network obtained by assembling a plurality of modular elements, to a supporting structure, to a storage basin and to a process for obtaining a storage basin. The modular element according to the invention is provided in the interior with a network element constituted by main half joints (10), secondary half joints (11) and tertiary half joints (10), vertical channels (8,15), oblique channels (9), compartments (18), and is provided with joint elements (16,17). The network comprises horizontal annular channels and main, secondary and tertiary joints connected by vertical and oblique channels. The storage basin comprises a supporting structure at the interior of an insulating structure obtained by assembling the modular elements. The process for obtaining a storage basin comprises the assemblage of the modular elements and casting the hardening material in the network obtained by assembling the modular elements, forming the supporting structure.

0) CN104912206A – SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUM...

64) Family number: 60363643 (CN104912206A) © PatBase

Title: SPECIAL–SHAPED CONCRETE FILLED STEEL TUBE COLUMN–I–SHAPED STEAL BEAM FRAMEWORK NODE

Priority: CN201510288317 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104912206 A	20150916	CN201510288317	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** LIU JIEPENG ; LIU JINGCHEN ; XU CHUANGZE ; YANG YUANLONG ; ZHOU XUHONG

International class (IPC 8–9): E04B1/58 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20100127902 A, CN202544241 U, CN202139694 U, CN201433512 Y, CN103541512 A,

Abstract:
Source: CN104912206A The invention discloses a special–shaped concrete filled steel tube column–I–shaped steal beam framework node. The invention aims at solving the problems of strict anti–seismic design requirement and poor anti–seismic performance of a conventional reinforced concrete special–shaped column framework node, improving design indexes of the maximum use height and the column shaft compression ratio of a special–shaped column structure house and further promoting the use of the special–shaped column structure in a high–fortification–intensity region, and provides the special–shaped concrete filled steel tube column–I–shaped steal beam framework node. In order to reduce the relatively high steel consumption of the special–shaped concrete filled steel tube column and framework node and solve the local buckling problem of a column steel tube and a node steel plate, construction measures of installing pulling steel bar reinforcing ribs inside a special–shaped steel tube and installing vertical rib plates in beam column connecting positions are used; the constraint effect of the special–shaped steel tube on the concrete is improved; the bearing capability of a special–shaped concrete filled steel tube is further improved; meanwhile, the capability of the node for transmitting the internal force of the beam post is improved; and the anti–seismic capability of the special–shaped column framework node is further improved.

0) CN204645314U – MULTICAVITY BODY RECTANGLE OUTSOURCING STEEL SH...

65) Family number: 59913438 (CN204645314U) © PatBase

Title: MULTICAVITY BODY RECTANGLE OUTSOURCING STEEL SHEET SHEAR WALL

Priority: CN201510203426 20150427 CN201520257574U 20150427

Family:

Publication number	Publication date	Application number	Application date
CN104790559 A	20150722	CN201510203426	20150427
CN204645314 U	20150916	CN201520257574U	20150427

Probable Assignee: CHINA NORTHEAST ARCHITECTURAL DESIGN AND RES INST CO LTD

Assignee(s):(std)**:** CHINA NORTHEAST ARCHITECTURAL DESIGN AND RES INST CO LTD ; CHINA STATE CONSTRUCTION CO ; CHINA STATE CONSTRUCTION ENGINEERING CORP LTD

Assignee(s): CHINA NORTHEAST ARCHITECTURAL DESIGN AND RESEARCHINSTITUTE CO

Inventor(s):(std)**:** CHEN PENG ; CHEN YONG

International class (IPC 8–9): E04B2/56 (Advanced/Invention)

Classification Explorer

Cited documents: JP2014062379 A2, CN204645314 U, CN1959027 A, CN103074951 A,

Forward Citations: CN106013607, CN105781364, CN104790559,

Abstract:
Source: CN204645314U (B,) multicavity body rectangle outsourcing steel sheet shear wall, lower rib board, the floor roof beam that corresponds position department tip cavity by the first outsourcing steel sheet along the wall body thickness orientation, multicavity body rectangle outsourcing steel sheet shear wall's tip floor, cant chisei, multicavity body rectangle outsourcing steel sheet shear wall's middle floor, concrete, the floor roof beam of pouring corresponds position department tip cavity along wall body length direction's second outsourcing steel sheet, the cavity in last floor, floor roof beam correspond the position, go up the hole of reserving concreting on floor and the lower rib board, upward floor and lower rib board and the first outsourcing steel sheet and second outsourcing steel sheet or tip floor are connected on the bight air vent hole of reservation and are formed. The utility model discloses set the shear wall to the multicavity body, concreting in the cavity is equivalent to and is in the same place a plurality of rectangular concrete –filled steel tubular column (CFST) support connnections that outsourcing steel sheet and floor can be made in the mill, and the construction is simple, and the without template is energy –concerving and environment –protective, has the advantage of ordinary rectangle reinforced concrete wall and built –in steel sheet shear wall simultaneously. (B,)

66) Family number: 60366680 (CN104912196A) © PatBase

Title: CONNECTION JOINT OF CONCRETE FILLED STEEL TUBULAR COLUMN AND ENCLOSED U–SHAPED STEEL CONCRETE COMPOSITE BEAM

Priority: CN201510329603 20150615

Family:

Publication number	Publication date	Application number	Application date
CN104912196 A	20150916	CN201510329603	20150615

Probable Assignee: UNIV SHANDONG JIANZHU

Assignee(s):(std)**:** SHANDONG JIANZHU UNIV ; UNIV SHANDONG JIANZHU

Inventor(s):(std)**:** JIANG WEI ; LIN YAN ; ZHOU XUEJUN

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2003343008 A2, CN203742000 U, CN203145194 U, CN103161224 A, CN102561530 A,

Forward Citations: CN105569191,

Abstract:
Source: CN104912196A The invention provides a connection joint of a concrete filled steel tubular column and enclosed U–shaped steel concrete composite beam; in order to save materials and solve the problem that since a connection plate at the connection part of a composite beam bottom plate and a steel pipe outwards extends, an indoor corner has a convex angle to influence the beautiful sense, an inner partition plate is arranged at a position corresponding to a U–shaped steel bottom plate in the steel pipe, and the periphery of the inner partition plate is welded with the inner wall of the steel pipe. Sleeves which are movably connected with the end parts of hogging moment reinforcing steel bars are correspondingly arranged at two relative ends in the steel pipe along the length direction of the composite beam respectively; and the sleeves are welded with the outer wall of the steel pipe. The joint is capable of relieving the condition that the bearing capacity of the steel pipe is weakened due to hole forming in the side wall of the steel pipe; the welding workload is reduced; construction is facilitated; and assembly is realized. In order to effectively transmit a load, a horizontal stiffening plate is fixedly welded at positions corresponding to the sleeves in an inner cavity of the steel pipe, and the welding workload in field is reduced; a U–shaped steel side plate is connected with the wall of the steel pipe by adopting high–strength bolts through connection plates; the connection plates are connected with the wall of the steel pipe by angle welding; and welding is completed in a factory.

0) BRPI1101265A – PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTEN...

67) Family number: 60685487 (BRPI1101265A) © PatBase

Title: PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTENCAO DE PECAS E DE ESTRUTURAS PRE–FABRICADAS MISTAS E SISTEMA DE ESTRUTURA PRE–FABRICADA MISTA DE OBRAS DE CONSTRUCAO CIVIL PARTS PRE–MANUFACTURED MIXED, PARTS OF OBTAINING PROCESSES AND STRUCTURAL PRE–MANUFACTURED AND MIXED SYSTEM STRUCTURE PRE–MADE MIXED CIVIL CONSTRUCTION WORKS (Machine translation)

Priority: BR2011PI01265 20110304

Family:

Publication number	Publication date	Application number	Application date
BRPI1101265 A2	20150908	BR2011PI01265	20110304

Probable Assignee: VASCONCELLOS ALEXANDRE LUIZ

Assignee(s):(std)**:** VASCONCELLOS ALEXANDRE LUIZ

Assignee(s): ALEXANDRE LUIZ VASCONCELLOS

Inventor(s):(std)**:** VASCONCELLOS ALEXANDRE LUIZ

Inventor(s): ALEXANDRE LUIZ VASCONCELLOS

International class (IPC 8–9): E04C3/293 E04C3/34 (Advanced/Invention)

CPC: E04C3/293 E04C3/34

Classification Explorer

Abstract:
Source: BRPI1101265A 1 Resumo "PECAS PRE–FABRICADAS MISTAS, PROCESSOS DE OBTENCAO DE PECAS E DE ESTRUTURAS PRE–FABRICADAS MISTAS E SIS– TEMA DE ESTRUTURA PRE–FABRICADA MISTA DE OBRAS DE 5 CONSTRUCAO CIVIL" O presente resumo refere–se a uma patente de in– vencao para pecas pre–fabricadas mistas, processos de obtencao de pecas e de estruturas pre–fabricadas mistas e sistema de estrutura pre–fabricada mis– ta, pertencentes ao campo da engenharia civil; ditas pecas compreendendo 10 principalmente colunas (101) ou vigas (102) e compostas, essencialmente: _poLper and l(is)_deco,(10).laminado(s).ou_dobrado(s),au_tubular(es) ou soL dado(s); por armacao(oes) de vergalhoes der aco (30) montada(s) enrespa– co(s) intemo(s) do(s) perfil(is) de aco (10); e por concreto estrutural (50), que enche o(s) espaco(s) intemo(s) do(s) perfil(is) de aco (10), recobre a(s) 15 armacao(oes) de vergalhoes de aco (30) e forma ou nao capa(s) de concreto (51) externas) a peca (1), todos arranjados em perfeita interacao, para tra– balharem como uma so peca, na composicao da estrutura (100). 1 summary "PARTS PRE–MANUFACTURED MIXED, PARTS OF OBTAINING PROCESSES AND STRUCTURAL PRE–MANUFACTURED AND MIXED system STRUCTURE PRE–MADE MIXED CIVIL 5 CONSTRUCTION WORKS" This summary refers to a patent in – Convention for mixed pre–fabricated parts, cic processes of parts and composite pre–fabricated structures and pre–fabricated structure mis– ta system, belonging to the field of civil engineering; said parts comprising mainly 10 columns (101) or beams (102) and consisting essentially: _poLper and l (s) _deco, (10).laminado (s).ou_dobrado (s), au_tubular (s) or sun given (s); By armacao (oes) steel rebar der (30) mounted (s) enrespa– co (s) intemal (s) (s) profile (s) of action (10); and structural concrete (50), stuffing (s) space (s) intemal (s) (s) profile (s) of action (10), covers the (s) 15 armacao (oes) of steel square bars (30) and forms or not hood (s) concrete (51) outside) the piece (1), all arranged in perfect interaction for treat– balharem as one piece, in the composition of the structure (100).

0) CN104863271A – CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CO...

68) Family number: 60198362 (CN104863271A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN–REINFORCED CONCRETE BEAM JOINT CONNECTION METHOD

Priority: CN201510288472 20150529

Family:

Publication number	Publication date	Application number	Application date
CN104863271 A	20150826	CN201510288472	20150529

Probable Assignee: UNIV CHONGQING

Assignee(s):(std)**:** CHONGQING UNIV ; UNIV CHONGQING

Inventor(s):(std)**:** GU JUN ; LIU JIEPENG ; YU YU

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP4696843 B2, JP2006144427 A2, CN203866976 U, CN203640061 U, CN201507030 U, CN104499575 A, CN103821235 A,

Abstract:
Source: CN104863271A The invention belongs to the field of building structures, and particularly relates to a concrete–filled steel tube column–reinforced concrete beam joint connection method. The method is a novel connection method aiming to solve the problems that a connection joint of a concrete–filled steel tube column and a reinforced concrete beam is large in welding workload and large in construction operation difficulty. The method is characterized in that an upper flange plate, a lower flange plate, a vertical plate, a plurality of longitudinal ribs, a plurality of sleeves and a circular steel pipe are included and has the advantages that the vertical plate is narrow, the beam end rib drawing arrangement is not affected by the vertical plate; the tail ends of reinforcing steel bars are provided with the sleeves, the length of the lap joint segment is decreased, the length of the upper flange plate and the lower flange plate can be decreased, conveying is facilitated, and steel can be saved; connection among the upper flange plate, the lower flange plate, the vertical plate and column type steel flange is finished in a factory, the construction stage is free of welding work, and construction is fast and convenient to conduct.

0) WO13020436A1 – CENTRAL PYLON FOR VERTICAL AXIS WIND TURBINE AN...

69) Family number: 50611235 (WO13020436A1) © PatBase

Title: CENTRAL PYLON FOR VERTICAL AXIS WIND TURBINE AND CONSTRUCTION METHOD THEREOF

Priority: CN201110229267 20110811 CN201110313027 20111014 CN201110313095 20111014 CN201120395850U 20111014

Family:

Publication number	Publication date	Application number	Application date
CN102338043 A	20120201	CN201110313095	20111014
CN102338043 B	20140507	CN201110313095	20111014
CN102400588 A	20120404	CN201110313027	20111014
CN102400588 B	20150819	CN201110313027	20111014
CN202348569 U	20120725	CN201120395850U	20111014
WO13020436 A1	20130214	WO2012CN78424	20120710
WO13053251 A1	20130418	WO2012CN78404	20120710

Probable Assignee: DENG YUNHE

Assignee(s):(std)**:** DENG YUNHE ; YUNHE DENG

Inventor(s):(std)**:** DENG YUNHE ; YUNHE DENG

Agent(s): GUANGZHOU ZHONGJUNXIONGJIE INTELLECTUAL PROPERTY AGENCY CO LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B66C23/18 E04G21/00 E04H12/12 F03D11/00 F03D11/02 F03D11/04 F03D3/00 F03D3/02 F03D3/06 F03D7/06 F03D9/00 (Advanced/Invention); E04G21/00 (Advanced/Non–invention)

CPC: Y02E10/74 F03D3/005 Y02E10/728 F03D13/20 F03D3/02 F03D15/00

Classification Explorer

Cited documents: WO09030069 A1, US2010233919 AA, JP2004353637 A2, GB2471272 A1, EP1873331 A2, CN2931679 Y, CN202348590 U, CN202348569 U, CN202165212 U, CN202157907 U, CN201448192 U, CN102425529 A, CN102400588 A, CN102392795 A, CN102338043 A, CN101858316 A, CN101629549 A, CN101550918 A, CN101545452 A, CN101526069 A, CN101514677 A, CN101280766 A, CH668623, AT32180 E, AT32180 B, AT32180,

Forward Citations: WO14002118, WO13189104, WO13060166, WO13053251, WO13020436, CN103511198, CN103511198, CN103511179, CN103511179, CN103225441, CN102839819, CN102839819, CN102705170, CN102705170, CN102425529, CN102338043, CN102338043,

Abstract:
Disclosed are a central pylon for a vertical axis wind turbine and a construction method thereof, wherein the central pylon (1) is of a steel reinforced concrete structure with a channel (12) provided in the centre of the central pylon (1) extending from the base to the top thereof, the central pylon (1) is provided with two or more mounting platforms (2) encircling the central pylon (1) for mounting electric generators (5), and the mounting platforms (2) are constructed integrally with the central pylon (1) by cement casting. The construction steps thereof are as follows: laying the foundations of the central pylon (1); constructing an inner formwork and an outer formwork of the central pylon (1) on the foundations, wherein a pouring cavity is formed between the inner and outer formworks, a steel member (3) is embedded into the pouring cavity, with the inner formwork being of a tubular form, and the outer formwork being provided with two or more circular projecting cavities for forming the mounting platforms (2) that encircle the central pylon (1) and are used for mounting the electric generators (5), and the circular projecting cavities and the pouring cavity are in communication with each other; and pouring concrete between the inner and outer formworks. Power generating sets can be arranged on the mounting platforms, with each generating set and a wind wheel (4) forming an independent power generating unit, and by providing a plurality of power generating units on one central pylon, the overall electricity generation power of a vertical axis wind turbine is increased.

0) JP2015134984A – STRUCTURE AND METHOD FOR JOINING REINFORCED CON...

70) Family number: 60101259 (JP2015134984A) © PatBase

Title: STRUCTURE AND METHOD FOR JOINING REINFORCED CONCRETE BEAM AND REINFORCED CONCRETE–FILLED STEEL PIPE COLUMN TOGETHER

Priority: JP20140005714 20140116

Family:

Publication number	Publication date	Application number	Application date
JP2015134984 A2	20150727	JP20140005714	20140116

Probable Assignee: OHBAYASHI CORP

Assignee(s):(std)**:** OHBAYASHI CORP

Inventor(s):(std)**:** NAGAYA KEIICHI ; NISHIMURA KATSUHISA ; YAMAGUCHI ATSUHIRO

Agent(s): ISSHIKI AND CO

International class (IPC 8–9): E04B1/21 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: JP2015134984A PROBLEM TO BE SOLVED: To provide a structure and a method, which are excellent in workability on a job site when a reinforced concrete beam is joined to a steel pipe concrete column and which can secure strength of anchorage between a beam main reinforcement and a reinforced concrete column.SOLUTION: In a structure for joining a reinforced concrete beam 10 and a concrete–filled steel pipe column 20 together, an end of a beam main reinforcement 12 is inserted into a square steel pipe 22 of the concrete–filled steel pipe column 20; a screw part 32 is provided at an end of the beam main reinforcement 12; and an anchor plate 36 screwed to the screw part 32 is embedded in concrete infilled into the square steel pipe 22.

0) CN204456458U – CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL T...

71) Family number: 59729340 (CN204456458U) © PatBase

Title: CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL TUBULAR COLUMN AND H–TYPE STEEL GIRDERS

Priority: CN201520101680U 20150212

Family:

Publication number	Publication date	Application number	Application date
CN204456458 U	20150708	CN201520101680U	20150212

Probable Assignee: JIANGSU HUAJIAN CONSTRUCTION CO LTD

Assignee(s):(std)**:** JIANGSU HUAJIAN CONSTRUCTION CO LTD

Assignee(s): CONSTRUCTION CONSTRUCTION CO LTD JIANGSU PROVINCE CHINA ; JIANGSU HUAJIAN CONSTRUCTION CO

Inventor(s):(std)**:** CHEN YIJIAN ; JIANG ZHENGWU ; SHI GAOCHENG ; WU BIQIAO ; ZHOU QITAI

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204456458U The utility model discloses a connecting structure of a concrete–filled steel tubular column and H–type steel girders. The connecting structure of the concrete–filled steel tubular column and the H–type steel girders comprises a steel tube filled with concrete, a reinforcing ring welded to the steel tube in a sleeving mode and the H–type steel girders connected with the reinforcing ring in a welded mode, wherein the reinforcing ring comprises a ring web, the H–type steel girders comprise girder webs, the connecting structure of the concrete–filled steel tubular column and the H–type steel girders further comprises vertical connecting plates connected with the ring web through bolts and the girder webs through bolts respectively, and a transverse reinforcing rib is arranged on the surface of each vertical connecting plate. The connecting structure of the concrete–filled steel tubular column and the H–type steel girders improves the reliability and the stability of a connection point structure and reduces the weakening due to factors such as welding quality and welding residual stress on the connection point bearing capacity.

0) US2009173037A – PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY ...

72) Family number: 43489452 (US2009173037A) © PatBase

Title: PREFABRICATED BUILDING COMPONENTS AND ASSEMBLY EQUIPMENTS

Priority: CA20082642047 20081020 CA20082765207 20081020 US20080148051 20080415 US20080971018 20080108 US20080248051 20081009 US20090248051 20091009 US20080811199 20081017 US20080971018 20080107 US20080148051 20081009 WO2008CA01809 20081017

Family:

Publication number	Publication date	Application number	Application date
AU2008346725 AA	20090716	AU20080346725	20081017
BRPI0819947 A2	20150616	BR2008PI19947	20081017
CA2642047 AA	20090707	CA20082642047	20081020
CA2642047 C	20120626	CA20082642047	20081020
CA2765207 AA	20090707	CA20082765207	20081020
CN101910530 A	20101208	CN200880124304	20081017
EP2240652 A1	20101020	EP20080870040	20081017
EP2240652 A4	20140611	EP20080870040	20081017
IL206699 A0	20101230	IL20080206699	20081017
IN01385MN2010 A	20101112	IN2010MN01385	20100629
JP2011508837 T2	20110317	JP20100540994T	20081017
JP5336514 B2	20131106	JP20100540994T	20081017
KR20110016853 A	20110218	KR20107013188	20081017
MX2010007574 A1	20101110	MX20100007574	20081017
NZ586584 A	20130531	NZ20080586584	20081017
US2009173037 AA	20090709	US20080248051	20081009
US2010281784 AA	20101111	US20080811199	20081017
US2011120049 AA	20110526	US20080971018	20080108
WO09086617 A1	20090716	WO2008CA01809	20081017

Probable Assignee: LEO ANO

Assignee(s):(std)**:** ANO LEO ; LEO ANO

Inventor(s):(std)**:** ANO LEO ; LEO ANO

Agent(s): SPRUSON AND FERGUSON; ADE AND CO INC; THOMSON NEIL DAVID; ANO LEO; JEROME D JACKSON JACKSON PATENT LAW OFFICE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/18 E04B1/343 E04B1/348 E04B1/61 E04B1/62 E04B1/66 E04B1/70 E04B1/74 E04B1/76 E04B1/80 E04C2/20 E04C2/24 E04C2/26 E04C2/30 E04C2/38 E04C2/52 E04C3/02 E04C3/29 E04D13/08 E04D13/18 E04G E04G21/00 E04H1/00 E06B3/66 F24F5/00 (Advanced/Invention);
E04B1/00 E04B1/18 E04B1/61 E04B1/62 E04B1/66 E04C2/10 E04C2/30 E04C2/38 E04C3/29 E04G21/00 (Core/Invention);
E04G (Subclass/Invention)

International class (IPC 1–7): E04B1/18 E04B1/62 E04C2/30 E04G21/00

CPC: F24F2005/0078 E04B1/74 E04B1/80 E04B1/0023 E04B1/30 E04B1/803 E04B2/7412 E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/1625 E04D13/17 E04D2013/0893 E06B3/6612 E06B3/6722 F24F5/0075 F24F13/18 Y02B30/92 Y02B80/12 Y02B80/24

European class: E04B1/00C E04B1/30 E04B1/74 E04B1/80 E04B1/80B E04B5/10 E04B5/12 E04B5/48 E04B7/22 E04C3/11 E04C3/292 E04D13/16A1C E04D13/17 E06B3/66D F24F13/18 F24F5/00K P04B2/74C2P P04D13/08W P06B3/67F2 Y02B10/22 Y02B30/92 Y02B80/12 Y02B80/24

US class: 52/16 52/16P 52/173.1 52/173.100S 52/173.3 52/173.300S 52/220.1 52/220.100S 52/302.1 52/302.100S 52/309.4 52/309.400S 52/633 52/633S 52/64 52/64S 52/741.1 52/741.100S 52/741.4 52/741.400P 52/745.13 52/745.130S 52/782.1 52/782.100P 52/782.100S 52/786.1 52/786.100S 52/79.1 52/79.100S

Classification Explorer

Cited documents: WO06123005 A1, US7788868 BB, US6976337 BB, US6916392 BB, US6857237 BA, US6830791 BA, US6793971 BB, US6705939 BB, US6701681 BB, US6676506 BB, US6637644 BB, US6622456 BB, US6584735 BB, US6578331 BA, US6446402 BA, US6429961 BA, US6216688 BA, US6209269 BA, US6158190 A, US6105336 A, US6000192 A, US5953883 A, US5890341 A, US5873203 A, US5787652 A, US5765330 A, US5761864 A, US5753069 A, US5608995 A, US5573618 A, US5424111 A, US5347779 A, US5269109 A, US5265389 A, US5197242 A, US4981003 A, US4671032 A, US4642958 A, US4571909 A, US4465058 A, US4393861 A, US4380994 A, US4303058 A, US4295415 A, US4236360 A, US4062347 A, US3981294 A, US3736715 A, US3643394 A, US3641724 A, US3343474 A, US3258889 A, US3217455 A, US3161267 A, US2641449 A, US2011023759 AA, US2010287851 AA, US2007251164 AA, US2007094964 AA, US2006123723 AA, US2005252108 AA, US2004209567 AA, US2004172892 AA, US2003217522 AA, US2003167714 AA, US2003150174 AA, US2003101664 AA, US2003041557 AA, US06000192, US05890341, JP5024756 U1, JP2001065074 A2, JP05024756 U, EP0794294 A1, DE19804008 A1,

Forward Citations: WO17017608, US9617750, US9562351, US9435113, US9310132, US9297164, US9234355, US9109364, US8789328, US8677696, US8375670, US8272182, US8152608, US2016040424, US2015361654, US2015292204, US2014230354, US2014182224, US2014133092, US2014124053, US2012318475, US2012304562, US2012108158, US2011308184, US2011225916, US2011107693, US2011091679, RU2582241, JP2011052411, EP3133221, CN103958796, CN102561725, CN102561725, CN102561531, CN102535841,

Abstract:
Source: US2009173037A This continuing present patent offers the "repeat at will" built−in on/off vacuum effect after installed at site, coordinating with the forced fluid to create a window treatment effect, and as well as being able to provide the three stages insulation value at the same time. The other parts of this continued patent are supplementation of additional claims and to complete and improve the parent patent regarding energy conservation for buildings. It offers more efficient ways of constructing energy efficient buildings for residential, commercial and industrial use.

