



New connection on: : 05-07-2018 : 22:20:13 - Last disconnection on: : 05-07-2018 : 22:19:18

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 38] ..fi EPODOC

 Database: EPODOC

[EPODOC: SS 38] formwork AND (panel+) AND line AND (beam OR line) AND (connection or join+)

Results in EPODOC 20

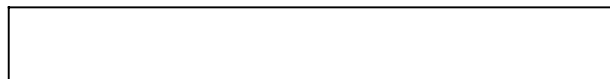
[SS 39] ..v

[EPODOC: SS 39] ..li



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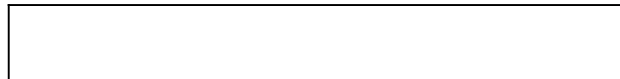
PN - [CN207003997U](#) U 20180213
PR - CN20172691637U 20170614
AP - CN20172691637U 20170614
DT - I
PA - SHENZHEN HUILINDA TECH CO LTD
TI - **Formwork** for building construction
AB - The utility model discloses a **formwork** for building construction, including the template main part, the template main part includes baffle and mounting **panel**, the locating hole has been seted up on the mounting **panel**, two be provided with **joint line** between the template main part, be provided with the connecting plate in the **joint line**, the connecting hole has been seted up on the



connecting plate. Beneficial effect lies in: this **formwork** for building construction installs one additional on traditional template bracket the connecting plate is through with the difference the connecting hole pass through the bolt with locating hole fixed mounting can change corresponding two together distance between the template main part to adapt to the C type channel -section steel of different models, moreover, during concreting construction, in the template bracket corresponding two between the template main part because the existence of connecting plate and can not sliding has guaranteed that the thickness size of concrete equals that the practicality is good.

2/20 © EPODOC / EPO

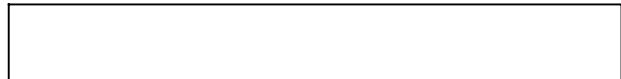
- PN - [CN206941637U](#) U 20180130
- PR - CN20172903275U 20170725
- AP - CN20172903275U 20170725
- DT - I
- PA - QINGHAI POWER TRANS AND TRANSFORMATION ENGINEERING COMPANY; STATE GRID QINGHAI ELECTRIC POWER CO; STATE GRID CORP CHINA
- TI - Round tube **formwork** board of original state soil matrix plinth
- AB - The utility model provides a round tube **formwork** board of original state soil matrix plinth, relates to construction **formwork** technical field, its characterized in that: circle tube **formwork** board (1)is enclosed into cylindricly by rectangle **panel**, prick hoop (2) and cup **joint** in the outside of round tube **formwork** board (1),



and knot (4) is pricked at the both ends of bundle hoop (2) all fixed being provided with, pricking the inside of detaining (4) and being provided with bolt hole (5), bolt (3) and nut (6) will be pricked hoop (2) through bolt hole (5) and fix in the outside of circle tubeformwork board (1), and the outside of circle tube **formwork** board (1) is provided with and pricks hoop (2) more than two. The utility model has the advantages of convenient transport and transportation have alleviated construction operator person's intensity of labour, have effectively alleviated template weight, lightly easy -to -use, can guarantee construction quality, practiced thrift manpower, financial resources and material resources, has reduced the template manufacture cost and be applicable to the high - altitude area transmission **line** basis and pour.

3/20 © EPODOC / EPO

PN - [CN206801033U](#) U 20171226
 PR - CN20172302122U 20170327
 AP - CN20172302122U 20170327
 DT - I
 PA - SHANGHAI SIPO POLYTECHNIC
 TI - A manipulator device that is used for concrete **formwork** and pours
 AB - The utility model relates to a construction machinery equipment technical field, and disclose a manipulator device that is used for concrete **formwork** and pours, including the base, the lower surface of base is seted up flutedly, the equal fixedly



connected with spring of both sides face of recess, the equal fixedly connected with mounting **panel** of opposite face of two springs, the lower surface of two mounting **panels** are articulated respectively to have first splint and second splint, first splint are located the left side of second splint, the middle part of recess both sides face respectively with the both ends fixed **connection** of guide bar, spring and mounting **panel** all cup **joint** the surface at the guide bar. The on -**line** screen storage device comprises a base,