0) CN102979322B – METHOD FOR INTEGRALLY REINFORCING MASONRY STRUC...

73) Family number: 53303354 (CN102979322B) © PatBase

Title: METHOD FOR INTEGRALLY REINFORCING MASONRY STRUCTURE BY SECTIONAL STEEL COMBINED RING BEAMS AND CONSTRUCTION COLUMNS

Priority: CN201210594602 20121231

Family:

Publication number	Publication date	Application number	Application date
CN102979322 A	20130320	CN201210594602	20121231
CN102979322 B	20150610	CN201210594602	20121231

Probable Assignee: SHANGHAI RES INST BUILDING SCIENCES GROUP CO LTD

Assignee(s):(std)**:** SHANGHAI JIANKE ENGINEERING RECONSTRUCTION TECHNOLOGY CO LTD ; SHANGHAI RES INST BUILDING SCIENCES GROUP CO LTD ; SHANGHAI RES INST OF BUILDING SCIENCES GROUP CO LTD

Assignee(s): SHANGHAI RESEARCH INST OF BUILDING SCIENCES GROUP CO ; SHANGHAI JIANKE ENGINEERING RECONSTRUCTION TECHNOLOGY CO

Inventor(s):(std)**:** JI FENG ; JIANG HAO ; LI XIANGMIN ; ZHENG HAO ; ZHU CHUNMING

International class (IPC 8–9): E04B1/98 E04G23/02 (Advanced/Invention)

Classification Explorer

Cited documents: JP9221918 A2, JP2006226054 A2, CN201649679 U, CN201546370 U, CN102561717 A, CN101936074 A, CN101672110 A,

Forward Citations: CN104963431, CN103758358, CN103758358,

Abstract:
Source: CN102979322A The invention relates to the field of constructional engineering, particularly to the reinforcing of a building structure, and discloses a method for integrally reinforcing a masonry structure by sectional steel combined ring beams and construction columns. The technical scheme is as follows: angle irons, steel plates and through screws are adopted to form a combined section with an original wall body at the positions, where construction columns need to be arranged, of the masonry structure; the sectional steel ring beam is arranged at the joint of the wall body and a floor and is connected in a welding manner with the sectional steel and the steel plates in a combined column, and then polymer mortar is filled and compacted between the wall body and the sectional steel (steel plates). After the method is adopted to reinforce the masonry structure, the horizontal ultimate bearing capacity of the reinforced masonry structure is increased by more than 25 percent compared with that of a masonry structure employing the existing anti−seismic norms and requirements, and the loaded property and the anti−seismic property are greatly improved; meanwhile, compared with the additional reinforced concrete ring beams and the construction columns, the method has the advantages that the period of construction is short, the construction process is simple, no template needs to be set up, the use space is not applied, etc., and the method is suitable for improving the overall anti−seismic property of the large quantity of extensive masonry structures without the ring beams and the construction columns.

0) KR20150001636U – JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL ...

74) Family number: 59103412 (KR20150001636U) © PatBase

Title: JOINT STRUCTURE OF STEEL TUBE COLUMN AND STEEL BEAM

Priority: KR20130008644U 20131021

Family:

Publication number	Publication date	Application number	Application date
KR200477104 Y1	20150506	KR20130008644U	20131021
KR20150001636 U	20150429	KR20130008644U	20131021

Probable Assignee: IAE IAAEA IA AE

Assignee(s): IAE IAAEA IA AE ; YIBYEONGHUI

International class (IPC 8–9): E04B1/24 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: KR20130105249 A,

Abstract:
Source: KR200477104Y This is intended to reinforce the junction with the outer diaphragm and improve the way strength and stiffness of steel column joints, minimizing the length of the diaphragm protruding in the outer steel pipe, the inside concrete–filled steel tube column to be filled with concrete when the backroom It will be on a hollow steel tube columns and steel beams in the structure of the joints.Junction structure of a hollow steel tube columns and steel beams designed according to the preferred embodiment of this is a hollow steel tube columns and steel pipe poles of the first hollow shaft joint member joined to the first axis on both sides, a hollow steel tube column 1 and a second joining member joined to the second axis on both sides perpendicular to the shaft axis, comprising a hollow steel joined to the steel tube column information of the first shaft member and the second joint shaft via the joining members and, the first axis Joints material, both ends of the width direction is composed of rectangular cross–section which extends a predetermined length protrudes from the hollow steel tube so that the Pillar hollow pillar junction plate is bonded to the steel pipe columns, the columns are vertically protruding from the center junction plate and webs of steel beams It consists of a T–shape, including the joint plate coupled beam and a second axial abutment member, in the height of the pole junction plate a hollow steel pipe is spaced apart in the longitudinal direction of the column is extended to protrude at both ends of the pole junction plate bonding, and bonding plate and steel pipe columns and pillars are joined inside corners are cut in an arc shape and is characterized in that the upper and lower flange of the steel beam consists of a pair of horizontal stiffeners are bonded, respectively.

0) CN204252286U – RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–S...

75) Family number: 58958826 (CN204252286U) © PatBase

Title: RECTANGULAR CONCRETE–FILLED STEEL TUBE COLUMN–STEEL BEAM CONNECTION JOINT

Priority: CN201420622649U 20141027

Family:

Publication number	Publication date	Application number	Application date
CN204252286 U	20150408	CN201420622649U	20141027

Probable Assignee: UNIV NORTH CHINA WATER AND RESOU

Assignee(s):(std)**:** UNIV NORTH CHINA WATER AND RESOU

Assignee(s): NORTH CHINA UNIV OF WATER CONSERVANCY AND HYDROPOWER ; NORTH CHINA UNIV OF WATER RESOURCES AND ELECTRIC POWER

Inventor(s):(std)**:** HAN AIHONG ; WU ZONGLIANG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204252286U The utility model discloses a rectangular concrete–filled steel tube column–steel beam connection joint. The rectangular concrete–filled steel tube column–steel beam connection joint comprises a rectangular steel tube, a steel beam I, a steel beam II, a fixed sleeve, flange connecting pieces I, flange connecting pieces II, a web connecting piece, a damping plate, high–strength bolts I, high–strength bolts II, referencing connecting plates and high–strength bolts III, the left end of the steel beam I penetrates through the fixed sleeve and is aligned with the left end face of the fixed sleeve and connected to the fixed sleeve through the high–strength bolts III, the left end of the steel beam I and the reinforcing connecting plates are welded to the rectangular steel tube, the steel beam I is connected with the steel beam II through the flange connecting pieces I, the flange connecting pieces II and the web connecting piece, the damping plate is arranged between the steel beam I and the steel beam II, and concrete is poured in the rectangular steel tube. The rectangular concrete–filled steel tube column–steel beam connection joint is simple in structure, convenient to machine, capable of not only guaranteeing beam and column connection safety and reliability but also greatly reducing construction and installation difficulty, high in impact toughness, strong in extensional deformation capability, high in universality, convenient to replace, stable and efficient in energy–dissipating capacity, and higher in anti–seismic property.

0) US2011131892A – GREEN PRECAST MOLD

76) Family number: 49044032 (US2011131892A) © PatBase

Title: GREEN PRECAST MOLD

Priority: US20090633416 20091208 US20110135485 20110707

Family:

Publication number	Publication date	Application number	Application date
US2011131892 AA	20110609	US20090633416	20091208
US2011265413 AA	20111103	US20110135485	20110707
US8997421 BB	20150407	US20110135485	20110707
WO11071524 A1	20110616	WO2010US03113	20101208

Probable Assignee: CERAME JOSE JAVIER

Assignee(s):(std)**:** DEL PINO GARCIA PEDRO ; DEL PINO PEDRO ; QUILES PEREZ PEDRO ; QUILES RODRIGUEZ PEDRO DAVID

Assignee(s): CERAME JOSE JAVIER

Inventor(s):(std)**:** DEL PINO GARCIA PEDRO ; DEL PINO PEDRO ; QUILES PEREZ PEDRO ; QUILES RODRIGUEZ PEDRO DAVID

Agent(s): ROBERTO J; HOGLUND AND PAMIAS PSC; REYES RIVERA HECTOR M

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B28B19/00 B28B7/00 B28B7/02 E04B1/16 E04B2/86 E04B2/94 E04C2/06 (Advanced/Invention)

CPC: E04B2002/8688 B28B19/00 E04B1/161 E04B2/8635 E04B2/8647

European class: B28B19/00 E04B1/16A E04B2/86G E04B2/86H P04B2/86S

US class: 52/125.4 52/125.400P 52/255 52/255S 52/259 52/259S 52/315 52/315S 52/422 52/426 52/426P 52/442 52/576 52/576S 52/646 52/646S 52/715 52/750 52/750S

Classification Explorer

Cited documents: US6708362 BA, US6260320 BA, US5839243 A, US5657601 A, US5598675 A, US5473849 A, US4998393 A, US4598519 A, US4516372 A, US2592634 A, US2011314760 AA, US2009313931 AA, US2009107065 AA, US2008022619 AA, US2006260239 AA, US2002116889 AA, US2001029717 AA,

Forward Citations: WO15140482, WO14152426, WO14058419, US9534384, US9115503, US9074379, US9038339, US8863445, US8844223, US8839580, US8756890, US2016281358, US2014332658, US2013074432, US2012047816, FR3008116,

Abstract:
Source: US2011131892A A wall molding system using two (2) prefabricated panels, with finished exterior surfaces placed parallel to each other and held from the inside by separators–anchors. The panels may also use exterior fasteners to hold the weight and pressure of the concrete. Insulating material and structural reinforcements may also be placed inside the mold. Concrete would be used to fill the spaces between the panels.

0) CN104453096A – STEEL SKELETON–STEEL TUBE GANGUE CONCRETE COMBI...

77) Family number: 58766393 (CN104453096A) © PatBase

Title: STEEL SKELETON–STEEL TUBE GANGUE CONCRETE COMBINED COLUMN WITH CROSS–SHAPED SECTION

Priority: CN201410590101 20141029

Family:

Publication number	Publication date	Application number	Application date
CN104453096 A	20150325	CN201410590101	20141029

Probable Assignee: UNIV SHENYANG JIANZHU

Assignee(s):(std)**:** SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU

Inventor(s):(std)**:** ZHU SHAOJIE ; ZHAI ZHANGLIN ; XU YAFENG ; LYU CONGCONG ; CHEN QIAN ; BAI FEIFEI

International class (IPC 8–9)**:** E04C3/36 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105201146,

Abstract:
Source: CN104453096A The invention relates to a combined column with a cross–shaped section in civil engineering. The combined column is composed of a steel skeleton, a steel tube, a steel reinforcement framework and concrete and is characterized in that the steel skeleton is formed by welding steel plates; the combined column with the cross–shaped section is enclosed by using a stirrup; the steel skeleton is located on limbs of the cross–shaped column; the steel tube is located in the core of the cross–shaped column; and the combined column with the cross–shaped section, which is enclosed by using the stirrup, and the steel tube are filled with the concrete. The steel skeleton is welded to be T–shaped. Corners of the combined column with the cross–shaped section, which is enclosed by using the stirrup, are filled with longitudinal reinforcements. The concrete is gangue concrete containing broken gangue serving as an aggregate. Due to the adoption of the gangue concrete, the self–weight of the column is reduced, the resources are saved, and the environment is protected; and the steel reinforcement framework plays a role in constraining concrete and is capable of improving the bearing capacity of the column. The combined column with the cross–shaped section is used as a main structural member of a frame structure in a high–rise building or a long–span building, and has the characteristics of high bearing capacity, high rigidity, light weight, good plasticity and toughness, good impact and fatigue resistance, favorable earthquake resistance, energy saving, environment friendliness and the like.

0) CN104453094A – STEEL SKELETON–STEEL TUBE GLASS CONCRETE COMBIN...

78) Family number: 58766949 (CN104453094A) © PatBase

Title: STEEL SKELETON–STEEL TUBE GLASS CONCRETE COMBINED COLUMN WITH L–SHAPED SECTION

Priority: CN201410595093 20141030

Family:

Publication number	Publication date	Application number	Application date
CN104453094 A	20150325	CN201410595093	20141030

Probable Assignee: UNIV SHENYANG JIANZHU

Assignee(s):(std)**:** SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU

Inventor(s):(std)**:** CHEN QIAN ; LI RILIANG ; LYU CONGCONG ; XU YAFENG ; ZENG JUN ; ZHAI ZHANGLIN ; ZHU SHAOJIE

International class (IPC 8–9): C04B14/22 C04B28/00 E04C3/34 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104453094A The invention relates to an L–shaped combined column used in civil engineering. A steel skeleton–steel tube glass concrete combined column with an L–shaped section is composed of a steel skeleton, a steel tube, a steel reinforcement framework and glass concrete and is characterized in that the steel skeleton is formed by welding steel plates; the steel skeleton is located on limbs of the L–shaped column enclosed by using a stirrup; the steel tube is located in the core of the L–shaped column; and the L–shaped column enclosed by using the stirrup and the steel tube are filled with the glass concrete containing broken glass serving as an aggregate. The steel skeleton is welded to be T–shaped. The glass concrete contains crude glass aggregates with the particle sizes of 5–30mm and fine glass aggregates with the particle sizes of 0.1–3mm. Due to the adoption of the glass concrete, the corrosion resistance of the column can be effectively improved, the resources are saved, and the environment is protected; and the steel skeleton–steel tube glass concrete combined column with the L–shaped section is used as a main structural member of a frame structure in a high–rise building or a long–span building, and has the characteristics of favorable earthquake resistance, good durability, energy saving, environment friendliness and the like.

0) KR20150031585A – RETAINING WALL WITHOUT REMOVING STEEL BAR AND M...

79) Family number: 58802055 (KR20150031585A) © PatBase

Title: RETAINING WALL WITHOUT REMOVING STEEL BAR AND MOULD, AND CONSTRUCTION METHOD THEREOF

Priority: KR20130110952 20130916

Family:

Publication number	Publication date	Application number	Application date
KR20150031585 A	20150325	KR20130110952	20130916

Probable Assignee: MUN JEONG WON

Assignee(s):(std)**:** KIM SUN HAK ; MUN JEONG WON

Inventor(s):(std)**:** KIM SUN HAK ; MOON JE HWAN

International class (IPC 8–9)**:** E02B3/14 E02D17/20 E02D29/02 (Advanced/Invention)

CPC: E02D29/02 E02D5/22 E02D5/34 E02D17/20

Classification Explorer

Abstract:
Source: KR20150031585A The present invention relates to a retaining wall for making steel bar distribution, and the installation and removal of a form unnecessary, and a construction method thereof. The retaining wall comprises: a plurality of columns which are made of an H–pile steel material, buried in the ground by concrete placed on an H–pile connected to a lower column without a bottom plate, and spaced apart from each other; a steel frame which is made of a steel material, is installed between the columns to be combined with a projection on the back side of the H–pile column or projections on both sides of the H–pile by a bolt, and has the empty part therein to be filled with paced concrete; a plurality of horizontal reinforcement materials horizontally installed inside the steel frame to support the steel frame, and strengthening the rigidity of the steel frame after concrete is placed; and a vertical reinforcement material vertically installed in the steel frame to support the steel frame, functioning as a main steel bar, and resisting earth pressure. The steel frame has concrete placed therein when a concrete placement device moves.

80) Family number: 58725617 (CN204212276U) © PatBase

Title: NODE CONNECTION STRUCTURE OF CONCRETE–FILLED SQUARE STEEL TUBULAR COLUMN AND STEEL BEAM

Priority: CN201420675424U 20141113

Family:

Publication number	Publication date	Application number	Application date
CN204212276 U	20150318	CN201420675424U	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204212276U The utility model discloses a node connection structure of a concrete–filled square steel tubular column and a steel beam, which belongs to the technical field of building structure engineering, and comprises a square steel pipe filled with concrete, an H–type steel beam, two L–type plates and a support plate which is arranged below the H–type steel beam, the two L–type plates are symmetrically arranged on the two sides of an H–type steel beam web, an outer L surface of the L–type plates is welded on the square steel pipe, another one L surface of the L–type plates is connected with the H–type steel beam web through bolts, a U–type inserted end is arranged on one end of the support plate, a jack which is matched with the U–type inserted end is arranged on the square steel pipe, the inserted end is inserted into the jack and is welded on the square steel pipe, vertical reinforcing plates are arranged on the bottom surface of the support plate, and the top surface of the support plate is connected with a lower wing edge plate of the H–type steel beam through the bolts. The node connection structure of the concrete–filled square steel tubular column and the steel beam is stronger in stability, and is convenient to make by adopting connecting pieces.

81) Family number: 58725610 (CN204212275U) © PatBase

Title: HIGH STABILITY NODE STRUCTURE OF STEEL BEAM AND STEEL COLUMN,

Priority: CN201420675306U 20141113

Family:

Publication number	Publication date	Application number	Application date
CN204212275 U	20150318	CN201420675306U	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN204212275U The utility model discloses a high stability node structure of a steel beam and a steel column, which belongs to the technical field of building structure engineering, and comprises a square steel pipe, an H–type steel beam and two support plates, wherein the square steel pipe is filled with concrete, the two support plates are respectively arranged above and below the H–type steel beam, U–shaped insert ends are arranged on one end of the support plates, jacks which are matched with the insert ends are arranged on the square steel pipe, the insert ends are inserted into the jacks and are welded on the square steel pipe, vertical reinforcing plates are arranged on one surface of the support plates, mounting surfaces are arranged on another one surface of the support plates, and the mounting surfaces of the two support plates are respectively connected with upper and lower wing edge plates of the H–type steel beam through bolts. The high stability node structure of the steel beam and the steel column is strong in stability, and is convenient to make by adopting connecting pieces.

0) CN204212263U – BUILDING FRAME WITH HIGH–STABILITY BEAM COLUMN ...

82) Family number: 58725534 (CN204212263U) © PatBase

Title: BUILDING FRAME WITH HIGH–STABILITY BEAM COLUMN NODE

Priority: CN201420675258U 20141113

Family:

Publication number	Publication date	Application number	Application date
CN204212263 U	20150318	CN201420675258U	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104878841,

Abstract:
Source: CN204212263U The utility model discloses a building frame with a high–stability beam column node and belongs to the technical field of building structure engineering. The building frame comprises four columns and beams connected with the adjacent columns. The columns are square steel pipes filled with concrete, and the beams are H–shaped steel beams. The building frame further comprises two supporting plates located above and below the H–shaped steel beams respectively, one end of each supporting plate is a convex inserted end, each square steel pipe is provided with an insertion hole matched with the inserted end, and the inserted end is inserted in the insertion hole and welded to the square steel pipe. One surface of each supporting plate is provided with a vertical reinforcing plate, and the other opposite surface is an installing surface. The installing surfaces of the two supporting plates are in bolted connection with upper flange plates and lower flange plates of the H–shaped steel beams respectively. The building frame is higher in stability, and adopted connecting pieces are convenient to manufacture.

0) CN102995789B – BUILT–IN SECTION STEEL COLUMN–LATTICE STEEL BEA...

83) Family number: 53340299 (CN102995789B) © PatBase

Title: BUILT–IN SECTION STEEL COLUMN–LATTICE STEEL BEAM–MESH STEEL SUPPORT CONCRETE WALL BODY AND MANUFACTURING METHOD

Priority: CN201210168063 20120525

Family:

Publication number	Publication date	Application number	Application date
CN102995789 A	20130327	CN201210168063	20120525
CN102995789 B	20150311	CN201210168063	20120525

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Inventor(s):(std)**:** CAO WANLIN ; DONG HONGYING ; YU CHUANPENG ; ZHANG JIANWEI

International class (IPC 8–9): E04B1/98 E04B2/56 E04B2/58 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: KR20090058919 A, CN101761154 A,

Forward Citations: CN105089178, CN103883030, CN103726582, CN103726582,

Abstract:
Source: CN102995789A The invention discloses a built–in section steel column–lattice steel beam–mesh steel support concrete wall body and a manufacturing method, and belongs to the field of steel–concrete combined shear walls. The wall body comprises section steel laminated border columns, section steel core columns, lattice steel beams, mesh steel supports and a reinforced concrete shear wall body. The section steel laminated border columns are arranged at the two ends of the shear wall body. The section steel core columns are arranged in parallel between the section steel laminated border columns. The section steel laminated border columns are connected with the section steel core columns through the lattice steel beams and the mesh steel supports, and the section steel core columns are connected with one another through the lattice steel beams and the mesh steel supports. Reinforcements of the shear wall body are assembled, and concrete is poured to form the built–in section steel column–lattice steel beam–mesh steel support concrete wall body. Compared with an ordinary concrete–filled steel tube border shear wall and an ordinary steel plate shear wall, the built–in section steel column–lattice steel beam–mesh steel support concrete wall body has the advantages that the bearing capability is improved, the bearing capability and the rigidity are slowly attenuated, and the post seismic performance is stable; by a section steel column–lattice steel beam–mesh steel support steel structure skeleton, the ductility and energy consumption performance of the shear wall are greatly improved, and the seismic performance is high; and a steel structure is convenient to construct, and can be used for the seismic design of a large–sized complex high–rise buildings.

0) CN104389380A – T–SHAPED CROSS SECTION COMBINED COLUMN OF STEEL...

84) Family number: 58601914 (CN104389380A) © PatBase

Title: T–SHAPED CROSS SECTION COMBINED COLUMN OF STEEL RIB–STEEL TUBE GLASS CONCRETE

Priority: CN201410600632 20141031

Family:

Publication number	Publication date	Application number	Application date
CN104389380 A	20150304	CN201410600632	20141031

Probable Assignee: UNIV SHENYANG JIANZHU

Assignee(s):(std)**:** SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU

Inventor(s):(std)**:** CHEN QIAN ; LI RILIANG ; LYU CONGCONG ; XU YAFENG ; ZENG JUN ; ZHAI ZHANGLIN ; ZHU SHAOJIE

International class (IPC 8–9)**:** E04C3/36 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105201146,

Abstract:
Source: CN104389380A The invention relates to a T–shaped cross section combined column of steel rib–steel tube glass concrete. The T–shaped cross section combined column of steel rib–steel tube glass concrete consists of steel ribs, a steel tube, a reinforced steel framework and glass concrete, wherein the steel ribs are formed by welding steel plates and are positioned on limbs of the T–shaped column formed by surrounding of stirrups; the steel tube is positioned in the center of the T–shaped column; the glass concrete is positioned inside and outside the steel tube and inside the T–shaped column formed by surrounding of the stirrups; the glass concrete is filled with crushed glass pieces as aggregate. The steel ribs are welded into T shapes. The glass concrete comprises rough glass aggregate of which the particle size is 5–30mm and fine glass aggregate of which the particle size is 0.1–3mm. Due to adoption of the glass concrete, the corrosion resistance of the column is effectively improved, and the reinforcing steel framework can constrain the concrete, so that the bearing capability of the column is improved. The T–shaped cross section combined column is a main component of a frame structure of a large–span building, and has the characteristics of good durability, energy conservation, environment–friendliness and the like.

0) CN204174955U – CONNECTION STRUCTURE FOR CONNECTING CONCRETE FI...

85) Family number: 58573410 (CN204174955U) © PatBase

Title: CONNECTION STRUCTURE FOR CONNECTING CONCRETE FILLED SQUARE STEEL COLUMN ON REINFORCED CONCRETE COLUMN

Priority: CN201420590254U 20141013

Family:

Publication number	Publication date	Application number	Application date
CN204174955 U	20150225	CN201420590254U	20141013

Probable Assignee: ANHUI TIANZHU CONSTRUCTION GROUP CO LTD

Assignee(s):(std)**:** ANHUI TIANZHU CONSTRUCTION GROUP CO LTD

Assignee(s): BUILDING CONSTRUCTION GROUP CO LTD ANHUI DAYS ; ANHUI TIANZHU CONSTRUCTION GROUP CO

Inventor(s):(std)**:** ZHANG SHANFU ; YANG PEICHANG ; WANG LAIBIN ; GU GUANGHAI ; CHEN WENYAN

International class (IPC 8–9): E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104295112, CN104295112,

Abstract:
Source: CN204174955U The utility model relates to a connection structure for connecting a concrete filled square steel column on a reinforced concrete column. Stripping and dabbing are carried out on the top of an original column within a certain range, horizontal connection reinforcement bars are evenly distributed on vertical main ribs of the original reinforced concrete column in the circumferential direction, connection screw rods, annular connection end steel plates with holes and annular connection bottom plates with holes are arranged at the bottom of a dabbing area, anchor cable fixing ends are evenly distributed on the upper edge of the dabbing area in the circumferential direction, and the annular connection bottom plates with holes and annular connection top plates with holes are welded with the bottom and the top of a separated type steel pipe respectively. A hole is formed in the center of the original concrete filled square steel column, reinforcement bars are implanted in the hole, and the steel pipe and the hole are sealed after being filled with concrete in a pressing mode. The original column can be reinforced to some extent, the effect of heightening the column is achieved, and the purpose that the original reinforced concrete column and the upper concrete filled square steel column can be well connected and stressed in a cooperated mode is achieved.

0) CN204139459U – RECYCLED CONCRETE SPECIAL–SHAPED COLUMN

86) Family number: 58437998 (CN204139459U) © PatBase

Title: RECYCLED CONCRETE SPECIAL–SHAPED COLUMN

Priority: CN201420055520U 20140128

Family:

Publication number	Publication date	Application number	Application date
CN204139459 U	20150204	CN201420055520U	20140128

Probable Assignee: UNIV HOHAI

Assignee(s):(std)**:** HOHAI UNIV ; UNIV HOHAI

Inventor(s):(std)**:** ZHANG LI ; YU YI ; WU KAI ; CAO PINGZHOU

International class (IPC 8–9)**:** E04C3/36 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105442755, CN105133786, CN104196171, CN104196169,

Abstract:
Source: CN204139459U The utility model discloses a recycled concrete special–shaped column, which comprises a hollow column body and recycled concrete, wherein the hollow column body is composed of a closed profiled sheeting by surrounding, the cross section of the hollow column body is T–shaped, L–shaped or cross–shaped, the recycled concrete is filled in the hollow column body, and a rib part of the closed profiled sheeting is arranged inwards. The outside surface of the recycled concrete special–shaped column disclosed by the utility model does not have edges and corners, so that the column is good in aesthetic property; the column is high in bearing capacity and strong in seismic performance; compared with a steel reinforced concrete special–shaped column, the recycled concrete special–shaped column is constructed more easily; the closed profiled sheeting delays the local buckling of steel plates, and compared with a special–shaped column composed of a common steel plate by surrounding, the bearing capacity and stability of the recycled concrete special–shaped column are higher; due to the rib part of the closed profiled sheeting, in the application process of the column, no stiffening rib is required to be additionally welded, and no binding bar is required to be arranged, thereby reducing troubles in construction; in the process of construction, a template is not required to be built, thereby reducing the processes, and solving the problem of complex construction in the application of the special–shaped column; and finally, recycled concrete is adopted for replacing common concrete, so that the bearing capacity and the seismic performance are rarely reduced, but the recycled concrete special–shaped column is economic and environment–friendly, and has an important significance to sustainable development.

0) CN204139694U – STEEL TUBE TOWER COLUMN WITH INNER WALL PROVIDE...

87) Family number: 58438806 (CN204139694U) © PatBase

Title: STEEL TUBE TOWER COLUMN WITH INNER WALL PROVIDED WITH REINFORCEMENT STRUCTURES

Priority: CN201420537811U 20140918

Family:

Publication number	Publication date	Application number	Application date
CN204139694 U	20150204	CN201420537811U	20140918

Probable Assignee: NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s):(std)**:** NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD ; NANJING LIANZHONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s): NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO

Inventor(s):(std)**:** ZHAN FUJUN

International class (IPC 8–9): E04H12/08 E04H12/16 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104251066,

Abstract:
Source: CN204139694U The utility model discloses a steel tube tower column with the inner wall provided with reinforcement structures. Multiple annular reinforcement ribs or spiral reinforcement ribs are arranged on the inner wall of the tower column in the circumferential direction, reinforcement columns are arranged on the inner wall of the tower column located between the annular reinforcement ribs or the spiral reinforcement ribs at intervals in the axial direction, and the reinforcement columns and the annular reinforcement ribs or the spiral reinforcement ribs form the reinforcement structures which are crisscross. The annular reinforcement ribs or the spiral reinforcement ribs on the inner wall of the tower column enhance the peripheral strength of a whole pipeline and the shearing resistance of the wall of the pipeline, the thickness of a steel plate can be greatly reduced, super–large–diameter steel pipes can be manufactured, and the reinforcement ribs can protect seams formed in the manufacturing process of the tower column; the reinforcement columns enhance the axial strength of the whole pipeline and are provided with steel cables or steel strands inside or filled with concrete, the concrete bears pressure stress instead of a steel structure, the steel cables or the steel strands bear pull force generated by wind load, and the swing amplitude of a tower top is reduced.

0) CN104314185A – CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND...

88) Family number: 58385497 (CN104314185A) © PatBase

Title: CONCRETE FILLED SQUARE STEEL TUBULAR COLUMN AND STEEL BEAM JOINT CONNECTING STRUCTURE

Priority: CN201410637964 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314185 A	20150128	CN201410637964	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105040834,

Abstract:
Source: CN104314185A The invention discloses a concrete filled square steel tubular column and steel beam joint connecting structure, and belongs to the technical field of building structure engineering. The joint connecting structure comprises a concrete filled square steel tube, an H–shaped steel beam, two L–shaped plates and a supporting plate positioned below the H–shaped steel beam, the two L–shaped plates are symmetrically positioned on two sides of a web plate of the H–shaped steel beam, one outer L surface of each L–shaped plate is welded on the square steel tube, the other outer L surface of each L–shaped plate is connected with the web plate of the H–shaped steel beam in a bolted manner, one end of the supporting plate is a U–shaped inserting end, the square steel tube is provided with a jack matched with the inserting end, the inserting end is inserted into the jack and welded on the square steel tube, a vertical reinforcing plate is arranged at the bottom of the supporting plate, and the top of the supporting plate is connected with a lower flange plate of the H–shaped steel beam in a bolted manner. The joint connecting structure is higher in stability, and connectors are convenient to manufacture.

0) CN204125872U – HIGHWAY GUARDRAIL REINFORCEMENT DEVICE

89) Family number: 58365406 (CN204125872U) © PatBase

Title: HIGHWAY GUARDRAIL REINFORCEMENT DEVICE

Priority: CN201420468354U 20140819

Family:

Publication number	Publication date	Application number	Application date
CN204125872 U	20150128	CN201420468354U	20140819

Probable Assignee: CUI HONGJUN

Assignee(s):(std)**:** CUI HONGJUN

Inventor(s):(std)**:** CUI HONGJUN ; CUI SHAN ; LI XIA ; QIAO YIDAN ; ZHU MINQING

International class (IPC 8–9): E01F15/04 E02D27/42 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104153311,

Abstract:
Source: CN204125872U The utility model relates to a highway guardrail reinforcement device which comprises a hollow foundation guardrail vertical column and a waveform guardrail plate. The highway guardrail reinforcement device is characterized in that a reinforcement hole is formed in a foundation along the center of the hollow foundation guardrail vertical column, reinforcement cages are arranged in the reinforcement hole and the hollow vertical column, the reinforcement cages are filled with concrete blocks, and a heightening guardrail vertical column and a protection cross beam are mounted on the foundation guardrail vertical column. The characteristic of a concrete filled steel tube is completely used, poured reinforced concrete and the vertical columns constitute a concrete filled steel tube structure, the cross−sectional properties of the vertical columns are changed, the flexural−tensile stress resistance of the vertical columns is improved, the reinforced concrete in the reinforcement hole increases the burial depth of the vertical columns, and the anti−collision capacity of the vertical columns is improved. The protection cross beam can effectively increase the height of a guardrail, a vehicle is prevented from rushing out of the guardrail, the protection cross beam and the waveform guardrail plate are together stressed, and the defect caused by insufficient anti−collision capacity due to the insufficient thickness of the guardrail plate is overcome. Old guardrails which are pulled out are improved and then are used in new highways, cost is saved, and waste is reduced.

0) CN104314184A – HIGH–STABILITY STEEL BEAM AND STEEL COLUMN JOIN...

90) Family number: 58385484 (CN104314184A) © PatBase

Title: HIGH–STABILITY STEEL BEAM AND STEEL COLUMN JOINT STRUCTURE

Priority: CN201410637963 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314184 A	20150128	CN201410637963	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104314184A The invention discloses a high–stability steel beam and steel column joint structure, and belongs to the technical field of building structure engineering. The joint structure comprises a concrete filled square steel tube, an H–shaped steel beam and two supporting plates, the supporting plates are positioned above and below the H–shaped steel beam respectively, one end of each supporting plate is a U–shaped inserting end, the square steel tube is provided with jacks matched with the inserting ends, the inserting ends are inserted into the jacks and welded on the square steel tube, a vertical reinforcing plate is arranged on one surface of each supporting plate, the other opposite surface of each supporting plate is a mounting surface, and the mounting surfaces of the two supporting plates are connected with an upper flange plate and a lower flange plate of the H–shaped steel beam in a bolted manner. The joint structure is higher in stability, and connectors are convenient to manufacture.

0) CN104314168A – BUILDING FRAME WITH HIGH–STABILITY BEAM–COLUMN ...

91) Family number: 58385261 (CN104314168A) © PatBase

Title: BUILDING FRAME WITH HIGH–STABILITY BEAM–COLUMN JOINTS

Priority: CN201410637865 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104314168 A	20150128	CN201410637865	20141113

Probable Assignee: CAO NIANJUN

Assignee(s):(std)**:** CAO NIANJUN

Assignee(s): JUN CAO YEARS

Inventor(s):(std)**:** CAO NIANJUN

International class (IPC 8–9): E04B1/30 E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104314168A The invention discloses a building frame with high–stability beam–column joints, and belongs to the technical field of building structure engineering. The building frame comprises four vertical columns, beams and two supporting plates, the beams are connected with adjacent vertical columns, the vertical columns are concrete filled square steel tubes, the beams are H–shaped steel beams, the supporting plates are positioned above and below the H–shaped steel beams respectively, one end of each supporting plate is a convex inserting end, the square steel tubes are provided with jacks matched with the inserting ends, the inserting ends are inserted into the jacks and welded on the square steel tubes, a vertical reinforcing plate is arranged on one surface of each supporting plate, the other opposite surface of each supporting plate is a mounting surface, and the mounting surfaces of the two supporting plates are connected with upper flange plates and lower flange plates of the H–shaped steel beams in a bolted manner. The building frame is higher in stability, and connectors are convenient to manufacture.

0) CN104294921A – CONNECTING JOINT OF CONCRETE COLUMN AND STEEL B...

92) Family number: 58305833 (CN104294921A) © PatBase

Title:	CONNECTING JOINT OF CONCRETE COLUMN AND STEEL BEAM
Priority:	CN201410638046 20141113

Family:

Publication number	Publication date	Application number	Application date
CN104294921 A	20150121	CN201410638046	20141113

Probable Assignee:	CAO NIANJUN
Assignee(s):(std)**:**	CAO NIANJUN
Assignee(s):	JUN CAO YEARS
Inventor(s):(std)**:**	CAO NIANJUN
International class (IPC 8–9):	E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104294921A The invention discloses a connecting joint of a concrete column and a steel beam, belongs to the technical field of building structure engineering. The connecting joint comprises a square steel tube filled with concrete, an H–shaped steel beam, two connecting plates penetrating through the square steel tube, and a support plate positioned below the H–shaped steel beam, wherein the two connecting plates stretch out of the square steel tube and are respectively positioned on two sides of the web of the H–shaped steel beam and are connected with the web through bolts; one end of the support plate is a U–shaped inserting end; an inserting hole in match with the inserting end is formed in the square steel tube; the inserting end is inserted into the inserting hole and is welded with the square steel tube; a vertical reinforcing plate is arranged on the bottom surface of the support plate; the top surface of the support plate is connected with a lower edge plate of the H–shaped steel beam through bolts. The connecting joint is high in stability, and used connecting parts are convenient to manufacture.

0) CN104278749A – INTEGRAL CONNECTING SYSTEM FOR STEEL–CONCRETE C...

93) Family number: 58262725 (CN104278749A) © PatBase

Title:	INTEGRAL CONNECTING SYSTEM FOR STEEL–CONCRETE COMPOSITE STRUCTURE COMPONENT OF PREFABRICATED CONSTRUCTION
Priority:	CN201410572957 20141023

Family:

Publication number	Publication date	Application number	Application date
CN104278749 A	20150114	CN201410572957	20141023

Probable Assignee:	HUBEI HONGYI CONSTR CO LTD
Assignee(s):(std)**:**	HUBEI HONGYI CONSTR CO LTD ; HUBEI HONGYI CONSTRUCTION CO LTD
Assignee(s):	HONY CONSTRUCTION CO LTD IN HUBEI ; HUBEI HONGYI CONSTRUCTION CO
Inventor(s):(std)**:**	CHEN SIMIN ; FENG GUANGYU ; HUANG SHENG ; YE LILI
International class (IPC 8–9):	E04B1/30 E04B1/38 E04B5/17 (Advanced/Invention)
Classification Explorer	
Cited documents:	JP2002317499 A2, CN2918571 Y, CN204174741 U, CN203654473 U, CN203393876 U, CN103953119 A,
Forward Citations:	CN105332417,

Abstract:
Source: CN104278749A The invention relates to an integral connecting system for a steel–concrete composite structure component of a prefabricated construction, and belongs to the field of prefabricated construction engineering. The integral connecting system provided by the invention comprises a concrete filled steel tubular column, a superposed beam, a composite floor slab and a precast cladding panel, wherein a lower precast beam of the superposed beam is connected with the node of the concrete filled steel tubular column through an H–shaped steel connector at the beam end, a lower precast bottom plate of the superposed beam is sequentially lapped on the lower precast beams of two related superposed beams, a precast steel reinforcement cage is arranged between the edges of adjacent precast bottom plates, and the precast cladding panel is connected with the lower precast beam through a wall beam switching member to achieve one–time concrete in situ casting of an upper cast–in–place slab of the superposed beam and the precast steel reinforcement cage between the edges of the upper cast–in–place slab of the superposed beam and the adjacent lower precast bottom plate, thus completing the integral connection of the composite structure component; the integral connecting system provided by the invention is safe, good in stability, high in assembly and construction speed and high in construction efficiency, and fully reflects the advantages and the industry development trends of the prefabricated constructions.

0) CN103266624A – METHOD FOR SUPPORTING OIL AND GAS PIPELINE PENE...

94) Family number: 54644912 (CN103266624A) © PatBase

Title: METHOD FOR SUPPORTING OIL AND GAS PIPELINE PENETRATING THROUGH KARST ACTIVE ZONE

Priority: CN201310212829 20130602

Family:

Publication number	Publication date	Application number	Application date
CN103266624 A	20130828	CN201310212829	20130602
CN103266624 B	20150114	CN201310212829	20130602

Probable Assignee: CN PETROLEUM ENG CO LTD

Assignee(s):(std)**:** CHINA PETROLEUM GROUP ENGINEERING DESIGN CO LTD ; CN PETROLEUM ENG CO LTD

Assignee(s): CHINA PETROLEUM ENGINEERING CO

Inventor(s):(std)**:** JIANG XI ; KANG KAI ; LI PU ; LI YUE ; QIU LI ; SUN LIN ; TANG JIANPING ; WANG TANGYU ; XIA CHENGMI ; YANG HANQING

International class (IPC 8–9): E02D29/045 (Advanced/Invention)

Classification Explorer

Cited documents: KR20040088735 A, JP11172710 A2, CN102808422 A, CN101250882 A,

Forward Citations: WO16033771,

Abstract:
Source: CN103266624A The invention discloses a method for supporting an oil and gas pipeline penetrating through a karst active zone. The method for supporting the oil and gas pipeline penetrating through the karst active zone comprises the steps that a composite high–pressure jet grouting column–shaped basic pillar is constructed, wherein the basic pillar is composed of five high–pressure jet grouting poles which are arranged in a quincunx type; a reinforced concrete spouting supporting pole is constructed, wherein the lower end of the reinforced concrete spouting supporting pole is embedded into the center of the basic pillar by about 1m, the diameter of the reinforced concrete spouting supporting pole is identical to the diameter of a pipeline, and the diameter of the embedded portion is smaller than the diameter of the pipeline by 8cm–10cm; a trapezoid groove reinforced concrete bearing platform is constructed, wherein trumpet type joint is adopted by the trapezoid groove reinforced concrete bearing platform and the reinforced concrete spouting supporting pole and at least six load–bearing bars at the top end of the reinforced concrete spouting supporting pole is in joint with a bearing platform bottom plate reinforcing steel bar through arc–shaped bending in a point welding or binding mode. The method for supporting the oil and gas pipeline penetrating through the karst active zone has the advantages that the method is suitable for being widely used in large underground caverns in the karst zone, soft soil is filled in the caverns, the structure is safe and reliable, and design construction is simple and convenient.

0) CN204059759U – CONCRETE COLUMN WITH HOLLOW STEEL TUBES

95) Family number: 58164856 (CN204059759U) © PatBase

Title: CONCRETE COLUMN WITH HOLLOW STEEL TUBES

Priority: CN201420506469U 20140903

Family:

Publication number	Publication date	Application number	Application date
CN204059759 U	20141231	CN201420506469U	20140903

Probable Assignee: DEQING HIGHWAY ENGINEERING CONTROLLING CO

Assignee(s):(std)**:** DEQING HIGHWAY ENGINEERING CONTROLLING CO

Assignee(s): DEZHOU HIGHWAY ENGINEERING CORP

Inventor(s):(std)**:** LI GUANGTONG ; MENG QINGBO ; YANG RONGDONG ; WANG FEI ; WANG TIANGANG

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104675019, CN104652704, CN104652704,

Abstract:
Source: CN204059759U The utility model relates to a concrete column with hollow steel tubes. The concrete column comprises an outer steel tube, an inner steel tube and stiffened steel plates, wherein the inner steel tube is a round thin steel tube; a reinforcement cage is laid in space which is defined by the outer steel tube and the inner steel tube, and is filled with concrete; before the reinforcement cage is strapped, the stiffened steel plates are led in from two ends of a longitudinal bar in the reinforcement cage part in series in advance; the longitudinal bar is welded with the stiffened steel plates after being prestressed; measures holes are formed in the stiffened steel plates; and the stiffened steel plates are respectively welded with the outer steel tube and the inner steel tube. Compared with a traditional concrete filled steel tube column, the concrete column with the hollow steel tubes has better bearing capacity, better compressive property and better anti−seismic property, simultaneously is convenient for laying various pipelines in the concrete column, and has better technical and economic benefits.

0) US2013199868A – SOUND ABSORBING WALL

96) Family number: 54512667 (US2013199868A) © PatBase

Title: SOUND ABSORBING WALL

Priority: US20120368577 20120208 US20140480119 20140908

Family:

Publication number	Publication date	Application number	Application date
US2013199868 AA	20130808	US20120368577	20120208
US2014374952 AA	20141225	US20140480119	20140908

Probable Assignee: BERGIADIS WILLIAM LEE

Assignee(s):(std)**:** BERGIADIS WILLIAM LEE

Inventor(s):(std)**:** BERGIADIS WILLIAM LEE

International class (IPC 8–9)**:** B23P11/00 B28B1/14 B28B23/00 B28B23/02 E01F8/00 E04B1/82 E04B1/84 E04C2/06 (Advanced/Invention)

CPC: E01F8/0023 E01F8/007 B28B7/0073 B28B7/0085 B28B19/003 E01F8/0005 E04B1/8227 E04B1/84 E04C2/06 B28B1/14 B28B23/005 B28B23/02 E01F8/0029 Y10T29/4957

US class: 181/210 264/261 29/896.2 52/745.1

Classification Explorer

Cited documents: WO9300262 A1, US6494008 BA, US2916909 A, US2006188740 AA,

Abstract:
Source: US2013199868A Sound absorbing walls include a planar front panel element formed of an acoustically transmissive material and having a peripheral edge, a planar inner panel element formed of an acoustically absorbent material, having a peripheral edge, a front face abutting the front panel, and an opposed rear face, and a rigid frame having a panel portion overlaying the rear face of the inner panel element, and having a peripheral edge, and an edge portion forming a rim depending from the peripheral edge of the frame, and enclosing the peripheral edges of the front panel and inner panel. The frame may encapsulate the front panel and inner panel, except for an exposed front panel front surface. The rim may extend forward of the front panel. A sound wall may be constructed by connecting edge portions of one or more panels to spaced apart first and second ground–mounted vertical support columns.

97) Family number: 51436371 (AU2010249311A) © PatBase

Title: Foundation structure and foundation construction method

Priority: AU20100249311 20101213

Family:

Publication number	Publication date	Application number	Application date
AU2010249311 AA	20120628	AU20100249311	20101213
AU2010249311 BB	20141211	AU20100249311	20101213

Probable Assignee: SEKISUI HOUSE KK

Assignee(s):(std)**:** SEKISUI HOUSE KK

Assignee(s): SEKISUI HOUSE LTD

Inventor(s):(std)**:** HARAYAMA KOJI ; HATAE TOMOYA

Agent(s): GRIFFITH HACK

International class (IPC 8–9)**:** E02D27/01 E02D27/08 E04B1/24 (Advanced/Invention)

Classification Explorer

Cited documents: JP4108920 A2, JP2005068858 A2, JP2003147780 A2, JP2000034735 A2,

Abstract:
Source: AU2010249311A A B S T R A C T Footing beam (1) making up a strip footing made of reinforced concrete has rectangular cross−sectional shape, being taller than it is wide, and has encased therewithin pair(s) of upper and lower main reinforcements (11, 12) and stirrup(s) (13); and footing slab (2) also making up same has approximately quarter−circle fan−shaped cross−sectional shape which is convex as viewed from above where it emerges to either side at a lower portion of the footing beam (1). Surface(s) of footing slab (2), such surface(s) being convex as viewed from above, is/are formed by causing at least a portion of footing slab form(s) (20), having approximately quarter−circle arcuate cross−section, to be left in place and cast into concrete. Set within footing beam (1) are at least two paired anchor bolts (3), which are respectively encased within cylindrical sheaths (31) in such fashion as to prevent grabbing thereof by concrete, and the respective lower ends of which are linked together in integral fashion by way of anchor plate(s) (32).

98) Family number: 57911170 (CN203977587U) © PatBase

Title: CONNECTING COLUMN FOR STEEL BEAM AND REINFORCED CONCRETE COLUMN

Priority: CN201420381622U 20140711

Family:

Publication number	Publication date	Application number	Application date
CN203977587 U	20141203	CN201420381622U	20140711

Probable Assignee: HEBEI HANGXIAO STEEL STRUCTURE CO LTD

Assignee(s):(std)**:** HEBEI HANGXIAO STEEL STRUCTURE CO LTD

Assignee(s): HEBEI HANG XIAO STEEL CO ; HEBEI HANGXIAO STEEL STRUCTURE CO

Inventor(s):(std)**:** LI FENG ; SONG ZHIYUN ; WANG SEN ; WEN XIAOZHOU

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203977587U The utility model relates to a connecting column for a steel beam and a reinforced concrete column. The connecting column comprises a segment of box body which is of the same shape as a building structure column body, and a segment of joint column body is formed in the box body by filling concrete; one side face of the joint column body is fixedly connected with a bracket flange slab and steel bar connecting plates positioned above and below the bracket flange slab; a reinforced plate is arranged in the joint column body corresponding to the bracket flange slab and/or the steel bar connecting plates; the reinforced plate is partitioned into a transverse reinforced plate and a longitudinal reinforced rib; the empty planar space except the column center in the box body is filled with the transverse reinforced plate, and only a concrete pouring hole is left; the longitudinal reinforced rib is arranged on a right angle defined by one side for being fixedly connected with the bracket flange slab and/or the steel bar connecting plates of the box body and the transverse reinforced plate. Through adoption of the connecting column, joint treatment construction is simplified, dense perforation and subsequent reinforcement on a steel plate are avoided, reasonable force transfer of a structure on joints can be ensured, and the principle of strong joints is satisfied.

0) CN104179256A – RECTANGULAR CONCRETE FILLED STEEL TUBE COLUMN A...