4/20 © EPODOC / EPO

- PN - [CN206635753U](#) U 20171114
- PR - CN20172325644U 20170330
- AP - CN20172325644U 20170330
- DT - I
- PA - SECOND CONSTR ENG CO LTD
- TI - Can pacify circular cone section mould board of tearing open fast
- AB - The utility model discloses a can pacify circular cone section mould board of tearing open fast is formed by arc **formwork** unit concatenation, the arc **formwork** unit includes the template **panel** and sets up first stand and the second stand in template **panel** both sides, the top and the bottom of first stand respectively set up a cardboard, the corresponding position of cardboard respectively sets up a spacing draw -in groove on second stand and the first stand, terminal and the first stand of cardboard are articulated, the front end corresponds the **joint** with the spacing draw -in groove of adjacent arc **formwork** unit. After two arc **formwork** units aligned, rotatory cardboard after the arc **formwork** unit concatenation completion, formed a whole in making the spacing draw -in groove of its entering, pours the in -process at the dado the utility model discloses the phenomenon that **joint line** splits can not appear because the atress removes. Rotatory cardboard makes it roll out spacing draw -in groove, arc **formwork** unit separator during the form removal.

5/20 © EPODOC / EPO

- PN - [CN106193581](#) A 20161207
- PR - CN20161787620 20160831
- AP - CN20161787620 20160831
- DT - I
- CT - || STSE (A)
[US2003033781](#) A1 20030220 [A] (SCHMIDT DONALD L [US])

[A] 1-5
 * 全文 *;
[CN1458358](#) A 20031126 [Y] (QU CHANGGUI [CN])
 [Y] 1-5
 * 权利要求1-3, 附图1-5 *;
[CN2705528Y](#) Y 20050622 [A] (ZHU QINJIANG [CN])
 [A] 1-5
 * 全文 *;
[CN201495768U](#) U 20100602 [A] (BEIJING HONGLING TECHNOLOGY DEV CO LTD, et al)
 [A] 1-5
 * 全文 *;
[CN103290974](#) A 20130911 [Y] (HARBIN HONGSHENG BUILDING ENERGY SAVING SYSTEM R & D CT)
 [Y] 1-5
 * 说明书第【0017】 - 【0018】段, 附图1-2 *;
[CN203213581U](#) U 20130925 [A] (MAO GUOHAI)
 [A] 1-5
 * 全文 *;
[CN103469825](#) A 20131225 [Y] (NO 1 CONSTR ENG CO LTD CHINA CONSTR 3RD ENG BUREAU CO LTD)
 [Y] 1-5
 * 说明书第【0028】 - 【0030】段, 附图1-6 *;
[KR20140101046](#) A 20140819 [A] (KANG CHANG GYU [KR], et al)
 [A] 1-5
 * 全文 *;
[CN204212281U](#) U 20150318 [A] (ZHONGTIAN JOINT ENERGY SAVING CONSTRUCTION DEV TIANJIN CO LTD)
 [A] 1-5
 * 全文 *;
[CN205476436U](#) U 20160817 [Y] (BEIJING YINGLONG WEIYE TECH DEV CO LTD)
 [Y] 3
 * 说明书第【0020】、【0022】段, 附图1-4 *;
[CN206071036U](#) U 20170405 [R] (GUANGZHOU QINGNENG BUILDING MAT CO LTD)
 [R] 1-5
 * 权利要求1-5 *

PA	- GUANGZHOU QINGNENG BUILDING MAT CO LTD
TI	- Building formwork assembly
AB	- The invention provides a building formwork assembly and relates to the field of building construction formworks. Formwork panels are made of foamed cement boards, and plug-pin holes are formed in the upper end face and the lower end face of the formwork panels . Limiting elements are cuboid and placed between every two adjacent formwork panels . Steel rib plug-pins are inserted in the plug-pin holes in the formwork panels . The opposite formwork panels are connected through straight-line-shaped braces, and the formwork panels connected perpendicular to each other are connected through L-shaped braces at joints ; sealing elements are cuboid and placed at the two ends of the building formwork assembly, and the whole building formwork assembly forms a cavity used for pouring a concrete structure. After concrete is poured in the cavity, a permanent building component is formed. When the building formwork

assembly is used for building the building component, installation is easy and quick, the formworks do not need to be detached after concrete pouring, construction efficiency can be greatly improved, construction cost and time are saved, and a built building has good heat-preserving, heat-insulation, sound-insulation and fireproof performance.