99) Family number: 57900425 (CN104179256A) © PatBase

Title: RECTANGULAR CONCRETE FILLED STEEL TUBE COLUMN AND STEEL BEAM SINGLE–SIDE BOLT CONNECTING JOINT AND CONSTRUCTION METHOD THEREOF

Priority: CN201410468001 20140916

Family:

Publication number	Publication date	Application number	Application date
CN104179256 A	20141203	CN201410468001	20140916

Probable Assignee: UNIV FUZHOU

Assignee(s):(std)**:** FUZHOU UNIV ; UNIV FUZHOU

Inventor(s):(std)**:** HAN LINHAI ; LI DESHAN ; TAO ZHONG ; WANG ZHIBIN

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP4754347 B2, JP2004107992 A2, CN204059610 U, CN202831235 U, CN202466993 U, CN201738458 U, CN201554121 U, CN201535015 U,

Forward Citations: CN105649215, CN104895195,

Abstract:
Source: CN104179256A The invention relates to a rectangular concrete filled steel tube column and steel beam single–side bolt connecting joint and a construction method of the rectangular concrete filled steel tube column and steel beam single–side bolt connecting joint. The connecting joint comprises a rectangular steel tube column and a steel beam, an end plate is welded to the end of the steel beam and fixedly installed on the side wall of the steel tube column through fasteners, and multiple corresponding bolt holes are longitudinally formed in the end plate and the steel beam in a pairwise mode. A reinforcement structure is arranged in the joint core region of the steel tube column. Compared with the prior art, the novel connecting joint has the advantages that the bearing capacity is high, the plasticity and ductility are good, the energy–dissipation capacity is high, and the mechanical property is reliable; compared with a rigid joint where an outer reinforcement ring is adopted, the concrete filled steel tube column and steel beam single–side bolt connecting joint does not need to be welded on site, all the machining processes, except for concrete pouring, are finished in a factory, and therefore machining quality is more reliable; the concrete filled steel tube column and steel beam single–side bolt connecting joint is convenient to install on site and high in construction speed.

0) CN203947841U – JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COL...

100) Family number: 57827781 (CN203947841U) © PatBase

Title: JOINT OF HERRINGBONE COLUMN AND GROUND WIRE COLUMN OF CONCRETE FILLED STEEL TUBE FRAME

Priority: CN201420374248U 20140708

Family:

Publication number	Publication date	Application number	Application date
CN203947841 U	20141119	CN201420374248U	20140708

Probable Assignee: GANSU ELECTRIC POWER DESIGN INST

Assignee(s):(std)**:** GANSU ELECTRIC POWER DESIGN INST

Inventor(s):(std)**:** CHENG MING ; WANG SHUPING ; XI ZENGHONG ; YANG JUNFEN ; ZHANG GUANGPING

International class (IPC 8–9)**:** E04H12/12 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203947841U The utility model discloses a joint of a herringbone column and a ground wire column of a concrete filled steel tube frame. The joint of the herringbone column and the ground wire column of the concrete filled steel tube frame comprises a herringbone frame with the connected top, and a top plate is arranged on the top of the herringbone frame. The joint is characterized in that the herringbone frame is composed of two concrete filled steel tubular columns, concrete is poured into steel tubes according to the structure of the concrete filled steel tubular columns, a connecting plate is arranged at the top abutting joint of the first concrete filled steel tubular column and the second concrete filled steel tubular column, a plurality of reinforcement plates are arranged on the outer walls of the upper portions of the first and second concrete filled steel tubular columns, the top plate is welded to the first concrete filled steel tubular column, the second concrete filled steel tubular column, the connecting plate and the reinforcement plates, the steel tubes are welded to the top plate, and the tops of the steel tubes are provided with flange plates used for being connected with the ground wire column. Corrosion of the inner walls of the steel tubes is prevented after the steel tubes are filled with the concrete, and component durability is improved. The steel tubes are arranged on the top plate, and the flange plates are connected with the ground wire column, so that the construction period can be shortened, and comprehensive economic benefits are improved.

0) CN203924364U – JOINT CONNECTION STRUCTURE WITH ADDITIONAL ANGL...

101) Family number: 57748265 (CN203924364U) © PatBase

Title: JOINT CONNECTION STRUCTURE WITH ADDITIONAL ANGLE STEEL FOR PRE−STRESSED ASSEMBLY TYPE FRAME STRUCTURE

Priority: CN201420363486U 20140703

Family:

Publication number	Publication date	Application number	Application date
CN203924364 U	20141105	CN201420363486U	20140703

Probable Assignee: UNIV HEBEI UNITED

Assignee(s):(std)**:** HEBEI UNITED UNIV ; PENGDA CONSTRUCTION GROUP ; UNIV HEBEI UNITED

Inventor(s):(std)**:** DING YANG ; FU XIUYAN ; LIU RANRAN ; HAN JIANQIANG ; LIAO YONG

International class (IPC 8−9): E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104032840,

Abstract:
Source: CN203924364U The utility model discloses a joint connection structure with additional angle steel for a pre−stressed assembly type frame structure. The joint connection structure consists of three parts of a prefabricated reinforced concrete column, a prefabricated reinforced concrete beam and the angle steel, wherein a beam column seam of the prefabricated reinforced concrete column and the prefabricated reinforced concrete beam is filled with a high−strength grouting material, and an integral beam column joint is formed; the angle steel are arranged on the integral beam column joint, multiple angle steel installation holes are formed in a steel plate of the angle steel, the angle steel and the integral beam column joint are fixed by fastening pieces through the angle steel installation holes, and the joint connection structure with the additional angle steel for the pre−stressed assembly type frame structure is formed. According to the joint connection structure with the additional angle steel for the pre−stressed assembly type frame structure, disclosed by the utility model, the angle steel is arranged on the integral beam and column joint, bending deformation of the angle steel occurs at corners of the angle steel under an external action especially when an earthquake happens, meanwhile, the energy is consumed, and the effective energy consumption effect of the pre−stressed assembly type frame structure can be realized when the earthquake happens.

0) KR101457077B – ENHANCED CONCRETE–FILLED COLUMN

102) Family number: 57706662 (KR101457077B) © PatBase

Title: ENHANCED CONCRETE–FILLED COLUMN

Priority: KR20130111843 20130917

Family:

Publication number	Publication date	Application number	Application date
KR101457077 B1	20141031	KR20130111843	20130917

Probable Assignee: SAMSUNG C AND T CORP

Assignee(s):(std)**:** SAMSUNG C AND T CORP

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** JUNG JAE EUN ; KIM DONG IN ; KIM MYEONG JOONG ; KIM YOUNG RAE ; LEW YOUNG KEE ; LIM YOUNG JUN

International class (IPC 8–9): E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20090093540 A, KR20090016264 A, KR101178381 B1, KR101178381,

Forward Citations: KR101625593, KR101577704,

Abstract:
Source: KR101457077B Provided is an enhanced concrete–filled column. The concrete–filled column includes: an angular plate column (100) which an internal space (110) filled with concrete; a steel frame (200) installed in the internal space (110) along the longitudinal direction of the plate column (100); and a first reinforcing member (300) which is formed on the corners of the plate column (100) to resist the lateral pressure due to the concrete filling the internal space (110).

103) Family number: 57575940 (CN104100043A) © PatBase

Title: STEEL SKELETON–STEEL PIPE FIBER CONCRETE L–SHAPED SECTION COMPOSITE COLUMN

Priority: CN201410269012 20140617

Family:

Publication number	Publication date	Application number	Application date
CN104100043 A	20141015	CN201410269012	20140617

Probable Assignee: UNIV SHENYANG JIANZHU

Assignee(s):(std)**:** SHENYANG JIANZHU UNIV ; UNIV SHENYANG JIANZHU

Inventor(s):(std)**:** CHEN QIAN ; LYU CONGCONG ; XU YAFENG ; ZHAI ZHANGLIN ; ZHU SHAOJIE

International class (IPC 8–9): E04C3/36 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN104100043A The invention relates to a steel skeleton–steel pipe fiber concrete L–shaped section composite column, which is composed of steel skeletons, a steel pipe, a framework of steel reinforcement and fiber concrete. The steel skeletons are formed by welding of steel plates. The steel pipe is filled with concrete, a stirrup is in an L shape, and is internally wrapped with concrete. The steel skeletons are located on the limbs of the L–shaped column, the steel pipe is located in the core of the L–shaped column, and the concrete adopts fiber concrete. The limbs of the L–shaped column refer to the centers of rectangular parts, and the steel skeletons are arranged in a T shape. The core of the L–shaped column refers to the center of an L–shaped column corner. The fiber concrete is inside and outside the steel pipe, and the characteristics of the fiber material are fully utilized. The steel skeleton–steel pipe fiber concrete L–shaped section composite column provided by the invention is a main component of the frame structure in high–rise and large span buildings, and has the characteristics of high bearing capacity, high stiffness, light weight, good plasticity and toughness, good impact and fatigue resistance, excellent seismic performance, and good durability, etc.

0) WO08058702A2 – FORMWORK SYSTEM FOR CONCRETING PREFABRICATED PA...

104) Family number: 41804687 (WO08058702A2) © PatBase

Title: FORMWORK SYSTEM FOR CONCRETING PREFABRICATED PARTS, COMPRISING A FORMWORK SHELL AND A FORMWORK CORE

Priority: DE200710019406 20070423 EP20060023710 20061115 WO2007EP09799 20071113 EP20070846564 20071113

Family:

Publication number	Publication date	Application number	Application date
DE102007019406 A1	20080529	DE200710019406	20070423
DE502006013934 D1	20141009	DE200650013934T	20061115
DE502007010317 D1	20120927	DE200750010317T	20071113
EP1923185 A1	20080521	EP20060023710	20061115
EP1923185 B1	20140827	EP20060023710	20061115
EP2083977 A2	20090805	EP20070846564	20071113
EP2083977 B1	20120801	EP20070846564	20071113
WO08058702 A2	20080522	WO2007EP09799	20071113
WO08058702 A3	20080731	WO2007EP09799	20071113

Probable Assignee: RATEC MASCHINENENTWICKLUNGS UN

Assignee(s):(std)**:** RATEC MASCHINENENTWICKLUNGS U VERWALTUNGS GMBH ; RATEC MASCHINENENTWICKLUNGS UN ; RATEC MASCHINENENTWICKLUNGS UND VERWALTUNGS GMBH ; REYMANN ANDREAS

Inventor(s):(std)**:** REYMANN ANDREAS

Agent(s): DURM AND PARTNER PATENTANWAELTE; DURM FRANK ET AL; DURM FRANK; PETIRSCH MARKUS; PETIRSCH MARKUS ET AL

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B28B1/24 B28B21/38 B28B7/00 B28B7/22 B28B7/30 F16K3/00 (Advanced/Invention); B28B7/22 (Core/Invention)

CPC: B28B7/0008 B28B7/22 B28B1/24 B28B7/30 E04G11/02 E04G21/0472

European class: B28B1/24 B28B7/00A3 B28B7/22 B28B7/30 E04G11/02 L28B1/24

Classification Explorer

Cited documents: US6395213 BA, US5573348 A, US5520531 A, US5169652 A, US4059376 A, US3853452 A, US3574905 A, FR2619047 A1, FR2310454 A1, EP0382536 A1,

Forward Citations: WO14020009, WO10071908, WO08128916, NL1037624, DE102007019383, DE102007019383,

Abstract:
Disclosed is a formwork system (1) for concreting room modules (21) and prefabricated concrete parts, comprising a formwork shell (2) and a formwork core (3). The formwork shell encompasses a formwork bottom (6), two longitudinal walls (4), and two front walls (5) that are arranged at the front ends of the longitudinal walls. The formwork core can be inserted into the formwork shell and comprises a horizontal element (10) that is designed as a bottom (11) and a horizontal element (10) which is designed as a covering element (12). Two front elements (14) and two lateral elements (15) are designed as vertical elements (13). The horizontal elements (10) and the vertical elements (13) are disposed such that a cuboidal hollow interior is formed within the formwork core (3). The front elements (14) and the lateral elements (15) are each coupled and movably connected to the bottom (11) and the covering element (12). A coupling mechanism (31) is designed such that a vertical outward movement of a horizontal element (10) causes the vertical elements (13) to be moved inward, thus reducing the distance between the opposite front elements (14) and the opposite lateral elements (15).

0) CN203867072U – SPACE STRESS SHEAR KEY FOR CONCRETE FILLED STEE...

105) Family number: 57546021 (CN203867072U) © PatBase

Title: SPACE STRESS SHEAR KEY FOR CONCRETE FILLED STEEL TUBULAR COLUMN

Priority: CN201420156976U 20140402

Family:

Publication number	Publication date	Application number	Application date
CN203867072 U	20141008	CN201420156976U	20140402

Probable Assignee: SHANDONG TONGYUAN DESIGN GROUP CO LTD

Assignee(s):(std)**:** SHANDONG TONGYUAN DESIGN GROUP CO LTD

Assignee(s): DESIGN GROUP CO LTD SHANDONG SAME ROUND ; SHANDONG TONGYUAN DESIGN GROUP CO

Inventor(s):(std)**:** HUANG XIANGHAI

International class (IPC 8–9): E04C3/36 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203867072U The utility model discloses a space stress shear key for a concrete filled steel tubular column. The shear key is formed on the inner edge of a column soleplate on the periphery of a grouting hole through a weld–all–around steel plate or a steel tube; the weld–all–around steel plate or the steel tube stretches into a concrete anchoring component. According to the utility model, a special compensation method is adopted for the column soleplate of the concrete filled steel tubular column, namely, the periphery of the grouting hole is reinforced through the steel plate with space mechanical performance. Closing is achieved through the steel plate, and the steel plate stretches into the concrete anchoring component at the bottom at a certain length. When the concrete is poured, the interior of the space stress shear key in the concrete–filled steel tube is poured with concrete, therefore, when the shear key is stressed, effective delivery of the column shearing force is ensured, namely, the small concrete filled steel tubular column is adopted in the middle of the column soleplate for shearing resistance, meanwhile, the hole in the soleplate is reinforced, and a good stress effect is achieved.

0) US2008098687A – SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HI...

106) Family number: 41770225 (US2008098687A) © PatBase

Title: SUPER UNITIZED POST TENSION BLOCK SYSTEM FOR HIGH HIGH STRENGTH MASONRY STRUCTURES – WITH SUPERSTRONGBLOKS

Priority: US20060854913P 20061027 US20070925302P 20070419 US20070977470 20071025 WO2007US82488 20071025

Family:

Publication number	Publication date	Application number	Application date
AU2007317627 AA	20080515	AU20070317627	20071025
CA2667658 AA	20090427	CA20072667658	20071025
CA2667658 C	20131001	CA20072667658	20071025
CN101611202 A	20091223	CN200780046836	20071025
EP2074267 A2	20090701	EP20070854412	20071025
IL198399 A0	20100217	IL20070198399	20071025
IN02814DN2009 A	20090619	IN2009DN02814	20090428
JP2010508453 T2	20100318	JP20090534851T	20071025
KR20090076991 A	20090713	KR20097010754	20071025
MX2009004524 A1	20090619	MX20090004524	20071025
RU2009119974 A	20101210	RU20090119974	20071025
US2008098687 AA	20080501	US20070977470	20071025
US8850763 BB	20141007	US20070977470	20071025
WO08057778 A2	20080515	WO2007US82488	20071025
WO08057778 A3	20081106	WO2007US82488	20071025

Probable Assignee: PATRICIA MARSH

Assignee(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F ; ROGER MARSH ; PATRICIA MARSH ; PATRICIA M MARSH ; ROGER F MARSH

Assignee(s): 3B CONSTRUCTION SOLUTIONS INC ; BOLT A BLOK INC ; MARSH ROGER F ; MARSH PATRICIA M

Inventor(s):(std)**:** MARSH PATRICIA M ; MARSH ROGER F

Inventor(s): PATRICIA M MARSH ; ROGER F MARSH ; MARSH ROGER ; MARSH PATRICIA

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BENNETT JONES LLP; EVENS PAUL JONATHAN; RITCHISON LAW OFFICES PC JOHN D RITCHISON; BRANNON SOWERS AND CRACRAFT; KRAMER LESLIE P

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04C5/08 E04H5/00 E04H5/08 F16B17/00 (Advanced/Invention); E02D27/00 E02D29/02 E04B1/02 E04B2/02 E04C1/00 E04C2/04 E04C3/30 E04H5/00 F16B17/00 (Core/Invention); E04B (Subclass/Invention)

International class (IPC 1–7): E04B1/02

CPC: E04B2/16 E04B2002/0254

European class: E04B2/16 P04B2/02M3E

US class: 411/84 52/223.7 52/293.2 52/606

Classification Explorer

Cited documents: US962463 A, US952305 A, US6915614 BB, US6691471 BB, US6427390 BA, US6244785 BA, US6178714 BA, US6178714 B1, US6167669 BA, US6167669 B1, US6098357 A, US5950319 A, US5809732 A, US5511902 A, US4640071 A, US3763609 A, US3296758 A, US2963828 A, US2007186502 AA, US2007107333 AA, US2007017176 AA, US2006168906 AA, US2004020145 AA, US1892605 A, US1753451 A, JPS55160459 U, JP6040146 U1, JP55160459 U1, JP4020632 A2, JP2002081152 A2, JP2002030682 A2,

Forward Citations: WO11143248, US9523201, US9328501, US9045877, US8931223, US8893447, US8225578, US2016169526, US2014130434, US2013212965, US2013129444, US2011167749, ITBO20110240, CN102605876, CN102605876,

Abstract:
Source: US2008098687A An improved, high strength construction system that uses post tensioning. It is comprised of a series of interconnected, super heavy duty hollow core blocks 102 with minimal ducts 103, a series of tendons 105, and a plurality of anchors or plates 104 with additional features. The system 101 is configured with the plurality of adjacent blocks 102 contiguous and touching one another and demountably coupled to each other by means of the tendons 105 and anchors 103. The unique features include a strong, durable full plate 104 and bolt 105 both of which may be treated for corrosion resistance. This new coupling results in a structure that is far stronger than an ordinary block structure built with mortar and standard reinforcing. The SYSTEM has more predictable and controlled strength which is stronger than most reinforced concrete systems.

107) Family number: 57214146 (CN203782979U) © PatBase

Title: FRP STIFFENING CONCRETE FILLED STEEL TUBE COMPOSITE COLUMN

Priority: CN201420158682U 20140402

Family:

Publication number	Publication date	Application number	Application date
CN203782979 U	20140820	CN201420158682U	20140402

Probable Assignee: UNIV HARBIN ENG

Assignee(s):(std)**:** HARBIN ENGINEERING UNIV ; UNIV HARBIN ENG

Inventor(s):(std)**:** GAO DIANWEI ; HUANG KE ; ZHANG JIANHUA

International class (IPC 8–9)**:** E04C3/36 E04C5/07 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103899040, CN103899040,

Abstract:
Source: CN203782979U The utility model provides an FRP (Fiber Reinforced Plastic) stiffening concrete filled steel tube composite column. The FRP stiffening concrete filled steel tube composite column comprises a steel tube, a stirrup, an FRP stiffening rib and a longitudinal reinforcement; the stirrup and the FRP stiffening rib are arranged in the steel tube; a steel angle is fixed on the inner wall of the steel tube; the end part of the FRP stiffening rib is fixed on the steel angle; a hole is formed in the FRP stiffening rib; the stirrup passes through the hole in the FRP stiffening rib; the longitudinal reinforcement is fixed on the stirrup; the steel tube is filled with concrete. The FRP stiffening rib plate with the stirrup and the longitudinal reinforcement is arranged in the FRP stiffening concrete filled steel tube composite column to divide the concrete again, and therefore, the effect of restraint of the concrete is enhanced, the bearing capacity is improved and the tube wall at the stressed side can be effectively prevented from buckling. The FRP stiffening concrete filled steel tube composite column is a structure measure for enhancing the cooperative work of the concrete, the FRP stiffening rib and the steel tube; the FRP stiffening concrete filled steel tube composite column is simple structure and convenient to construct, has the characteristics of light weight, high bearing capacity, good ductility and good shock resistance.

0) US2005048168A – STARCH FOR FROZEN DESSERTS

108) Family number: 31716133 (US2005048168A) © PatBase

Title: STARCH FOR FROZEN DESSERTS

Priority: CO20040084120 20040827 US20030498834P 20030829 US20040926555 20040826 US20030511765P 20031016 US20040926555P 20040826

Family:

Publication number	Publication date	Application number	Application date
AR045535 AA	20051102	AR2004P103113	20040830
AT494793 E	20110115	AT20040020539T	20040830
AU2004205333 AA	20050317	AU20040205333	20040830
AU2004205333 BB	20091105	AU20040205333	20040830
BRPI0405051 A	20051011	BR2004PI05051	20040830
CL2004002205 A1	20060210	CL20040002205	20040830
CN1600145 A	20050330	CN200410085181	20040828
CN1600145 B	20130327	CN200410085181	20040828
CO5570100 A1	20051031	CO20040084717	20040830
CO5570100 A1	20051031	CO20040084120	20040827
CO5570100 A1	20051031	CO20040084717	20040830
CO5570100 A1	20051031	CO20040084120	20040827
CO5570100 A1	20051031	CO20040084717	20040830
DE602004030978 D1	20110224	DE200460030978T	20040830
EP1510134 A2	20050302	EP20040020539	20040830
EP1510134 A3	20050323	EP20040020539	20040830
EP1510134 B1	20110112	EP20040020539	20040830
JP2005095170 A2	20050414	JP20040250965	20040830
JP4763257 B2	20110831	JP20040250965	20040830
KR20050022957 A	20050309	KR20040068629	20040830
SG109598 A1	20050330	SG20040004851	20040830
TH41094 B	20140813	TH20041003331	20040827
TH71693 A	20051103	TH20041003331	20040827
US2005048168 AA	20050303	US20040926555	20040826
ZA200406883 A	20050624	ZA20040006883	20040830

Probable Assignee: BRUNOB II BV

Assignee(s):(std)**:** BRUNOB II BV ; NAT STARCH CHEM INVEST ; NATIONAL STARCH AND CHEMICAL INVESTMENT HOLDING CORP

Assignee(s): NATL STARCH AND CHEM INVESTMENT HOLDING CORP ; LIU YAYUN ; WHALEY JUDITH ; NATIONAL STARCH AND CHEMICAL INVESTMENT HOLDING CO ; CORN PRODUCTS DEVELOPMENT INC ; GUILLERMO ANTONIO CARDONA MORENO ; KOXHOLT SUSANNE ; NATIONAL STARCH AND CHEMICAL INVESTMENT

Inventor(s):(std)**:** JUDITH K WHALEY ; JUDITH WHALEY ; KOXHOLT SUSANNE ; LIU YAYUN ; SUSANNE KOXHOLT ; WHALEY JUDITH ; WHALEY JUDITH K ; YAYUN LIU

Inventor(s): GUILLERMO ANTONIO CARDONA MORENO

Agent(s): FISHER ADAMS KELLY CALLINANS; CALLINANS; ALESSANDRI; GUILLERMO ANTONIO CARDONA MORENO; DILIA MARIA RODRIGUEZ DALEMAN; HELD STEPHAN; CHARLES W ALMER NATIONAL STARCH AND CHEMICAL CO

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

International class (IPC 8–9): A23G1/00 A23G9/00 A23G9/02 A23G9/04 A23G9/32 A23G9/34 A23G9/44 A23G9/52 A23L1/0522 A23L1/195 F04B47/00 (Advanced/Invention); A23G9/00 A23G9/34 (Advanced/Non–invention);

	A23G1/00 A23G9/00 A23G9/04 A23G9/32 A23G9/34 A23G9/44 A23G9/52 A23L1/0522 (Core/Invention); A23L (Subclass/Invention)
International class (IPC 1–7):	A23G1/00 A23G9/00 A23G9/02 A23G9/04 A23G9/34 A23L1/0522 A23L1/195 C08L3/02
CPC:	A23L29/212 A23L29/219 A23G9/34 A23G9/52 A23G2200/06
European class:	A23G9/02 A23G9/02+D6 A23G9/34 A23G9/52 A23L1/0522 A23L1/0522B K23G200/06
US class:	426/100 426/100P 426/658 426/658S
Classification Explorer	
Cited documents:	WO03015530 A1, US5711986 A, US5562937 A, US5358728 A, US5175013 A, US5171602 A, US4977252 A, US4510166 A, US4452824 A, US4374154 A, US4264637 A, US4244981 A, US2003108649 AA, JP9187234 A2, JP6189699 A2, JP4248958 A2, JP2002306079 A2, EP1076067 A1, EP0784935 A2,
Forward Citations:	WO16062617, WO16062616, WO11083884, WO10069727, US9591866, US9339050, US2014302215, US2007031565, EP2196096,

Abstract:
Source: US2005048168A Use of starch(es) and starch derivatives in frozen desserts for improved meltdown and shape retention, including reduced expansion and contraction of the frozen dessert when transported at high altitudes, e.g., over mountain ranges. These improved characteristics are retained in the frozen dessert even after multiple heat shock cycling. The starch(es) and starch derivatives inhibit ice crystal formation in frozen after heat shock cycling.

0) US2009107065A – BUILDING CONSTRUCTION FOR FORMING COLUMNS AND B...

109) Family number: 43198191 (US2009107065A) © PatBase

Title: BUILDING CONSTRUCTION FOR FORMING COLUMNS AND BEAMS WITHIN A WALL MOLD

Priority: US20070000112P 20071024 US20080137224P 20080729 US20080231875 20080908 US20090208224P 20090223 US20090456707 20090622 US20090456707 20090722 WO2009US04335 20090727 US20110628044P 20111024 US20110629442P 20111118 US20120398243 20120216 US20120400103 20120219 US20120398168 20120217 US20120437707 20120402 US20120437630 20120402

Family:

Publication number	Publication date	Application number	Application date
AU2009277150 AA	20100204	AU20090277150	20090727
IN00351MN2011 A	20110826	IN2011MN00351	20110223
US2009107065 AA	20090430	US20080231875	20080908
US2010058700 AA	20100311	US20090456707	20090622
US2012144765 AA	20120614	US20120398243	20120216
US2012144767 AA	20120614	US20120400103	20120219
US2012174512 AA	20120712	US20120398168	20120217
US2012186174 AA	20120726	US20120437630	20120402
US2012186180 AA	20120726	US20120437707	20120402
US8161699 BB	20120424	US20090456707	20090622
US8176696 BB	20120515	US20080231875	20080908
US8671637 BB	20140318	US20120400103	20120219
US8756889 BB	20140624	US20120398168	20120217
US8763331 BB	20140701	US20120437630	20120402
US8800227 BB	20140812	US20120437707	20120402
WO10014192 A1	20100204	WO2009US04335	20090727

Probable Assignee: LEBLANG DENNIS WILLIAM

Assignee(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Assignee(s): DENNIS LEBLANG

Inventor(s):(std)**:** LEBLANG DENNIS ; LEBLANG DENNIS WILLIAM

Inventor(s): DENNIS LEBLANG

Agent(s): BAXTER IP; BAXTER PATENT ATTORNEYS PTY LTD; DENNIS LEBLANG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/16 E04B1/18 E04B1/38 E04B1/64 E04B2/00 E04B2/08 E04B2/30 E04B2/32 E04B2/76 E04B2/84 E04B2/86 E04C1/42 E04C2/10 E04C2/20 E04C2/52 E04C3/09 E04G11/06 E04G9/00 (Advanced/Invention); E04B2/86 E04C3/04 (Advanced/Non–invention); E04B1/18 E04B2/04 E04G11/00 E04G9/00 (Core/Invention)

CPC: E04B1/164 E04B2/7412 E04B1/80 E04B2/58 E04B1/14 E04B1/165 E04B2/763 E04B2/8617 E04B2/8635 E04B2/8641 E04B2/8647 E04C3/09 E04C2003/0473

European class: E04B1/14 E04B1/16C E04B1/16D E04B1/80 E04B2/58 E04B2/76C1 E04C3/09 P04B2/74C2P P04B2/86E1 P04B2/86G P04B2/86G1 P04B2/86H P04C3/04S3U

US class: 249/19 249/192 249/192S 249/19S 52/220.1 52/220.100P 52/220.2 52/220.200P 52/252 52/252P 52/302.1 52/302.100P 52/309.11 52/309.12 52/309.4 52/309.400S 52/426 52/426P 52/426S 52/439 52/439P 52/479 52/479S 52/506.05 52/506.050P 52/588.1 52/588.100S 52/698 52/698S 52/762 52/762S

Cited documents: US8161699 BB, US8109058 BB, US8037652 BB, US7908807 BB, US7790302 BB, US7681368 BA, US7666258 BB, US7415805 BB, US7409800 BB, US7395999 BB, US7308778 BB, US7278244 BA, US7254925 BB, US7232605 BB, US7231746 BB, US7185467 BB, US7162845 BB, US7077988 BB, US7028440 BB, US7028439 BB, US6988347 BB, US6978581 BA, US6952905 BB, US6935081 BB, US6880304 BA, US6869669 BB, US6851235 BB, US6837013 BB, US6817151 BB, US6754995 BA, US6729094 BA, US6708459 BB, US6701684 BB, US6698710 BA, US6681539 BB, US6662516 BB, US6647686 BB, US6609340 BB, US6588168 BB, US6584742 BA, US6568138 BA, US6564521 BA, US6541097 BB, US6523312 BB, US6519904 BA, US6481178 BB, US6438918 BB, US6430890 BA, US6408594 BA, US6401417 BA, US6378260 BA, US6355193 BA, US6308491 BA, US6293067 BA, US6269608 BA, US6263628 BA, US6256960 BA, US6250033 BA, US6247280 BA, US6240692 BA, US6167624 BA, US6167624 B1, US6164035 A, US6151858 A, US6134861 A, US6131365 A, US6125608 A, US6122888 A, US6119432 A, US6044603 A, US6041562 A, US6041561 A, US6026620 A, US5992114 A, US5950389 A, US5943775 A, US5864993 A, US5842314 A, US5842276 A, US5839249 A, US5819496 A, US5809726 A, US5809724 A, US5758463 A, US5722198 A, US5655350 A, US5638651 A, US5628158 A, US5596860 A, US5566518 A, US5526629 A, US5524400 A, US5505031 A, US5497589 A, US5381635 A, US5365716 A, US5353560 A, US5335472 A, US5279091 A, US5279088 A, US5207045 A, US5138813 A, US5062250 A, US4930278 A, US4909007 A, US4889310 A, US4813193 A, US4774794 A, US4744185 A, US4724794 A, US4703602 A, US4602467 A, US4357783 A, US4338759 A, US3678638 A, US2008127607 AA, US2008066408 AA, US2007278381 AA, US2007227086 AA, US2007199266 AA, US2007062134 AA, US2007044392 AA, US2006260267 AA, US2006251851 AA, US2004068948 AA, US2003106280 AA, US2001027630 AA, US1892605 A, US1850402 A,

Forward Citations: WO16032537, WO14128047, WO14059546, WO12092108, WO11127522, US9677285, US9617724, US9611656, US9598891, US9593491, US9574347, US9566742, US9534397, US9512621, US9493940, US9469984, US9464444, US9464443, US9422713, US9388566, US9382709, US9340966, US9328506, US9324730, US9322162, US9316006, US9267294, US9260869, US9255414, US9222261, US9157233, US9115503, US9115500, US9097016, US9091068, US9074369, US9068350, US9038343, US9032685, US9016027, US8997421, US8978334, US8978331, US8950130, US8875465, US8863463, US8839580, US8776468, US8769891, US8756890, US8661762, US8631623, US8621798, US8615952, US8607523, US8601761, US8578675, US8544233, US8375670, US8375669, US8359799, US8307598, US8276332, US2017121958, US2017067245, US2015354205, US2015300018, US2015267393, US2015218831, US2015001764, US2014332658, US2014250828, US2014165490, US2014150368, US2014116000, US2014115991, US2014115989, US2014115988, US2014109503, US2014069040, US2014059963, US2014059958, US2014000199, US2013326984, US2013295338, US2013273310, US2013192161, US2013180190, US2013118104, US2013074432, US2013036688, US2012285108, US2012231231, US2012227346, US2012225236, US2012144765, US2012124927, US2012096785, US2012040135, US2012036803, US2011302875, US2011220966, US2011113724, US2011091679, US2011036048, US2011036046, US2010176525, US2010058686, US2010005746, US2009282759, US2009277119, US2009064619, RU2610951, ITVI20100078, FR3002251, CN105569255, CN103758249, CN103031905, CN102587502,

Abstract:
Source: US2009107065A The present invention relates to an improved wall system where a wall form mold has a structural insulated core assembled to form a structural insulated panel (SIP) to form a concrete beam and concrete column to be poured anywhere within the wall as well as between building modules when placed together and erected vertically. The interlocking wall molds interlock within the wall as well as between panels and modules. The wall panels allow concrete columns and beams to be formed in any size and shape. The structural insulated core consists of interlocking foam spacers and support channels which can be glued or screwed together to form an independent wall or as part of a precast wall with columns and beams integrated within the wall panels. Insulated flanges within the wall forming mold separates the wall forming structure from the wall surfaces.

0) KR101428539B – REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE ...

110) Family number: 57142007 (KR101428539B) © PatBase

Title: REFORMED CONCRETE FILLED TUBE COLUMN STRUCTURE

Priority: KR20140064353 20140528

Family:

Publication number	Publication date	Application number	Application date
KR101428539 B1	20140811	KR20140064353	20140528

Probable Assignee: SAMSUNG C AND T CORP

Assignee(s):(std)**:** SAMSUNG C AND T CORP

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** JUNG YOUNG DOO ; KIM DAE JOONG ; KIM DONG IN ; KIM JAE HO ; KIM JAE WON ; KIM MOON SUP ; KIM MYEONG JOONG ; LEE EUN SEOK ; LEW YOUNG KEE ; NOH HYUN SUP

International class (IPC 8–9): E04B1/30 E04C3/34 E04C5/06 (Advanced/Invention)

Classification Explorer

Cited documents: KR20130142755 A, KR20130012898 A,

Forward Citations: KR101636471, KR101577704,

Abstract:
Source: KR101428539B The present invention provides a reformed concrete filled column having a central member comprising a rectangular plate column (100) having an inner space (110) filled with concrete; a central member (200) mounted on the inner space (110) in the longitudinal direction of the plate column (100); and an edge reinforcing member (300) formed at the edge of the plate column (100) to resist lateral pressure by the concrete which fills the inner space (110). The central member (200) includes a plurality of column steel frames (210) formed at edges of the inner space (110); and connection steel frames (220) of which both ends are connected to the column steel frames (210). The column steel frames (210) are formed in the longitudinal direction of the column (100), and the connection steel frames (220) are formed at predetermined intervals in the longitudinal direction of the plate column (100). The reformed concrete filled column according to the present invention can secure structural stability of the concrete filled column of the large diameter.

0) CN103938734A – COMBINATION JOINT OF CONCRETE BEAM AND RECTANGU...

111) Family number: 56955857 (CN103938734A) © PatBase

Title: COMBINATION JOINT OF CONCRETE BEAM AND RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN CONNECTED THROUGH PRE–STRESSED STEEL BARS AND COMMON STEEL BARS

Priority: CN201410149381 20140414

Family:

Publication number	Publication date	Application number	Application date
CN103938734 A	20140723	CN201410149381	20140414

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Inventor(s):(std)**:** LI ZHENBAO ; MA HUA ; SONG KUN ; WANG WENJING ; XIE YONGPING

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP8113984 A2, CN203174771 U, CN103132602 A, CN101798849 A, CN101029503 A,

Abstract:
Source: CN103938734A The invention discloses a combination joint of a concrete beam and a rectangular concrete filled steel tubular column connected through pre–stressed steel bars and common steel bars, and belongs to the technical field of building structures. The combination joint comprises the rectangular concrete filled steel tubular column, the reinforced concrete beam, pre–stressed steel bars, steel plates and channel steel. The rectangular concrete filled steel tubular column and the reinforced concrete beam are both cast in place; the rectangular concrete filled steel tubular column and the reinforced concrete beam are connected through the pre–stressed steel bars and the common steel bars; a hole channel is reserved in the cross section, connected with the reinforced concrete beam, of the rectangular concrete filled steel tubular column, and a metal corrugated pipe is pre–buried in the hole channel; the steel plates are welded to the cross section, connected with the reinforced concrete beam, of the rectangular concrete filled steel tubular column, and corresponding holes are formed in the steel plates; the channel steel is welded onto a rectangular steel pipe. The combination joint is high in construction speed, the anti–shear bearing capacity of the joint can be effectively increased, the connecting performance of the joint is enhanced and the application prospects are wide.

0) CN103938732A – COMBINATION JOINT OF PREFABRICATED CONCRETE BEA...

112) Family number: 56955146 (CN103938732A) © PatBase

Title: COMBINATION JOINT OF PREFABRICATED CONCRETE BEAM AND RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN CONNECTED THROUGH PRE−STRESSED STEEL BARS AND COMMON STEEL BARS

Priority: CN201410146967 20140414

Family:

Publication number	Publication date	Application number	Application date
CN103938732 A	20140723	CN201410146967	20140414

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Inventor(s):(std)**:** LI ZHENBAO ; MA HUA ; SONG KUN ; WANG QIANQIAN ; XIE YONGPING

International class (IPC 8−9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: KR101371198 B1, JP2013087414 A2, CN2797476 Y, CN2436578 Y, CN202131678 U, CN1554839 A, CN101914952 A,

Abstract:
Source: CN103938732A The invention discloses a combination joint of a prefabricated concrete beam and a rectangular concrete filled steel tubular column connected through pre−stressed steel bars and common steel bars, and belongs to the technical field of building structures. The combination joint comprises the rectangular concrete filled steel tubular column, the reinforced concrete beam, the pre−stressed steel bars, steel plates and channel steel. The rectangular concrete filled steel tubular column and the reinforced concrete beam are both prefabricated; a hole channel is reserved in the cross section, corresponding to the rectangular concrete filled steel tubular column, of the prefabricated concrete beam, and a metal corrugated pipe is pre−buried in the hole channel; the steel plates are welded to the cross section, connected with the reinforced concrete beam, of the rectangular concrete filled steel tubular column; the channel steel is welded onto a rectangular steel pipe, the common steel bars, the pre−stressed steel bars and tension pre−stressed steel bars penetrate through the metal corrugated pipe backwards; after tension is completed, hole channel grouting is completed within forty right hours, and therefore the beam and the column form a whole. The combination joint is high in construction speed, the anti−shear bearing capacity of the joint can be effectively increased, the connecting performance of the joint is enhanced and the application prospects are wide.

0) CN103924682A – CIRCULAR CONCRETE–FILLED STEEL TUBULAR COLUMN N...

113) Family number: 56902170 (CN103924682A) © PatBase

Title: CIRCULAR CONCRETE–FILLED STEEL TUBULAR COLUMN NODE OF UNBONDED PRE–STRESSING CONNECTING CONCRETE BEAM

Priority: CN201410151344 20140414

Family:

Publication number	Publication date	Application number	Application date
CN103924682 A	20140716	CN201410151344	20140414

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Inventor(s):(std)**:** CHEN YIBO ; LI ZHENBAO ; SONG KUN ; XIE YONGPING ; ZHOU HONGYU

International class (IPC 8–9)**:** E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: US3268252 A, CN2797476 Y, CN2436578 Y, CN103132602 A, CN101798849 A, CN101769011 A,

Abstract:
Source: CN103924682A The invention relates to a circular concrete–filled steel tubular column node of an unbonded pre–stressing connecting concrete beam, and belongs to the technical field of building structures. The circular concrete–filled steel tubular column node comprises a circular concrete–filled steel tubular column, a reinforced concrete beam, unbonded pre–stressing tendons, an annular plate and channel steel. The circular concrete–filled steel tubular column and the reinforced concrete beam are both formed in a cast–in–situ mode and connected through the unbonded pre–stressing tendons; a hole way is reserved in the connecting position of the circular concrete–filled steel tubular column and the reinforced concrete beam, and a metal corrugated pipe is embedded in the hole way; the annular plate is welded to the connecting position of the circular concrete–filled steel tubular column and the reinforced concrete beam, and a corresponding hole is formed in the annular plate; the channel steel is welded to a circular steel tube. By means of the circular concrete–filled steel tubular column node, the site welding technology is not needed, the reliability of node connection can be guaranteed, the node has the good shock resistance, the node connecting mode can be used for side column nodes in the structure and can also be used for middle column nodes, and the application prospect is wide.

0) CN103924678A – PRECAST CONCRETE BEAM AND ROUND CONCRETE–FILLED...

114) Family number: 56901935 (CN103924678A) © PatBase

Title: PRECAST CONCRETE BEAM AND ROUND CONCRETE–FILLED STEEL TUBE COLUMN COMBINING JOINT EMPLOYING UNBONDED PRESTRESSED AND ORDINARY REINFORCEMENT FOR CONNECTION

Priority: CN201410149372 20140414

Family:

Publication number	Publication date	Application number	Application date
CN103924678 A	20140716	CN201410149372	20140414

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std)**:** BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Inventor(s):(std)**:** LI ZHENBAO ; MA HUA ; SONG KUN ; WANG QIANQIAN ; XIE YONGPING

International class (IPC 8–9): E04B1/41 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: JP2000144906 A2, CN2797476 Y, CN2436578 Y, CN103132602 A, CN101798849 A, CN101769011 A, CN101550728 A,

Abstract:
Source: CN103924678A The invention relates to a precast concrete beam and round concrete–filled steel tube column combining joint employing unbonded prestressed and ordinary reinforcement for connection and belongs to the technical field of building structures. Both a round concrete–filled steel tube column and a reinforced concrete beam are precast. The parts, corresponding to the beam section, of the precast reinforced concrete beam and the round concrete–filled steel tube column are provided with ducts in which metal bellows are embedded. Ring plates are welded at the connection of the round concrete–filled steel tube column and the reinforced concrete beam. Steel channels are welded on the round concrete–filled steel tube column. Ordinary rebars and prestressed rebars are passed through the metal bellows, and the prestressed rebars are tensioned so that the beam and the column are integrated. The precast concrete beam and round concrete–filled steel tube column combining joint employing unbonded prestressed and ordinary reinforcement for connection has the advantages that construction speed is high, the field welding process is not required, joint connection reliability can be guaranteed, seismic performance is good, and the joint has promising application prospect.

0) US2012159873A – COMPOSITE CONNECTION FOR A WIND TURBINE TOWER S...

115) Family number: 47638699 (US2012159873A) © PatBase

Title: COMPOSITE CONNECTION FOR A WIND TURBINE TOWER STRUCTURE

Priority: EP20090160871 20090521 WO2010EP56760 20100518

Family:

Publication number	Publication date	Application number	Application date
CN102439250 A	20120502	CN201080021946	20100518
CN102439250 B	20140709	CN201080021946	20100518
DE602009014080 D1	20130516	DE200960014080T	20090521
DK2253781 T3	20130617	DK20090160871T	20090521
EP2253781 A1	20101124	EP20090160871	20090521
EP2253781 B1	20130320	EP20090160871	20090521
ES2415205 T3	20130724	ES20090160871T	20090521
IN09345DN2011 A	20130118	IN2011DN09345	20111129
KR20120093062 A	20120822	KR20117028012	20100518
US2012159873 AA	20120628	US20100318571	20100518
US8511044 BB	20130820	US20100318571	20100518
WO10133558 A1	20101125	WO2010EP56760	20100518

Probable Assignee: ALSTOM RENEWABLE TECHNOLOGIES

Assignee(s):(std)**:** ECOTECNIA EN RENOVABLES S L ; GARCIA GOMEZ NURIA ; FISAS CAMANES ALBERT ; ALSTOM WIND SLU ; ALSTOM WIND SL ; ECOTECNIA EN RENOVABLES SL ; PUIGCORBE PUNZANO JORDI ; GONZALEZ DEL EGIDO ALBERTO ; ALSTOM WIND S L U

Assignee(s): ECOTECNIA ENERGIAS RENOVABLES SL ; ECOTECNIA ENERGIAS RENOVABLES S L ; ALSTOM HYDRO ESPANA SLU ; ALSTOM RENEWABLE TECHNOLOGIES ; ALSTOM RENOVABLES ESPANA SL

Inventor(s):(std)**:** ALBERT FISAS CAMANES ; ALBERTO GONZALEZ DEL EGIDO ; FISAS CAMANES ALBERT ; GARCIA GOMEZ NURIA ; GONZALEZ DEL EGIDO ALBERTO ; JORDI PUIGCORBE PUNZANO ; NURIA GARCIA GOMEZ ; PUIGCORBE PUNZANO JORDI

Inventor(s): PUIGCORBE PUNZANO JORDI 08005 ; NURIA GARCIA ; ALBERT FISAS ; GONZALEZ DEL EGIDO ALBERTO 08005 ; JORDI PUIGCORBE ; GARCIA GOMEZ NURIA 08005 ; FISAS CAMANES ALBERT 08005 ; ALBERTO GONZALEZ

Agent(s): ZBM PATENTS; ZBM Patents; ZEA BERNABE; SQUIRE SANDERS US LLP; ZBM PATENTS ZEA BARLOCCI AND MARKVARSDSEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/38 E04B2/34 E04C3/00 E04G13/02 E04G21/02 E04H12/00 E04H12/08 E04H12/12 F03D11/04 (Advanced/Invention); F03D11/04 (Advanced/Non–invention)

CPC: E04H12/08 E04H12/12 F05B2230/60 F05B2240/912 Y02E10/728

European class: E04H12/08 E04H12/12 R05B230/60 R05B240/912 Y02E10/72N

US class: 249/48 249/48S 52/40 52/426 52/426S 52/651.01 52/651.010S 52/745.17 52/745.170S 52/831 52/836 52/845 52/98 52/98P

Classification Explorer

Cited documents: WO09048955 A1, WO08087181 A1, WO08031912 A1, WO07095940 A1, WO05015013 A1, WO05005752 A1, WO04083633 A1, WO04031578 A1, WO03069099 A1, WO03048570 A1, WO0238891 A1, US904841 A, US7802412 BB, US7464512 BA, US6957518 BA, US6467233 BA, US6157088 A, US3793797 A, US3793794 A,

US2007006541 AA, US2006156681 AA, US2005072067 AA, US2004098935 AA, JP9195584 A2, JP2007321710 A2, JP2005220715 A2, JP2003147864 A2, GB611907 A, FR802324 A, FR2586737 A3, EP1876316 A1, EP1624137 A1, EP0960986 A2, DE3900432 A1, DE2650085 A1, DE20013774 U1, DE20013774 U, DE19832921 A1, DE19802210 A1, DE10230273 B3,

DE102005014025 A1

CN1759242 A, CN1580548 A, CH251994 A, BE472223 A,

Forward Citations: WO16189083, WO12101088, US9032674, US8713892, ES2543371, EP2479430, DE102015209686, CN103328820, CN103328820, CN103015787, CN103015787,

Abstract:
Source: US2012159873A A tower section for a wind turbine tower structure comprises at least two shell segments defining, in an assembled condition, a substantially hollow structure, and including first connecting means for mutually joining two adjacent shell segments along a joint, which comprise a column of concrete arranged overlapping at least part of the joint between adjacent shell segments. A method for building a tower section for a wind turbine tower structure and a wind turbine comprising a nacelle having rotatable blades and a vertical tower made of at least one of such tower sections are further provided.

0) WO14105004A1 – ACCURATE BUOYANCY CONTROL IN POOLS, LAKES AND O...

116) Family number: 56830063 (WO14105004A1) © PatBase

Title: ACCURATE BUOYANCY CONTROL IN POOLS, LAKES AND OCEANS AND TO MAINTAIN FREQUENCY TO GENERATE CLEAN AC ELECTRICAL POWER

Priority: WO2012US00587 20121227

Family:

Publication number	Publication date	Application number	Application date
WO14105004 A1	20140703	WO2012US00587	20121227

Probable Assignee: DAYA ARVIND A

Assignee(s):(std)**:** DAYA ARVIND A

Inventor(s):(std)**:** DAYA ARVIND A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B35/44 B63C7/06 B63C7/08 E02B17/00 F03B13/14 (Advanced/Invention)

CPC: B63B2035/4466 B63C7/06 B63B35/44 B63C7/08 F03B17/025 F03B17/04 Y02E10/38

Classification Explorer

Cited documents: WO0029285 A1, US5460556 A, US201213659406, US201213573009, US1749958 A, GB2402422 A1, GB2120606 A1,

Abstract:
The present invention relates to a control of buoyancy for attachment to large structures being lower, lifted, positioned and transported on the ocean. The present invention relates to controlling the depth and motion of buoyant force underwater. The invention generally applies to offshore floating structures used in the exploration and production of offshore minerals, such as semi–submersible vessels, tension leg platform and spur type platforms, more particularly to offshore floating structures having vertically spaced buoyancy capsule enclosed within an open cross–braced jacket framework or truss support structure including large floating offshore windmills

0) CN103898983A – MIDDLE LAYER JOINT CONNECTING STRUCTURE OF CONC...

117) Family number: 56791758 (CN103898983A) © PatBase

Title: MIDDLE LAYER JOINT CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL TUBULAR COLUMN AND REINFORCED CONCRETE BEAMS

Priority: CN201210570490 20121225

Family:

Publication number	Publication date	Application number	Application date
CN103898983 A	20140702	CN201210570490	20121225

Probable Assignee: CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s):(std)**:** CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s): CHINA RAILWAY FOURTH SURVEY AND DESIGN INST GROUP CO LTD ; CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO

Inventor(s):(std)**:** LEI CHONG ; LUO HUIPING ; SHEN TING ; WANG JINPING ; WANG YONGWEI ; ZHOU XIAOHUA ; ZHU YANBING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104895197,

Abstract:
Source: CN103898983A The invention relates to the field of structural engineering technologies, in particular to a middle layer joint connecting structure of a concrete–filled steel tubular column and reinforced concrete beams. The middle layer joint connecting structure comprises the concrete–filled steel tubular column and the reinforced concrete beams connected with the concrete–filled steel tubular column. The concrete–filled steel tubular column comprises a steel tube, an annular stiffening plate and vertical stiffening ribs are arranged in the steel tube, column end transition plates are arranged outside the steel tube and connected with upper main reinforcement connecting plates on the upper portions of the reinforced concrete beams and lower main reinforcement connecting plates on the lower portions of the reinforced concrete beams through high–strength bolts, and joint shear reinforcements are arranged at the connecting position between every two adjacent reinforced concrete beams. Connecting joints between the concrete–filled steel tubular column and the reinforced concrete beams are connected through high–strength bolts, concrete is cast, so that stress and plastic deformation capacity of a beam column are improved, the on–site welding quantity is small, construction is easy, and the middle layer joint connecting structure has the advantages of being good in ductility, easy and convenient to manufacture and install and convenient to repair after an earthquake and has good application prospects in the fields of large–scale public buildings and others.

0) CN103898984A – TOP LAYER JOINT CONNECTING STRUCTURE OF CONCRET...

118) Family number: 56791777 (CN103898984A) © PatBase

Title: TOP LAYER JOINT CONNECTING STRUCTURE OF CONCRETE–FILLED STEEL TUBULAR COLUMN AND REINFORCED CONCRETE BEAMS

Priority: CN201210570575 20121225

Family:

Publication number	Publication date	Application number	Application date
CN103898984 A	20140702	CN201210570575	20121225

Probable Assignee: CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s):(std)**:** CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s): CHINA RAILWAY FOURTH SURVEY AND DESIGN INST GROUP CO LTD ; CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO

Inventor(s):(std)**:** LEI CHONG ; LUO HUIPING ; SHEN TING ; WANG JINPING ; WANG YONGWEI ; ZHOU XIAOHUA ; ZHU YANBING

International class (IPC 8–9): E04B1/58 E04B1/98 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103898984A The invention relates to the field of structural engineering technologies, in particular to a top layer joint connecting structure of a concrete–filled steel tubular column and reinforced concrete beams. The top layer joint connecting structure comprises the concrete–filled steel tubular column and the reinforced concrete beams connected with the concrete–filled steel tubular column. The concrete–filled steel tubular column comprises a steel tube, and an annular stiffening plate and vertical stiffening ribs are arranged in the steel tube. Column end transition plates are arranged outside the steel tube and connected with upper main reinforcement connecting plates on the upper portion of the reinforced concrete beams and lower main reinforcement connecting plates on the lower portions of the reinforced concrete beams through high–strength bolts. Joint shear reinforcements are arranged at the connecting position between every two adjacent reinforced concrete beams. Connecting joints between the concrete–filled steel tubular column and the reinforced concrete beams are connected through the high–strength bolts, concrete is cast, stress and plastic deformation capacity of a beam column are improved, the on–site welding quantity is small, construction is easy, and the top layer joint connecting structure has the advantages of being good in ductility, easy and convenient to manufacture and install and convenient to repair after an earthquake and has good application prospects in the fields of large–scale public buildings and others.

0) CN103898981A – CONCRETE–FILLED STEEL TUBE COLUMN FOOT PRESTRES...

119) Family number: 56791729 (CN103898981A) © PatBase

Title: CONCRETE–FILLED STEEL TUBE COLUMN FOOT PRESTRESS ANCHOR BOLT STRUCTURE

Priority: CN201210570573 20121225

Family:

Publication number	Publication date	Application number	Application date
CN103898981 A	20140702	CN201210570573	20121225

Probable Assignee: CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s):(std)**:** CN RAILWAY SIYUAN SURVEY AND DES

Assignee(s): CHINA RAILWAY FOURTH SURVEY AND DESIGN INST GROUP CO LTD ; CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO

Inventor(s):(std)**:** LEI CHONG ; LUO HUIPING ; SHEN TING ; WANG JINPING ; WANG YONGWEI ; ZHOU XIAOHUA ; ZHU YANBING

International class (IPC 8–9): E02D27/42 E04B1/41 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103898981A The invention relates to the field of underground structure engineering technologies, in particular to a concrete–filled steel tube column foot prestress anchor bolt structure comprising an anchor bolt. The surface of the anchor bolt is sleeved with a PVC sleeve, the upper end of the anchor bolt is fixedly connected with an upper anchor plate, and the lower end of the anchor bolt is fixedly connected with a lower anchor plate. Constructional steel bars are arranged between the upper anchor plate and the lower anchor plate, and embedded parts are arranged at the bottom of the lower anchor plate. According to the prestress anchor bolt structure, the anchor bolt penetrates through the whole height and directly reaches the bottom of a foundation, and therefore the structure integrality is good. Accurate pretension force is exerted on the anchor bolt, so that the upper anchor plate and the lower anchor plate exert pressure on reinforced concrete, and when the foundation is bent, the pressure of the concrete is released to some extent but always kept in a pressurized state, and therefore cracks can not occur. The convectional steel bars and the anchor bolt are erected in a crossed mode, mutual penetration insertion is not affected, the foundation integrality is good, construction is facilitated, and the concrete–filled steel tube column foot prestress anchor bolt structure has good application prospects in the fields of large–scale public buildings and others.

0) CN203654473U – CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED...

120) Family number: 56689136 (CN203654473U) © PatBase

Title: CONNECTING JOINT OF RECTANGULAR CONCRETE FILLED STEEL TUBULAR COLUMN AND STEEL REINFORCED CONCRETE COMPOSITE BEAM

Priority: CN201320778831U 20131129

Family:

Publication number	Publication date	Application number	Application date
CN203654473 U	20140618	CN201320778831U	20131129

Probable Assignee: HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s):(std)**:** HUBEI HONGSHUN STEEL STRUCTURE MFG CO LTD

Assignee(s): SHUN STEEL MFG CO LTD HUBEI ; HUBEI HONGSHUN STEEL STRUCTURE MFG CO

Inventor(s):(std)**:** WANG SHAOZHONG ; WU XIAOYIN ; ZHOU FAN ; ZHOU PENG

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105569192, CN104563305, CN104294917, CN104278749,

Abstract:
Source: CN203654473U The utility model relates to a connecting joint of a rectangular concrete filled steel tubular column and a steel reinforced concrete composite beam, and belongs to the field of building structures. The connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam is composed of the rectangular concrete filled steel tubular column, the steel reinforced concrete composite beam, an H–type steel connector, beam stiffening plates and column connecting plates. The H–type steel connector is connected between the end face of the steel reinforced concrete composite beam and the corresponding segment column face of the rectangular concrete filled steel tubular column, the stretching ends of steel bars to be cast on the upper portion of the steel reinforced concrete composite beam and the stretching ends of steel bars at the bottom of a steel–reinforced concrete precast beam of the lower portion of the steel reinforced concrete composite beam are in lap joint with the outer edges of an upper flange plate and a lower flange plate of the H–type steel connector and the outer edges of an upper connecting plate and a lower connection plate of the corresponding segment of the rectangular concrete filled steel tubular column respectively, and integrated onsite cast forming of the beam, the column and the joint structure of the beam and the column is completed on site. According to the connecting joint of the rectangular concrete filled steel tubular column and the steel reinforced concrete composite beam, the joint mode of internal separating plate outer stretching connection is adopted, when earthquake acting force is received, plastic deformation happens to the beam ends and a joint area, plastic hinges are formed, and the connecting joint is good in force transmission clear performance and conforms to the strong column and weak beam failure mode in earthquake resistant design codes.

0) CN103850351A – CONNECTING DEVICE OF CONCRETE FILLED STEEL TUBU...

121) Family number: 56618291 (CN103850351A) © PatBase

Title: CONNECTING DEVICE OF CONCRETE FILLED STEEL TUBULAR COLUMN AND REINFORCED CONCRETE BEAM

Priority: CN201210496195 20121129

Family:

Publication number	Publication date	Application number	Application date
CN103850351 A	20140611	CN201210496195	20121129

Probable Assignee: CHINA NUCLEAR IND 22 CONSTR CO

Assignee(s):(std)**:** CHINA NUCLEAR IND 22 CONSTR CO ; CHINA NUCLEAR IND 22ND CONSTRUCTION CO LTD

Assignee(s): CHINA NUCLEAR IND 22ND CONSTRUCTION CO

Inventor(s):(std)**:** CHEN YULING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103850351A Disclosed is a connecting device of a concrete filled steel tubular column and a reinforced concrete beam. The connecting device comprises steel corbels which are welded to the concrete filled steel tubular column, one ends of the steel corbels are provided with extension sleeves, and the reinforced concrete beam is fixed to the steel corbels through the extension sleeves. According to the connecting device of the concrete filled steel tubular column and the reinforced concrete beam, the extension sleeves are arranged on the connecting portions of the steel corbels and the reinforcing steel bars inside the reinforced concrete beam, and the concrete filled steel tubular column is provided with the structures of reinforcing outer ring plates and concentric inner ring plates, so that installation and fixed welding of the reinforcing steel bars in the concrete beam and the steel corbels can be achieved conveniently, safely and rapidly; the extension sleeves are welded to the steel corbels before construction, so that the quality safety of welding points can be effectively guaranteed and the field construction speed can be effectively increased; by means of the ring plates and the steel corbels, worry on cracks generated at the contact positions between the reinforced concrete beam and the wall of the concrete filled steel tubular column due to contact between concrete and the concrete filled steel tubular column can be avoided, and secondary treatment through other construction measures can be omitted, so that the construction cost can be saved.

122) Family number: 56638198 (CN203640164U) © PatBase

Title: CONCRETE–FILLED STEEL TUBE LAMINATED LATTICED COLUMN

Priority: CN201320802709U 20131206

Family:

Publication number	Publication date	Application number	Application date
CN203640164 U	20140611	CN201320802709U	20131206

Probable Assignee: UNIV TSINGHUA

Assignee(s):(std)**:** TSINGHUA UNIV ; UNIV TSINGHUA

Inventor(s):(std)**:** HAN LINHAI ; LI WEI ; QIAN WEIWU ; ZHAO XIAOLIN

International class (IPC 8–9): E04C3/36 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104264905, CN103669729,

Abstract:
Source: CN203640164U The utility model provides a concrete–filled steel tube laminated latticed column comprising at least three components, a plurality of joint plates and a plurality of lacing and batten elements, wherein the connection lines of the centers of every cross sections, on a plane axially orthogonal with the at least three components, of the at least three components are combined to form a polygon, and wherein each of the at least three components comprises a steel pipe, a first concrete layer formed in the steep pipe and a second concrete layer arranged outside the steel pipe, and a steel reinforcement cage surrounding the outer peripheral surface of the steel pipe is arranged in the second concrete soil; the plurality of joint plates are connected with the steel pipes and arranged at intervals in the axial direction of the steel pipes; each of the plurality of lacing and batten elements is connected to the corresponding joint plates on two adjacent steel pipes, respectively. The concrete–filled steel tube laminated latticed column is simple in structure and has high bearing capacity and rigidity.

0) US2010287715A – FENDERS FOR PIER PROTECTION AGAINST VESSEL COLL...

123) Family number: 47634193 (US2010287715A) © PatBase

Title: FENDERS FOR PIER PROTECTION AGAINST VESSEL COLLISION

Priority: US20090210971P 20090325 US20100729779 20100323 US20130908236 20130603

Family:

Publication number	Publication date	Application number	Application date
US2010287715 AA	20101118	US20100729779	20100323
US2013259580 AA	20131003	US20130908236	20130603
US8484787 BB	20130716	US20100729779	20100323
US8739343 BB	20140603	US20130908236	20130603

Probable Assignee: UNIV LOUISIANA STATE

Assignee(s):(std)**:** EL TAWIL SHERIF ; VOYIADJIS GEORGE Z ; UNIV LOUISIANA STATE

Assignee(s): BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND A ; BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND AGRICULTURAL AND MECHANICAL COLLEGE ; BOARD OF SUPERVISORS OF LOUISIANA STATE UNIV AND AGRICULTURAL AND MECHANICS COLLEGE

Inventor(s):(std)**:** EL TAWIL SHERIF ; VOYIADJIS GEORGE Z

Agent(s): ADAMS AND REESE LLP; JASON P

International class (IPC 8–9)**:** E01D19/02 E02B3/26 F16F7/12 (Advanced/Invention)

CPC: F16F7/12 E01D19/02 E02B3/26

European class: F16F7/12

US class: 14/75 14/76 14/76P 14/78 188/377 188/377S 405/212 405/212S

Classification Explorer

Cited documents: US7794174 BB, US7481600 BB, US7396184 BB, US7112004 BB, US7100752 BB, US6863467 BB, US6811144 BB, US6692191 BB, US6604888 BB, US6551010 BA, US6536986 BA, US6004066 A, US5915876 A, US5851005 A, US5127354 A, US5123775 A, US4884919 A, US4815565 A, US4674911 A, US4650371 A, US4645375 A, US4452431 A, US4352484 A, US4321989 A, US4285616 A, US4137861 A, US3864922 A, US3853084 A, US3674115 A, US2011091273 AA, US2007286675 AA, US2003081997 AA,

Forward Citations: US9677238, US9567744, US9163369, US2015069773, US2014130725, US2013270754, US2012118690, FR3001514, EP2762744, CN104963318, CN104963318, CN104831686, CN104775355, CN104746421, CN104652255, CN104314002, CN104314002, CN104314000, CN104294797, CN104278619, CN104250962, CN103966980, CN103966980, CN103924555, CN103911971, CN103911971, CN103741647, CN103352418, CN102995607, CN102295063,

Abstract:
Source: US2010287715A A system is disclosed for protecting supporting structures, such as those of a bridge or other such marine supporting structure, from the force of an impact of a vehicle/vessel. Such a system includes a plurality of modular components arranged in series and configured to dissipate the energy of the force through the progressive buckling of one or more of the modular components. Each modular component contains an energy dissipation unit that includes a plurality of adjacent cells. The energy of the force is dissipated in the buckling of the walls of the cells of the energy dissipation units through the formation of one or more plastic hinges and/or volume reduction of the cells.

0) KR20140021278A – RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HOR...

124) Family number: 55883096 (KR20140021278A) © PatBase

Title: RIGID JOINT OF CFT COLUMN AND STEEL BEAM BY HORIZONTAL WELDING DIAPHRAGM OF FLANGE PLATES AND CONNECTING BARS

Priority: KR20120087438 20120809

Family:

Publication number	Publication date	Application number	Application date
KR101402958 B1	20140602	KR20120087438	20120809
KR20140021278 A	20140220	KR20120087438	20120809

Probable Assignee: SNU R AND DB FOUNDATION

Assignee(s):(std)**:** INDUSTRIAL ACADEMIC COOPERATION GROUP SEOUL NATIONAL UNIV ; SNU R AND DB FOUNDATION

Inventor(s):(std)**:** PARK HONG GUN ; KIM CHANG SOO

International class (IPC 8–9)**:** E04B1/30 E04B1/58 E04C3/30 (Advanced/Invention)

Classification Explorer

Cited documents: KR20080037436 A, KR19990081415 A, JP3049571 B2, JP2003003568 A2,

Abstract:
Source: KR20140021278A The present invention relates to a CFT column having a diaphragm with simple structure due to horizontally welding connection reinforcing bars to flange plates and a portion for joining the same and steel beams using the same, wherein the portion is formed into a structure for rigidly joining the CFT column and the steel beams with definite performances properly using the CFT column. The CFT column according to the present invention is a CFT column having concrete filled therein, and comprises: a steel column; a pair of the flange plates corresponding to the installation directions of the steel beams, facing each other, and horizontally welded to the inner or the outer surfaces of the steel column; and the connection reinforcing bars installed to connect the pair of the flange plates each other and welded to the flange plates by the whole lengths thereof after laid on the flange plates. The structure for rigidly joining the CFT column and the steel beams according to the present invention comprises: the CFT column having the diaphragm in which the connection reinforcing bars are horizontally welded to the flange plates; the steel beams having flanges welded to the flange plates or the steel column at the same level of the flange plates of the CFT flange plates; and the filled concrete filled in the steel column.

0) CN203613717U – STEEL REINFORCED BEAM COLUMN MADE OF H–SHAPED S...

125) Family number: 56518876 (CN203613717U) © PatBase

Title: STEEL REINFORCED BEAM COLUMN MADE OF H–SHAPED SECTION STEEL

Priority: CN201320746032U 20131121

Family:

Publication number	Publication date	Application number	Application date
CN203613717 U	20140528	CN201320746032U	20131121

Probable Assignee: ZHIFANG TECHNOLOGY CO LTD

Assignee(s):(std)**:** ZHIFANG TECHNOLOGY CO LTD

Assignee(s): CHILEAN HOUSING TECHNOLOGY CORP ; ZHIFANG TECHNOLOGY CO

Inventor(s):(std)**:** WAN XIN ; SHEN QI

International class (IPC 8–9): E04C3/293 E04C3/36 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104234318, CN103603463,

Abstract:
Source: CN203613717U The utility model discloses a steel member adopting a steel reinforced beam column made of H–shaped section steel. A group of through holes (1a) are uniformly distributed in a middle wing plate of H–shaped section steel (1) in the length direction of the H–shaped section steel (1); spaces positioned on the two sides of the middle wing plate of H–shaped section steel (1), between an upper wing plate and a lower plate and in the through holes (1a) are filled with concrete (2); concrete (2) on the two sides of the middle wing plate of H–shaped section steel (1) are mutually connected. The steel reinforced beam column made of the H–shaped section steel can increase limit values of the width–to–thickness ratio and the height–to–thickness ratio of the H–shaped section steel; the steel reinforced beam column made of the H–shaped section steel, which has high width–to–thickness ratio and high height–to–thickness ratio, is provided.

0) JP2012001881A – EXTERNAL BRACE USING ASEISMIC REINFORCEMENT STR...

126) Family number: 50531641 (JP2012001881A) © PatBase

Title: EXTERNAL BRACE USING ASEISMIC REINFORCEMENT STRUCTURE AND ASEISMIC REINFORCEMENT METHOD

Priority: JP20100134704 20100614

Family:

Publication number	Publication date	Application number	Application date
JP2012001881 A2	20120105	JP20100134704	20100614
JP5501106 B2	20140521	JP20100134704	20100614

Probable Assignee: DAIWA HOUSE IND

Assignee(s):(std)**:** DAIWA HOUSE IND

Assignee(s): DAIWA HOUSE IND CO LTD ; DAIWA HOUSE INDUSTRY CO LTD

Inventor(s):(std)**:** AOYAMA NAOKI ; NAGAHAMA ATSUKO

International class (IPC 8–9): E04B1/58 E04G23/02 E04H9/02 (Advanced/Invention)

Classification Explorer

Forward Citations: JP2013241815, CN103358037,

Abstract:
Source: JP2012001881A PROBLEM TO BE SOLVED: To provide an aseismic reinforcement structure capable of being constructed while using the indoor of an existing building, eliminating the problems of noise, vibrations and dust during construction, transmitting stress to the skeleton of the existing building by compression force only and being applied even when the concrete strength of an existing skeleton is low.SOLUTION: To the existing building 1 whose column 3 is projected from an outer wall surface 5a, a steel frame brace 2 for reinforcement is positioned on the outdoor side and installed. A joint metal 6 to be installed to a column–beam joint part 3a is provided. The joint metal 6 includes a groove–shaped steel plate 7 to be fitted to the part projected from the outer wall surface 5a of the column 3 and a brace joint plate 8 to be piled up on it and fixed. In a gap of the fitting part of the groove–shaped steel plate 7 and the column 3, a filler for adhesion such as an adhesive resin or inorganic grout is filled.

0) CN203583672U – FABRICATED CONCRETE FILLED STEEL TUBULAR COLUMN...

127) Family number: 56379224 (CN203583672U) © PatBase

Title: FABRICATED CONCRETE FILLED STEEL TUBULAR COLUMN–STEEL BEAM NODE CONNECTING STRUCTURE

Priority: CN201320725179U 20131113

Family:

Publication number	Publication date	Application number	Application date
CN203583672 U	20140507	CN201320725179U	20131113

Probable Assignee: UNIV DALIAN MARITIME

Assignee(s):(std)**:** DALIAN MARITIME UNIV ; UNIV DALIAN MARITIME

Inventor(s):(std)**:** CUI CHUNYI ; FANG JUN ; KONG YAN ; LI XIAOFEI ; MENG KUN ; ZHANG AIFENG ; ZHANG SHIPING

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203583672U The utility model discloses a fabricated concrete filled steel tubular column–steel beam node connecting structure. The fabricated concrete filled steel tubular column–steel beam node connecting structure comprises end plates, reinforcing annular plates, cushion plates I and cushion plates II, and is characterized in that the end plates are fixed to the ends of beam webs of H–shaped steel beams, the two H–shaped steel beams are fixed to the two sides of a concrete filled steel tubular column when bolts penetrating through a column body of the concrete filled steel tubular column are connected with installation holes I in the end plates, the reinforcing annular plates are arranged on the upper side of one of the H–shaped steel beams and the lower side of the other H–shaped steel beams respectively, each reinforcing annular plate comprises a beam wing edge fixing portion and a beam wing edge reinforcing portion, wherein the beam wing edge fixing portion and the beam wing edge reinforcing portion are arranged on the two sides of a through hole. Each cushion plate I comprises an upper beam wing edge fixing portion, a lower beam wing edge fixing portion and a beam web plate fixing portion, wherein the upper beam wing edge fixing portion and the lower beam wing edge fixing portion are fixed to beam wing edges. The cushion plates II are fixed to the reinforcing annular plates through installation holes IV. The fabricated concrete filled steel tubular column–steel beam node connecting structure has the advantages that the fabricated concrete filled steel tubular column–steel beam node connecting structure is convenient to machine, materials can be easily obtained and the structure performance is excellent. The phenomenon that the bearing force of the wall of the concrete filled steel tubular column is weakened due to quality of weld joints and the like is reduced due to bolt connection, and the force transmitting capacity and the shearing resistance capacity of the steel beam webs are greatly improved.

0) CN102409783A – BOTTOM DOUBLE COMPOSITE SECTION STEEL SHEAR WAL...

128) Family number: 50939777 (CN102409783A) © PatBase

Title: BOTTOM DOUBLE COMPOSITE SECTION STEEL SHEAR WALL WITH REINFORCED CONCRETE FRAME AND INSIDE–HIDDEN STEEL PLATE AS WELL AS MANUFACTURING METHOD

Priority: CN201110385458 20111128

Family:

Publication number	Publication date	Application number	Application date
CN102409783 A	20120411	CN201110385458	20111128
CN102409783 B	20140416	CN201110385458	20111128

Probable Assignee: UNIV BEIJING TECHNOLOGY

Assignee(s):(std): BEIJING UNIV OF TECHNOLOGY ; UNIV BEIJING TECHNOLOGY

Assignee(s): BEIJING UNIVERSITY OF TECHNOLOGY

Inventor(s):(std): CAO WANLIN ; CUN HUI ; HUI CUN ; WANG ZHIHUI ; WANLIN CAO ; ZHIHUI WANG

International class (IPC 8–9): E04B1/98 E04B2/56 E04C3/34 E04G21/00 (Advanced/Invention)

Classification Explorer

Cited documents: KR20050065916 A, JP8013848 A2, JP2225749 A2, JP2006045776 A2, CN2791137 Y, CN202380606 U, CN1995571 A, CN1793541 A, CN101936043 A, CN101881056 A, CN101761154 A, CN101748828 A, CN101457560 A,

Forward Citations: CN104929258, CN104818784, CN103669725, CN103669725, CN102877646, CN102877646, CN102605962, CN102605962,

Abstract:
Source: CN102409783A The invention relates to a bottom double composite section steel shear wall with a reinforced concrete frame and an inside–hidden steel plate as well as a manufacturing method. The shear wall comprises a steel reinforced concrete composite frame column, a mild steel energy–consuming steel plate and a shear wall steel plate, which is a double composite column comprising the composite of the externally–adhered mild steel energy–consuming steel plate and a concrete filled steel tube column and the composite of the concrete filled steel tube and a reinforced concrete column and is a multiple combination body comprising the combination of a reinforcing bar and concrete, the combination of a steel plate and the concrete and the combination of a steel reinforced concrete frame column and a steel plate shear wall. Compared with a conventional shear wall, the shear wall provided by the invention has the advantages of high initial stiffness, high bearing capacity, slow bearing capacity and stiffness attenuation, good whole anti–seismic energy–consuming performance and relatively stable later–stage anti–seismic performance; the bottom shear–slip damage is little; and after a mild steel casing pipe is added, the outer mild steel casing pipe is firstly surrendered so as to consume the energy in the structure input by earthquake and can give play to the effects of resistance and ductility till being destroyed, therefore, the premature damage and destroy of the high–strength steel plate can be prevented and delayed.

0) CN203506034U – WATERPROOF CABINET

129) Family number: 56119247 (CN203506034U) © PatBase

Title: WATERPROOF CABINET

Priority: CN201320584843U 20130923

Family:

Publication number	Publication date	Application number	Application date
CN203506034 U	20140402	CN201320584843U	20130923

Probable Assignee: LI ZHENGWEN

Assignee(s):(std)**:** LI ZHENGWEN

Assignee(s): ZHENGWEN

Inventor(s):(std)**:** LI ZHENGWEN

International class (IPC 8–9): A47B77/02 A47B77/16 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203506034U The utility model relates to kitchen utensils, in particular to an anti–corrosive, dampproof and attractive waterproof cabinet. The waterproof cabinet comprises a base, a bottom plate, vertical plates, stand columns, a horizontal plate, cabinet doors, a faceplate base plate and a faceplate. The base is formed by directing pouring cement mortar. A plurality of floor tiles are cut, tiled and spliced to form the bottom plate. Each vertical plate is formed by two floor tiles, and the reverse sides of the two floor tiles are arranged face to face. Each stand column is formed by two floor tiles, and the reverse sides of the two floor tiles are arranged face to face. Cement mortar is filled into the spaces between the two floor tiles of each vertical plate and between the two floor tiles of each stand column for bonding and fixing. A wooden plate is embedded at hinges which are arranged on the side face of each vertical plate. A plurality of floor tiles are cut, tiled and spliced according to the required size to form the horizontal plate. The faceplate base plate is a reinforced concrete plate which is formed by pouring reinforced concrete on site. The faceplate base plate is in pouring connection with a wall through reinforcing steel bars in a fixed mode. The waterproof cabinet has the advantages of being simple in structure, dampproof, waterproof, anti–corrosive, not prone to deformation, capable of bearing heavy objects, attractive in appearance and friendly to environment, the waterproof cabinet has no dead angles at corners, and the cabinet doors are fixed firmly through the hinges.

0) US2004131428A – PILE ANCHOR FOUNDATION

130) Family number: 30715822 (US2004131428A) © PatBase

Title: PILE ANCHOR FOUNDATION

Priority: US20030437988P 20030106 US20030734281 20031215 US20060797746P 20060505 US20070797772 20070507 US20080076904 20080325 WO2007US10995 20070507

Family:

Publication number	Publication date	Application number	Application date
CA2651259 AA	20081104	CA20072651259	20070507
CA2651259 C	20140401	CA20072651259	20070507
US2004131428 AA	20040708	US20030734281	20031215
US2007269273 AA	20071122	US20070797772	20070507
US2008232906 AA	20080925	US20080076904	20080325
US7533505 BB	20090519	US20030734281	20031215
US7618217 BB	20091117	US20070797772	20070507
US7707797 BB	20100504	US20080076904	20080325
WO07130667 A2	20071115	WO2007US10995	20070507
WO07130667 A3	20080228	WO2007US10995	20070507

Probable Assignee: HENDERSON ALLAN P

Assignee(s):(std)**:** HENDERSON ALLAN P

Inventor(s):(std)**:** HENDERSON ALLAN P

Agent(s): ROBIC; JACOBSON HOLMAN PLLC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E02D27/00 E02D27/12 E02D27/32 E02D27/42 E02D5/10 E02D5/22 E02D5/30 E02D5/38 E02D5/54 F03D1/00 (Advanced/Invention); E02D27/00 E02D27/12 E02D27/32 E02D5/02 E02D5/22 E02D5/24 E02D5/34 F03D1/00 (Core/Invention)

International class (IPC 1–7): E02D27/50 E02D5/22

CPC: E02D27/12 F03D13/22 E04H12/085 Y02E10/728 E02D27/425 E02D27/42

European class: E02D27/12 Y02E10/72N

US class: 405/228 405/229 405/231 405/231S 405/232 405/232S 405/233 405/233P 405/239 405/239P 405/244 405/244S 405/251 405/252.1 405/255 405/256 405/256S 52/111 52/153 52/155 52/156 52/158 52/166 52/169.9 52/223.4 52/223.5 52/292 52/294 52/295 52/296 52/741.11 52/741.13 52/741.14 52/741.17 52/745.04 52/745.17

Classification Explorer

Cited documents: US7066094 BB, US6672023 BB, US6665990 BA, US6270308 BA, US6216414 BA, US6119425 A, US5960597 A, US5878540 A, US5826387 A, US5761875 A, US5678382 A, US5625988 A, US5586417 A, US5474399 A, US5379563 A, US5289626 A, US5231808 A, US5228806 A, US5131790 A, US4910940 A, US4842447 A, US4618287 A, US4287691 A, US4232846 A, US4228627 A, US4217738 A, US4060994 A, US4038827 A, US4031687 A, US3963065 A, US3963056 A, US3916635 A, US3842608 A, US3839874 A, US3793794 A, US3600865 A, US3559412 A, US3525224 A, US3382680 A, US3186181 A, US2724261 A, US2706498 A, US2374624 A, US2162108 A, US1164085 A, US1048993 A, JP6316942 A2, JP61233131 A2, JP59150830 A2, JP58166195 A2, JP55122916 A2, FR2030478 A5, FR1463696 A, DE2758489 A1,

Forward Citations: WO16140892, WO15107232, WO13074007, WO12159086, WO12037450, WO11047723, WO10071975, WO10060866, US9677274, US9617704, US9574349, US9518402, US9481973, US9359741, US9340947, US9328474, US9290903, US9290901,

US9238921, US9207000, US9206617, US9194095, US9115700, US9096986, US9080306, US9045878, US9032674, US9011047, US9003721, US8974150, US8950980, US8920077, US8863455, US8834072, US8806744, US8800225, US8745942, US8726589, US8720139, US8689506, US8677700, US8671568, US8631618, US8584430, US8578679, US8555518, US8511021, US8511020, US8448279, US8381479, US8375678, US8341788, US8302357, US8291646, US8261502, US8162569, US8146323, US8037646, US8015865, US7987640, US7966780, US7900406, US7823348, US7805895, US7786612, US7663263, US7614200, US2017044733, US2016097199, US2015330052, US2015143765, US2015121784, US2015075099, US2014345209, US2014331580, US2014298750, US2014245669, US2014237923, US2014237908, US2014223846, US2014215942, US2014079490, US2013298432, US2013255667, US2013175420, US2013068924, US2013051927, US2013000245, US2012324813, US2012124924, US2012096786, US2012070233, US2012014755, US2011297057, US2011278752, US2011253877, US2011154644, US2011131899, US2011120028, US2011044766, US2011041438, US2011027100, US2010300018, US2010269437, US2010247245, US2010146890, US2010095603, US2010019503, US2009266016, US2009235597, US2008302038, US2008236075, US2008152496, US2008008539, US2005072067, JP5787669, JP2013044204, FR2874223, ES2400902, EP2242885, EP2242885, EP2192238, EP2108836, EP1767705, CN106545027, CN106544952, CN105569067, CN105421476, CN104294838, CN104278691, CN104278690, CN104278690, CN104110353, CN104011297, CN103774688, CN103774687, CN103061409, CN102995651, CN102995635, CN102767190, CN102561378, CN102535496, CN102383439, CN102383439, CN102162258, AU2012358561, AU2009319068,

Abstract:
Source: US2004131428A A circular concrete cap foundation poured in−situ within a perimeter forming corrugated metal pipe set atop or within an excavated pit and enclosing a series of circumferentially spaced pile anchors. The circular concrete cap foundation supports sets of inner and outer circumferentially spaced tower anchor bolts having their lower ends anchored to an embedded anchor ring and their upper ends projecting vertically and upwardly out the top of the circular foundation to engage the base flange of a supported tower. The pile anchors are formed with perimeter corrugated metal pipes set deep in subsurface soils with cementitious material surrounding and partially bonding to a centralized steel bolt or tendon which extends through the cap foundation. The tower anchor bolts and the pile anchor bolts are both partially encased in a PVC sleeve so that the bolts can be post−tensioned. The pile anchors are in tension only and serve to pull the cap foundation down to compress the underlying ground soils.

0) WO12032198A2 – SET OF ELEMENTS AND PARTS FOR THE ASSEMBLY, EXT...

131) Family number: 50785187 (WO12032198A2) © PatBase

Title: SET OF ELEMENTS AND PARTS FOR THE ASSEMBLY, EXTENSION AND RAPID MODULAR CONVERSION OF VESSELS, RAFTS, FLOATING GANGWAYS AND BRIDGES AND TEMPORARY FLOATING STRUCTURES WITH MULTIPLE FLOATS, IN PARTICULAR FOR AQUATIC EMERGENCIES

Priority: ES20100001195 20100911 WO2011ES00272 20110910

Family:

Publication number	Publication date	Application number	Application date
EP2679482 A2	20140101	EP20110823103	20110910
ES2405704 AA	20130603	ES20100001195	20100911
ES2405704 BA	20140326	ES20100001195	20100911
WO12032198 A2	20120315	WO2011ES00272	20110910
WO12032198 A3	20120426	WO2011ES00272	20110910

Probable Assignee: NIETO LEON JOSE

Assignee(s):(std)**:** NIETO LEON JOSE

Assignee(s): JOSE NIETO LEON

Inventor(s):(std)**:** NIETO LEON JOSE

Inventor(s): JOSE NIETO LEON

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B63B3/08 (Advanced/Invention)

CPC: B63B3/06 B63B35/34

European class: B63B3/06

Classification Explorer

Cited documents: US6948443 BA, US4919632 A, US4856446 A, US2009084303 AA, ES1066432 UA, ES1065789 UA, ES1064408 UA, ES1063665 UA, EP07822879,

Forward Citations: WO16020814,

Abstract:
The invention relates to a wide range of improvements to the main parts of the flotation structure (cross–pieces, floats, sliding covers and longitudinal U–shaped bars) of the invention in utility model ES1064408U and European patent application EP2070814A1, together with a set of novel parts of diverse types and purposes, which can be coupled to the above–mentioned parts and which together allow and facilitate, indiscriminately and according to needs, the transport, assembly, disassembly and rapid conversion of vessels, rafts and floating bridges or gangways and other temporary structures comprising multiple stationary or rotary floats, of a type, size and number determined by the number and types of parts available, such that assembly involves the repeated lateral mounting of identical or similar structural modules. These improvements and novel elements provide a number of practical advantages in terms of packing, transport and assembly, allowing: easy extension of the floating structure by means of the internal incorporation or lateral addition of modular flotation units; the connection of two separate pre–assembled floating structures to form a single assembly; the connection of different modular flotation units to form a flexible chain of floats that can be folded, stacked in layers or wound into cylindrical structures about central supporting parts; the additional reinforcement of parts of the assembled structure; easy ground–based towing, transport and handling of the assembled parts or structures; as well as the coupling or rapid replacement of suitable modular accessories (motors, seats, stretchers, cases, baskets, stairways, railings, etc.). The assembly, disassembly and reconfiguration processes for most of the structures can be reversed without having to disassemble the entire structure into separate parts.

0) CN203499340U – PREFABRICATED ASSEMBLED ENCLOSURE

132) Family number: 56080309 (CN203499340U) © PatBase

Title: PREFABRICATED ASSEMBLED ENCLOSURE

Priority: CN201320615548U 20130924

Family:

Publication number	Publication date	Application number	Application date
CN203499340 U	20140326	CN201320615548U	20130924

Probable Assignee: WANG GUANGMING

Assignee(s):(std)**:** WANG GUANGMING

Inventor(s):(std)**:** WANG GUANGMING

International class (IPC 8–9): E04H17/16 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104895401, CN104594707, CN103967332, CN103967332,

Abstract:
Source: CN203499340U The utility model relates to a prefabricated assembled enclosure, and belongs to the field of building structures. The prefabricated assembled enclosure solves the problems that existing enclosures are low in construction speed and high in cost and can not be recycled. The prefabricated assembled enclosure is characterized in that an ordinary stand column is of a hollow structure, insertion connection grooves are formed in two opposite sides of the ordinary stand column, corner stand columns are also of hollow structures, and insertion connection grooves are formed in two adjacent sides of the corner stand columns. One wall plate or more than two wall plates are fixed through the insertion connection grooves, one long edge of each wall plate is provided with a boss, and the other long edge of each wall plate is provided with a groove capable of being connected with the corresponding boss in an insertion mode. Bosses are arranged above wall plate bottom beams. Insertion connection grooves are formed below stand column caps. A steel reinforcement cage is pre−buried into a stand column foundation, one half portion of the steel reinforcement cage is arranged in the foundation, and the other half portion of the steel reinforcing cage is exposed out of the foundation, is inserted into the hollow part of the stand column and is fixed by filling concrete mortar into the hollow part. Before filling, films are applied to the portion, capable of making contact with the filled concrete mortar, of the inner wall of the hollow part of the stand column so as to facilitate disassembling in the future.

0) CN103628572A – PROJECT BEAM–COLUMN JOINT FOR REVERSE BUILDING ...

133) Family number: 55940806 (CN103628572A) © PatBase

Title: PROJECT BEAM–COLUMN JOINT FOR REVERSE BUILDING METHOD

Priority: CN201310692891 20131218

Family:

Publication number	Publication date	Application number	Application date
CN103628572 A	20140312	CN201310692891	20131218

Probable Assignee: EAST CHINA ARCHITECTURAL DESIGN AND RES INST CO LTD

Assignee(s):(std)**:** EAST CHINA ARCHITECTURAL DESIGN AND RES INST CO LTD

Assignee(s): EAST CHINA ARCHITECTURAL DESIGN AND RESEARCH INST CO

Inventor(s):(std)**:** LIU RUOBIAO ; WANG WEIDONG ; WENG QIPING

International class (IPC 8–9): E02D17/04 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN105002930, CN105002930,

Abstract:
Source: CN103628572A The invention belongs to the constructional engineering field and relates to a project beam–column joint for a reverse building method. The technical scheme of the project beam–column jpint for the reverse building method is as follows: after a foundation pit is excavated below the bottom elevation of a structural beam, a steel ring plate is welded in an elevation position opposite to the position of the main reinforcement of the structural beam at the outer side of a concrete filled steel tubular column; the width of the steel ring plate meets the welding requirement of the main reinforcement of the structural beam; the thickness of the steel ring plate meets the force transfer requirement of the main reinforcement of the structural beam. The main reinforcement of the structural beam transfers force to the main reinforcement of the structural beam of the adjacent span through the steel ring plate. The joint has the advantages that the connection of the reinforcements of the structural beam and force transfer among the reinforcements of the structural beam in the position of the beam–column joint in a reverse building foundation pit project are realized successfully, and the trouble of different traversing through the reinforcements of the beam–column joint to technicians in a field for a long time is solved.

134) Family number: 52558887 (WO14032558A1) © PatBase

Title: ASSEMBLED AND INTEGRATED SHEAR WALL BUILDING STRUCTURE AND CONSTRUCTION METHOD

Priority: CN201210309759 20120828

Family:

Publication number	Publication date	Application number	Application date
CN102808450 A	20121205	CN201210309759	20120828
WO14032558 A1	20140306	WO2013CN82294	20130826

Probable Assignee: CHU MINGJIN

Assignee(s):(std)**:** CHU MINGJIN

Inventor(s):(std)**:** CHU MINGJIN

Agent(s): ZJLH INTELLECTUAL PROPERTY LAW FIRM

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): E04B1/00 E04B1/04 E04B1/41 E04B2/56 E04B2/64 E04C2/30 E04G21/14 (Advanced/Invention)

CPC: E04B1/04 E04B1/046 E04B2/68 E04G21/142 E04C2/044 E04C2/06 E04C2/322

Classification Explorer

Cited documents: WO11021151 A1, JP8068105 A2, CN202865991 U, CN202767349 U, CN202767230 U, CN102808450 A, CN102635197 A, CN102261189 A, CN102061803 A, CN101016754 A,

Forward Citations: WO14032558, CN105544857, CN105332446, CN105113708, CN105040981, CN104929278, CN104878857, CN104790555, CN104358331, CN103993672, CN103899092, CN103850363, CN103821263, CN103806538, CN103806538, CN103741842, CN103696512, CN103590623, CN103590623, CN103541492, CN103526877, CN103526877, CN103526868, CN103526868, CN103255875, CN103104053, CN103104053, CN103088939, CN103074955, CN103074955,

Abstract:
An assembled and integrated shear wall building structure, formed by precast concrete members connected by cast–in–situ concrete and anchor–connected reinforcement bars; each precast concrete member comprises a precast wall panel member (2), a T–shaped wall column member (3), an L–shaped wall column member (4), a cruciform wall column member (5), a wall body member (6) having an opening, and a floor member (7); the precast concrete members are provided therein with a plurality of longitudinal through–holes (9) parallel with the surface, and the longitudinal edges thereof are provided with transverse grooves (10) intervally disposed and intersecting with at least one longitudinal through–hole (9); the transverse grooves (10) between different precast concrete members are oppositely arranged; the transverse anchor–connected reinforcement bars are disposed in the space formed by the transverse grooves (10); the longitudinal anchor–connected reinforcement bars are disposed in the longitudinal through–holes (9); the longitudinal through–holes (9) and the transverse grooves (10) are filled with concrete therein to form a layer of structural units or a single–layer building structure; and a plurality of structural units are connected to form a multi–layer or high–rise assembled and integrated shear wall structure. Also provided is a construction method of the assembled and integrated shear wall building structure. The assembled and integrated shear wall building structure has reliable joint connection between members, and high level of industrialization and standardization, thus facilitating transportation and installation.

0) CN103615072A – STEEL–ENCASED CONCRETE STEEL COLUMN WITH BUILT–...

135) Family number: 55910774 (CN103615072A) © PatBase

Title: STEEL–ENCASED CONCRETE STEEL COLUMN WITH BUILT–IN SPIRAL STIRRUP

Priority: CN201310606233 20131125

Family:

Publication number	Publication date	Application number	Application date
CN103615072 A	20140305	CN201310606233	20131125

Probable Assignee: UNIV GUANGXI

Assignee(s):(std)**:** GUANGXI UNIV ; UNIV GUANGXI

Inventor(s):(std)**:** CHEN DELAI ; CHEN DEZHAO ; CHEN YULIANG ; CHEN ZONGPING ; LI JUNTAO ; XU ANBANG ; YU XINGGUO

International class (IPC 8–9)**:** E04C3/36 (Advanced/Invention)

Classification Explorer

Cited documents: JP2006118162 A2, JP2002013248 A2, CN1786384 A, CN103015630 A, CN102535747 A, CN102433962 A, CN102392509 A, CN102003042 A, CN101818543 A,

Forward Citations: CN105484429, CN104746766,

Abstract:
Source: CN103615072A The invention belongs to a building structure member in the technical field of building engineering, and particularly relates to a steel–encased concrete steel column with a built–in spiral stirrup. The steel–encased concrete steel column comprises longitudinal angle steels, horizontal connecting pieces, a spiral stirrup, a longitudinal reinforcement and core concrete, wherein each longitudinal angle steel is arranged in each corner of the column, the longitudinal angle steels are connected through horizontal connecting pieces, the horizontal connecting pieces are welded on the inner sides or the outer sides of a longitudinal angle steel flange plate to form a steel–encased framework, the longitudinal reinforcement is arranged on the inner wall of the spiral stirrup to form a spiral reinforcement cage which is arranged in the center of the steel–encased framework, the core concrete is filled in the internal space of the steel–encased framework to form the steel–encased concrete steel column with the built–in spiral stirrup. The steel–encased concrete steel column with the built–in spiral stirrup has the advantages of being high in bearing capacity, good in ductility, excellent in anti–seismic property, low in steel ratio, small in section dimension, convenient to construct, fast in progress and the like.

0) KR20130105176A – A CONCRETE FILLED STEEL TUBE WITH THE INNER REI...

136) Family number: 54823125 (KR20130105176A) © PatBase

Title: A CONCRETE FILLED STEEL TUBE WITH THE INNER REINFORCING STRUCTURE

Priority: KR20120027384 20120316

Family:

Publication number	Publication date	Application number	Application date
KR101368218 B1	20140227	KR20120027384	20120316
KR20130105176 A	20130925	KR20120027384	20120316

Probable Assignee: CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s):(std)**:** CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s): CM PARTNERS ARCHITECTURE FIRM CO

Inventor(s):(std)**:** CHUN KEUM SOK ; HWANG MIN GI ; KIM BONG HYEON ; KIM JAE MAN ; LIU WON SOCK

International class (IPC 8–9)**:** E04B1/18 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR100684931 B1, KR100684931, JP5059786 A2,

Forward Citations: KR20150137181, KR101687159, KR101636473, CN105672574, CN103938799,

Abstract:
Source: KR20130105176A PURPOSE: A concrete filled steel tube column including an internal reinforcing structure is provided to accurately transmit stress and reduce manufacturing costs by allowing a user to simply perform an assembly process of a steel tube column without cutting of the steel tube column. CONSTITUTION: A concrete filled steel tube column (100) including an internal reinforcing structure comprises a plurality of steel plate members and a unit reinforcing member (200). The steel plate members form a steel tube column. The unit reinforcing member is installed in each steel plate member and comprises a dividing and adding plate and a reinforcing plate member. The dividing and adding plate is attached to each surface unit with welding. The reinforcing plate member is installed in between two dividing and adding plates with the welding and has a trapezoid shape.

0) CN203452439U – PRESTRESSED REINFORCING STEEL BAR AND CONCRETE ...

137) Family number: 55843514 (CN203452439U) © PatBase

Title: PRESTRESSED REINFORCING STEEL BAR AND CONCRETE COMBINED STEEL TUBE TOWER COLUMN

Priority: CN201320505791U 20130819

Family:

Publication number	Publication date	Application number	Application date
CN203452439 U	20140226	CN201320505791U	20130819

Probable Assignee: NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s):(std)**:** NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD ; NANJING LIANZHONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s): NANJING LIANTONG CONSTRUCTION ENGINEERING TECHNOLOGY CO

Inventor(s):(std)**:** ZHAN FUJUN

International class (IPC 8–9): E04H12/16 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN203452439U The utility model discloses a prestressed reinforcing steel bar and concrete combined steel tube tower column. Seamless steel tubes and steel plates are connected alternately to form an annular structure; reinforcing steel bars are arranged in the seamless steel tubes and concrete is filled into the seamless steel tubes; meanwhile, adjacent sections of tower columns are connected with each other through a flange. Because of combining the prestressed steel concrete steel tubes and the steel plates, the prestressed reinforcing steel bar and concrete combined steel tube tower column has the advantages that the construction is convenient and simple, the construction period is short, the using amount of tower column steel is reduced, the stability of the tower column is enhanced, and the cost is greatly saved.

0) CN203403542U – CONNECTING NODE BETWEEN CONCRETE FILLED STEEL T...

138) Family number: 55653218 (CN203403542U) © PatBase

Title: CONNECTING NODE BETWEEN CONCRETE FILLED STEEL TUBE COMBINATION COLUMN AND REINFORCED CONCRETE GIRDERS

Priority: CN201320487202U 20130801

Family:

Publication number	Publication date	Application number	Application date
CN203403542 U	20140122	CN201320487202U	20130801

Probable Assignee: HONGKONG HUAYI DESIGN CONSULTANTS SHENZHEN CO LTD

Assignee(s):(std): HONGKONG HUAYI DESIGN CONSULTANTS SHENZHEN CO LTD

Assignee(s): HONGKONG HUAYI DESIGN CONSULTANTS SHENZHEN CO

Inventor(s):(std): CHEN QIN ; HUANG JUNHAI ; LIU JUN ; WANG XINGFA ; YAN LIJUN ; ZHANG WEI

International class (IPC 8–9): E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN104532964, CN103397704,

Abstract:
Source: CN203403542U The utility model relates to a connecting node between a concrete filled steel tube combination column and reinforced concrete girders. The concrete filled steel tube combination column can intersect with a plurality of reinforced concrete girders at the same connecting node, a hole is formed in a steel tube at the intersected position between the concrete filled steel tube combination column and the corresponding reinforced concrete girders, two open holes are formed in the upper end and the lower end of each reinforced concrete girder and the upper end and the lower end of the combination column, the two open holes are respectively two upper open holes and two lower end open holes, longitudinal ribs in the reinforced concrete girders penetrate through the four open holes to be anchored in core concrete in the steel tubes, annular reinforcing plates are respectively arranged at the upper portions and the lower portions of the upper end open holes and the upper portions of the lower portions of the lower end open holes, and vertical reinforcing plates are arranged on the tube wall between the open holes with the smaller height distance. The connecting node is suitable for the situation where multiple girders obliquely intersect with each other at small angles, and the open holes on the tube wall are dense. When the section heights of the multiple girders are different, the longitudinal girder ribs can conveniently penetrate through the large open holes. The connecting node can effectively control the stress concentrate between open holes of the tube wall, meanwhile reinforces the loop functions of the tube wall where the open holes are formed and guarantees the anti–shock performance.

139) Family number: 55643514 (CN103526950A) © PatBase

Title: CONCRETE–FILLED SQUARE STEEL TUBE AND STEEL BEAM SEMI–RIGID REINFORCING JOINT FOR PREVENTING PROGRESSIVE COLLAPSE

Priority: CN201310519227 20131029

Family:

Publication number	Publication date	Application number	Application date
CN103526950 A	20140122	CN201310519227	20131029

Probable Assignee: UNIV SHANDONG SCIENCE AND TECH

Assignee(s):(std)**:** SHANDONG UNIV OF SCIENCE AND TECHNOLOGY ; UNIV SHANDONG SCIENCE AND TECH

Assignee(s): SHAN DONG UNIV OF SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** CHEN YIZHU ; LIU QING ; QIU JING ; TONG JIANHONG

International class (IPC 8–9): E04B1/58 E04G23/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN103526950A The invention discloses a concrete–filled square steel tube and steel beam semi–rigid reinforcing joint for preventing progressive collapse. The joint comprise a concrete–filled square steel tube column and an I–shaped steel beam. Internal partitions and reinforcing plates are respectively disposed inside and outside the square steel tube walls corresponding to the upper flange and the lower flange of the steel beam. A U–shaped steel connecting plate winds around the square steel tube column wall and is fixed with I–shaped steel beam webs on two sides of the column through high–strength bolts. The beam columns are connected through the U–shaped steel connecting plate and the high–strength bolts. The U–shaped steel connecting plate is also used as a vertical joint connecting plate. The internal partitions under impact load can avoid local buckling of square steel tube column walls. The reinforcing plates can increase joint end bending resistance. The joint is reasonable in structure, uncontinuous beams are integrated while column continuity is also considered, structural integrity and joint ductility are increased, dynamic effect during partial component failure is relieved, and progressive collapse preventing capability is increased.

0) KR20130113709A – IMPROVED SEMI–CONCRETE FILLED TUBE COLUMN STRUC...

140) Family number: 54974953 (KR20130113709A) © PatBase

Title: IMPROVED SEMI–CONCRETE FILLED TUBE COLUMN STRUCTURE

Priority: KR20120036114 20120406

Family:

Publication number	Publication date	Application number	Application date
KR101346736 B1	20140110	KR20120036114	20120406
KR20130113709 A	20131016	KR20120036114	20120406

Probable Assignee: SAMSUNG C AND T CORP

Assignee(s):(std)**:** SAMSUNG C AND T CORP

Assignee(s): SAMSUNG C AND T CORPORATION

Inventor(s):(std)**:** KIM YONG KU ; LA WOON ; LEW YOUNG KEE ; SIM KYU KWAN

International class (IPC 8–9)**:** E04B1/18 E04C3/34 (Advanced/Invention)

Classification Explorer

Cited documents: KR20050122138, JP6073785,

Abstract:
Source: KR20130113709A PURPOSE: An improved semi–concrete filled tube column is provided to obtain economic effects by reducing the thickness of a steel plate and a welding amount. CONSTITUTION: An improved semi–concrete filled tube column (100) includes a polygonal steel plate (110), a plurality of reinforcing bars (120), concrete, column steel frame, and a beam bracket (150). The steel plate includes a hollow in a tube shape and performs a role of a mold. The steel plate resists a shear force after the column is constructed. A plurality of the reinforcing bars is arranged at the corner of the hollow on the steel plate, and the concrete is placed in the hollow of the steel plate. The reinforcing bars and concrete resist an axial force and moment. The column steel frame is installed in the center of the hollow of the steel plate, and the beam bracket is installed on the upper end of the steel plate.

0) CN203373855U – SPLICING–TYPE CONCRETE FILLED STEEL TUBE COMPOS...

141) Family number: 55560096 (CN203373855U) © PatBase

Title: SPLICING–TYPE CONCRETE FILLED STEEL TUBE COMPOSITE COLUMN–STEEL REINFORCED CONCRETE GIRDER NODE

Priority: CN201320397061U 20130704

Family:

Publication number	Publication date	Application number	Application date
CN203373855 U	20140101	CN201320397061U	20130704

Probable Assignee: UNIV TSINGHUA

Assignee(s):(std)**:** TSINGHUA UNIV ; UNIV TSINGHUA

Inventor(s):(std)**:** HAN LINHAI ; SONG TIANYI ; ZHOU KAN

International class (IPC 8–9): E04B1/41 E04B1/58 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103306376, CN103306376,

Abstract:
Source: CN203373855U The utility model belongs to the field of structural engineering of civil engineering, and particularly relates to a splicing–type concrete filled steel tube composite column–steel reinforced concrete girder node. A steel tube and an end plate assembly welded to profile steel are respectively provided with holes, unilateral bolts sequentially penetrate through the end plate assembly and the steel tube to connect the steel tube and the profile steel, columnar longitudinal ribs, columnar hoop ribs, girder longitudinal ribs and girder hoop ribs are sequentially bound outside the steel tube and the profile steel to form girder column connecting nodes, inner concrete is poured inside the steel tube, outer concrete is poured outside the steel tube, and girder concrete is poured outside profile steel. The splicing–type concrete filled steel tube composite column–steel reinforced concrete girder node has the advantages of being convenient to assemble on site, reliable in performance and good in seismic performance and fire–resistant performance, and is suitable for multi–floor or high–rise or super high–rise buildings or other relevant engineering structures.

0) KR20130105249A – A CONCRETE FILLED CIRCULAR STEEL TUBE WITH THE ...

142) Family number: 54823195 (KR20130105249A) © PatBase

Title: A CONCRETE FILLED CIRCULAR STEEL TUBE WITH THE THREE–DIMENSIONAL DIAPHRAM AND THE JOINT STRUCTURE

Priority: KR20120027371 20120316

Family:

Publication number	Publication date	Application number	Application date
KR101335955 B1	20131204	KR20120094708	20120829
KR20130105249 A	20130925	KR20120094708	20120829

Probable Assignee: CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s):(std)**:** CM PARTNERS ARCHITECTURE FIRM CO LTD

Assignee(s): CM PARTNERS ARCHITECTURE FIRM CO

Inventor(s):(std)**:** CHUN KEUM SOK ; HWANG MIN GI ; KIM BONG HYEON ; KIM JAE MAN ; LEE MOON GON ; LEE SANG MYUNG ; LIU WON SOCK ; PARK NAM TAE ; YUN HYUNG CHEL

International class (IPC 8–9): E04B1/24 E04B1/38 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: KR200358912 Y, KR200358912, KR100932468 B1, KR100932468, JP2004116080,

Forward Citations: KR200477104,

Abstract:
Source: KR20130105249A PURPOSE: A connection structure of a concrete filled circular steel pile column including a solid diaphragm and a steel beam is provided to improve accuracy of a correcting work of construction errors in construction fields and allow an operator to easily perform a correcting work. CONSTITUTION: A concrete filled circular steel pile column including a solid diaphragm comprises a circular steel pile column (100), a reinforcing cover plate (110), a latch (120), and the solid diaphragm. The reinforcing cover plate encloses the outer surface of the circular steel pipe column, and the latch is installed on the reinforcing cover plate. The solid diaphragm is mounted on the latch and is connected to the reinforcing cover plate with welding. The solid diaphragm comprises four unit reinforcing bodies (250), and the unit reinforcing body comprises a pair of vertical connection plates (260) and a pair of horizontal reinforcing plates (270). The vertical connection plate includes a mounting groove (261), and the horizontal reinforcing plates are individually and horizontally connected to the upper end and the lower end of the pair of vertical connection plates.

0) KR20130053172A – CONNECTION STRUCTURE FOR CONCRETE FILLED TUBULA...

143) Family number: 53850340 (KR20130053172A) © PatBase

Title: CONNECTION STRUCTURE FOR CONCRETE FILLED TUBULAR COLUMN AND FLATPLATE

Priority: KR20110118783 20111115

Family:

Publication number	Publication date	Application number	Application date
KR101328685 B1	20131114	KR20110118783	20111115
KR20130053172 A	20130523	KR20110118783	20111115

Probable Assignee: POSCO

Assignee(s):(std)**:** POHANG IRON AND STEEL CO ; POSCO ; POSCO ENG AND CONSTR CO LTD ; RES INST IND SCIENCE AND TECH ; POSCO GROUP RES ASS

Assignee(s): POSCO GROUP RESEARCH ASSOCIATION ; RESEARCH INST OF INDUSTRIAL SCIENCE AND TECHNOLOGY ; POSCO ENGINEERING AND CONSTRUCTION CO LTD ; RESEARCH INSTITUTE OF INDUSTRIAL SCIENCE AND TECHNOLOGY ; POSCO ENGINEERING AND CONSTRUCTION CO

Inventor(s):(std)**:** CHUNG KYUNG SOO ; KIM JIN WON

International class (IPC 8–9): E04B1/38 E04B5/43 (Advanced/Invention)

Classification Explorer

Cited documents: KR100946940 B1, KR100946940, KR100770023 B1, KR100770023, KR100710984 B1, KR100710984,

Abstract:
Source: KR20130053172A PURPOSE: A connection structure of a concrete filled steel pipe column and a flat plate is provided to improve the bonding strength of the concrete filled steel pipe column and the flat plate, and to improve workability. CONSTITUTION: A connection structure of a concrete filled steel pipe column(10) and a flat plate comprises a shear reinforcement unit(110) and a fixing member(130). The shear reinforcement unit is included in a bonding position of the concrete filled steel pipe column and the flat plate, and increases the shear intensity of the bonding position including a shear connector. The shear connector is connected to the outer surface of the concrete filled steel pipe column. The fixing member fixes a reinforcing bar(20) to the concrete filled steel pipe column.

0) KR20080057013A – ASSEMBLY STRUCTURE OF CONCRETE FILLED STEEL TUB...

144) Family number: 42404815 (KR20080057013A) © PatBase

Title: ASSEMBLY STRUCTURE OF CONCRETE FILLED STEEL TUBE

Priority: KR20060130305 20061219

Family:

Publication number	Publication date	Application number	Application date
KR101329708 B1	20131114	KR20060130305	20061219
KR20080057013 A	20080624	KR20060130305	20061219

Probable Assignee: RES INST IND SCIENCE AND TECH

Assignee(s):(std)**:** RES INST IND SCIENCE AND TECH ; RESEARCH INST OF INDUSTRIAL SCIENCE AND TECHNOLOGY

Assignee(s): RESEARCH INSTITUTE OF INDUSTRIAL SCIENCE AND TECHNOLOGY

Inventor(s):(std)**:** CHUNG JIA AN ; HWANG JEONG PHIL

International class(IPC 8–9)**:** E04C3/34 E04H12/22 (Advanced/Invention); E04C3/34 E04H12/22 (Advanced/Non–invention); E04C3/30 E04H12/22 (Core/Invention)

Classification Explorer

Cited documents: JP64007606 U1, JP64007606 U, JP10252144 A2, JP1007606 U1,

Abstract:
Source: KR20080057013A An assembly structure of a concrete filled steel tube is provided to transmit axial force and shearing force to a lower foundation and absorb horizontal load by installing a column base to the lower foundation rotatably via a core member. An assembly structure of a concrete filled steel tube comprises a lower foundation(200), a column(100) of a steel tube, a reinforcing plate(130), a through–hole, and a core member(300). The lower foundation is formed of concrete. The column is set on the lower foundation and filled with concrete. The reinforcing plate is fixed on the lower foundation and provided with a support hole(132) at the center. The through–hole is formed at the center of a column base(110) of the column, and corresponding to the support hole. The core member is fixed to the lower foundation, passing through the through–hole and the support hole.

0) JP2005256424A – STEEL FRAME EXPOSED TYPE COLUMN BASE STRUCTURE ...

145) Family number: 32370714 (JP2005256424A) © PatBase

Title: STEEL FRAME EXPOSED TYPE COLUMN BASE STRUCTURE

Priority: JP20040069582 20040311 JP20090190849 20090820

Family:

Publication number	Publication date	Application number	Application date
JP2005256424 A2	20050922	JP20040069582	20040311
JP2009270432 A2	20091119	JP20090190849	20090820
JP5325709 B2	20131023	JP20090190849	20090820

Probable Assignee: OHBAYASHI CORP

Assignee(s):(std)**:** OHBAYASHI CORP ; TOKYO TEKKO KK

Assignee(s): TOKYO TEKKO CO LTD

Inventor(s):(std)**:** FUJITA YOSHIHIRO ; NISHIMURA KATSUHISA ; TANAKA TATSUHIKO

Agent(s): ISSHIKI AND CO

International class (IPC 8–9): E02D27/00 E02D27/08 E04B1/24 E04B1/58 (Advanced/Invention); E02D27/00 E02D27/08 E04B1/24 E04B1/58 (Core/Invention)

International class (IPC 1–7): E02D27/00 E02D27/08 E04B1/24 E04B1/58

Classification Explorer

Cited documents: JPS6058645 U, JP9296457 A2, JP6058645 U, JP60058645 U1, JP60058645 U, JP200313458, JP2003013458 A2, JP2000319900 A2, JP2000319900, JP1203523 A2, JP09296457, JP01203523,

Forward Citations: JP2011226174,

Abstract:
Source: JP2005256424A PROBLEM TO BE SOLVED: To improve the earthquake−resistant performance of a column base and to simplify construction for shortening construction period and reducing cost. SOLUTION: In the steel frame exposed type pedestal structure, foundation lower beam end reinforcements 2, foundation upper beam end reinforcements 3 and stirrups 4 are buried in a foundation concrete 1; U−shaped erection reinforcements 6 for hoop reinforcement binding, hoop reinforcements 7 and anchor bolts 8 are arranged to a column form 5; the upper ends of the anchor bolts 8 are inserted through the insertion holes 11 of the base plate 10 connected to post members 9; nuts 12, 13 are set to the upper parts of the anchor bolts 8 and fastened to introduce an initial tension to the anchor bolts, fixing the base plate 10 to the foundation concrete 1. An unshrinkable grout material 14 is filled in between the base plate 10 and the foundation concrete 1.

0) KR20130114535A – CONCRETE FILLED TUBULAR FOR BUILDING PILLAR CON...

146) Family number: 54980125 (KR20130114535A) © PatBase

Title: CONCRETE FILLED TUBULAR FOR BUILDING PILLAR CONSTRUCTION

Priority: KR20120036976 20120409

Family:

Publication number	Publication date	Application number	Application date
KR20130114535 A	20131018	KR20120036976	20120409

Probable Assignee: TECH KOREA CO LTD K

Assignee(s):(std)**:** TECH KOREA CO LTD K

Assignee(s): K TECH KOREA CO ; K TECH KOREA CO LTD

Inventor(s):(std)**:** JUNG MOO HONG

International class (IPC 8–9): E04B1/18 E04C3/34 (Advanced/Invention)

Classification Explorer

Forward Citations: WO15088297, WO15072792, KR101567983, CN104631707,

Abstract:
Source: KR20130114535A PURPOSE: A concrete filled tube for installing the column of a building and a manufacturing thereof are provided to facilitate the manufacturing of a concrete filled tube (CFC) and to improve the constructability and durability of a column. CONSTITUTION: A concrete filled tube for installing the column of a building comprises a cylindrical tube (10), a hole, a reinforcing member (20), and a fixing member (30). The cylindrical tube is formed by bending a steel plate into a circle or a square shape with three or more angular parts and welding both ends of the steel plate. The hole is formed on the outer circumference of the cylindrical tube at regular intervals. The reinforcing member is inserted into the hole. The reinforcing members are arranged into a lattice (21) inside the cylindrical tube. The fixing member fixes each end of the reinforcing member to be integrated with the cylindrical tube.

0) CN102493554A – ABUTTING JOINT DEVICE OF STEEL LATTICE COLUMN, ...

147) Family number: 51313027 (CN102493554A) © PatBase

Title: ABUTTING JOINT DEVICE OF STEEL LATTICE COLUMN, AND CONSTRUCTION METHOD OF SAME

Priority: CN201110413072 20111213

Family:

Publication number	Publication date	Application number	Application date
CN102493554 A	20120613	CN201110413072	20111213
CN102493554 B	20131016	CN201110413072	20111213

Probable Assignee: BEIJING URBAN CONSTRUCTION AND ZHONGNAN GROUP OF CIVIL ENGINEERING CO LTD

Assignee(s):(std): BEIJING URBAN CONSTRUCTION AND ZHONGNAN GROUP OF CIVIL ENGINEERING CO LTD

Assignee(s): BEIJING URBAN CONSTRUCTION AND ZHONGNAN GROUP OF CIVIL ENGINEERING CO

Inventor(s):(std): GAO ZHIGANG ; HAILIANG YU ; HUANG XIYANG ; JINHUA MA ; LI LING ; LI XINGZHENG ; LING LI ; LOU ZHIHUI ; MA JINHUA ; XINGZHENG LI ; XIYANG HUANG ; YU HAILIANG ; ZHIGANG GAO ; ZHIHUI LOU

International class (IPC 8–9): E02D17/04 E02D5/36 E04B1/58 (Advanced/Invention)

Classification Explorer

Cited documents: WO10004085 A1, KR101050493 B1, JP6306943 A2, CN202370104 U, CN201534978 U, CN201071510 Y, CN101839070 A,

Forward Citations: CN105625424, CN105386459, CN103982039, CN103982039, CN103603432, CN103603432, CN102704696, CN102704696,

Abstract:
Source: CN102493554A The invention discloses an abutting joint device of a steel lattice column, which comprises the steel lattice column, wherein the steel lattice column is composed of four angle steel arm members and batten plates which are surrounded and welded around the four angle steel arm members at intervals; the upper end of the steel lattice column is connected with a movable joint; the upper end of the movable joint is connected with a locator; the movable joint is connected as a rigid main body by four section steel columns and steel surrounding members which are welded around the four section steel columns at intervals; the left side surface and the right side surface of the rigid main body are symmetrical structures; the movable joint is connected with the steel lattice column through an abutting joint screw rod; the locator is composed of a base plate, an adjusting frame support and an adjusting frame; the base plate is a cast–in–place reinforced concrete plate with middle holes; the adjusting frame support is a square–shaped hollow frame with four support legs; the hollow frame is internally filled with concretes; the adjusting frame is a square–shaped hollow frame obtained by welding steel plates and is arranged on the adjusting frame support; and the size of the adjusting frame is the same as that of the adjusting frame support. The abutting joint device of the steel lattice column, and the construction method of the same disclosed by the invention solve the problems in material waste and control of location and construction qualities if the steel lattice column is lengthened directly.

148) Family number: 54954760 (RU133180U) © PatBase

Title: The signaling ENGINEERING barrage OBSTACLE (Machine translation)

Priority: RU20130115095U 20130405

Family:

Publication number	Publication date	Application number	Application date
RU133180 U1	20131010	RU20130115095U	20130405

Probable Assignee: JOINT STOCK CO CENTER OF SPECIAL FACILITIES ENGINEERING RESEARCH AND DESIGN INST OF RADIO ELECTRONIC EQUIPMENT

Assignee(s): JOINT STOCK CO CENTER OF SPECIAL FACILITIES ENGINEERING RESEARCH AND DESIGN INST OF RADIO ELECTRONIC EQUIPMENT

International class (IPC 8–9): E04H17/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: RU133180U 1. Signalling engineering obstacle barrage comprising a carrier part composed of steel uprights that are immersed in the ground and at least one safety barrier mounted to the carrier portion, characterized in that the safety barrier is in the form of concrete panels interconnected interlock means within which is provided with at least one series of horizontal hollow cable channels are provided with cable–sensitive panel elements, wherein each panel is made in the form of a U–shaped support column and a thin–walled concrete continuous slab made as a tseloe.2. Signalling Engineering barrage obstacle according to claim 1, characterized in that the panels are made of reinforced or solid betona.3. Signalling Engineering barrage obstacle according to claim 1, characterized in that the at least one of the horizontal hollow cable channels routed steel cables and secure locking element in the tool joint of each N–th plate, docked part of the obstacle filled with concrete mix for giving a total hardness of signaling engineering barrage prepyatstviyu.4. Signalling engineering obstacle barrage according to claim 1, characterized in that additionally provided protivopodkopnym barrier formed by a flat mesh of steel rods the panel is rigidly attached to the steel support studs bearing portion prepyatstviya.5. Signalling Engineering barrage obstacle according to claim 1, characterized in that it further provided with a barrage of top safety barrier made of

0) CN203188674U – PRESTRESSING FORCE REINFORCED CONCRETE COMBINED...

149) Family number: 54763784 (CN203188674U) © PatBase

Title: PRESTRESSING FORCE REINFORCED CONCRETE COMBINED TYPE TOWER COLUMN STRUCTURE

Priority: CN201320099058U 20130305

Family:

Publication number	Publication date	Application number	Application date
CN203188674 U	20130911	CN201320099058U	20130305

Probable Assignee: NANJING LIANZHONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s):(std)**:** NANJING LIANZHONG CONSTRUCTION ENGINEERING TECHNOLOGY CO LTD

Assignee(s): NANJING LIANZHONG CONSTRUCTION ENGINEERING TECHNOLOGY CO

Inventor(s):(std)**:** ZHAN FUJUN

International class (IPC 8–9): E04H12/16 (Advanced/Invention)

Classification Explorer

Forward Citations: CN103161349, CN103161349,

Abstract:
Source: CN203188674U The utility model discloses a prestressing force reinforced concrete combined type tower column structure. A tower column is formed by single construction member bodies in an assembled mode, each single construction member body is formed by an inner layer corrugated steel plate and an outer layer corrugated steel plate in a symmetrical buckling mode, a plurality of cavity column bodies are formed by the inner layer corrugated steel plates and the outer layer corrugated steel plates, reinforcing steel bars are arranged in the cavity column bodies, and the cavity column bodies are filled with concrete The prestressing force reinforced concrete combined type tower column structure has the advantages that the tower column can be spliced and installed in a multi−sheet and multi−joint mode, the whole tower column can also be prefabricated in a plant, or the corrugated steel plates can be prefabricated after being transported to the site, construction can be conveniently and simply carried out, the construction period is short, using quantity of steel of the tower column is reduced, and cost is greatly saved. The advantages of the finish rolling prestressed reinforcing steel bars, the corrugated steel plates and the concrete are sufficiently used, the finish rolling prestressed reinforcing steel bars, the corrugated steel plates and the concrete tactfully affect each other, the cross section is reduced compared with the cross section of a same−stage concrete type structure, materials are saved, the linearity is attractive, elastic deflection and swinging of the tower column are reduced or largely eliminated, and resistance to capsizing of a tower support is strengthened.

0) US2009084061A – FIRE–PREVENTION STRUCTURE FOR BUILDINGS

150) Family number: 43088336 (US2009084061A) © PatBase

Title: FIRE–PREVENTION STRUCTURE FOR BUILDINGS

Priority: US20070865732 20071002

Family:

Publication number	Publication date	Application number	Application date
US2009084061 AA	20090402	US20070865732	20071002
US8516776 BB	20130827	US20070865732	20071002

Probable Assignee: PAN CHAN PING

Assignee(s):(std)**:** PAN CHAN PING

Inventor(s):(std)**:** PAN CHAN PING

Agent(s): SINORICA LLC; MING

International class (IPC 8–9)**:** E04B1/94 E04C2/54 (Advanced/Invention); E04B1/94 (Core/Invention)

CPC: E04B1/24 E04B1/945

European class: E04B1/24 E04B1/94C

US class: 52/236.3 52/396.01 52/741.3 52/784.11

Classification Explorer

Cited documents: US7596914 BB, US7197854 BB, US7028435 BB, US7007434 BA, US6920728 BB, US6151851 A, US5887396 A, US4333285 A, US4294052 A, US4221092 A, US4211045 A, US3616103 A, US3145811 A, US2007130864 AA, US2005246988 AA, US2005217190 AA, US2004255534 AA, US2004168398 AA, US2004074176 AA, US1978012 A,

Forward Citations: US9677273, US2014373460, US2014013679, JP2015059347,

Abstract:
Source: US2009084061A A fire–prevention structure for buildings includes at least a first fire–prevention district, a fire–prevention floor slab, and a second fire–prevention district. The first fire–prevention district having at least a steel–structured story further includes a plurality of first steel columns and a plurality of first steel beams. The first steel column is a hollow rectangular column with an upper end opening. The first steel beam is connected to a lateral side of the first steel column. The fire–prevention floor slab is constructed on top of the first steel beams and partly inside the end opening of the first steel column. The second fire–prevention district having at least a steel–structured story further includes a plurality of second steel columns and a plurality of second steel beams. The second steel column has a lower end portion further extruding an engagement plate and an engagement column. The engagement plate is fixed to the fire–prevention floor slab through anchor bolting, and the engagement column is protruded into the end opening of the first steel column.