6/20 © EPODOC / EPO

PN - [CN205984087U](#) U 20170222
 PR - CN20162265329U 20160401
 AP - CN20162265329U 20160401
 DT - I
 PA - BEIJING ZHI YANG NORTH INT EDUCATION TECH CO LTD
 TI - Real standard platform of car anti -theft system
 AB - The utility model belongs to the technical field of teaching aid is repaired to vapour, concretely relates to real standard platform of car anti -theft system. This real standard platform can according to different motorcycle types through to research of actual motorcycle type anti -theft system and analysis, draw out the **panel** drawing to corresponding motorcycle type, again with the control unit and the corresponding components and parts of installing corresponding motorcycle type car on the **panel**, each components and parts makes its normal work according to the mode for complete anti -theft system system of wiring harness **connection** and gate connecting plate constitution of the **line connection** of actual motorcycle type. The utility model discloses study study on integrating a bench **formwork** type frame to automobile anti -theft system module, avoided the complicated of real vehicle operation and difficulty nature, the distance that has furthered and learnt with advanced automobile circuit of modern times.

7/20 © EPODOC / EPO

PN - [CN104164967](#) A 20141126
 PNFP - CN104164967B B 20160622
 PR - CN20141147020 20140411; CN20141380098 20140801
 AP - CN20141380098 20140801
 DT - I
 CT - || STSE (A)
[JP2001012078](#) A 20010116 [A] (ARAKI TOKUYUKI)
 [A] 1
 * 全文 *;
[CN103206086](#) A 20130717 [A] (SHANGHAI CONSTRUCTION NO 5 GROUP CO LTD)
 [A] 1
 * 全文 *;
[CN103741946](#) A 20140423 [A] (NO 2 CONSTR GROUP CO LTD OF SHANGHAI CONSTR GROUP)
 [A] 1
 * 全文 *;
[CN103321418](#) A 20130925 [A] (SICHUAN NO 3 ELECTRIC POWER CONSTRUCTION COMPANY)

[A] 1

* 全文 *;

[CN102733596](#) A 20121017 [A] (CHENG JUN, et al)

[A] 1

* 全文 *

- PA - (A)
SINOHYDRO BUREAU 11 CO LTD
- TI - (A)
Fair-faced concrete **formwork** construction technology
- AB - (A)
The invention relates to a fair-faced concrete **formwork** construction technology. The structure surface of fair-faced concrete is not decorated. In the construction process, split bolt holes are handled, **panel joints** are handled, and finally visible **joints** are handled. The fair-faced concrete produced with the fair-faced concrete **formwork** construction technology can be formed at a time and is not decorated externally at all, the natural color of concrete is directly adopted as the decorating color, and it is required that **beam** columns and plates are flat and smooth in surface, regular and clear in **line** and consistent in appearance and color, the shape and the size in the axial direction are accurate, cross sections are large, variable-cross-section structures are adopted, lines are regular, corners and edges are clear, **beam** column **joints** are smooth, obvious **connection** marks do not exist, the concrete is solid inside and smooth outside, voids, pits and bubbles are eliminated, embedded parts and embedded bolt sleeves are smooth in surface and accurate in size, split bolts are arranged in order in position, **formwork** edge **joints** are regular, and the surface of the concrete should not be damaged or polluted.

8/20 © EPODOC / EPO

PN - [RU2007101060](#) A 20080720

PNFP - RU2334064 C1 20080920

PR - RU20070101060 20070109

AP - RU20070101060 20070109

DT - I

PA - (C1)
SEROV VALERIY GRIGOR EVICH [RU]

TI - (C1)
SET OF **FORMWORK**

AB - (C1)
FIELD: construction. ^ SUBSTANCE: invention is related to the sphere of construction. Set of **formwork** contains **panels** and links for their **connection**. On internal surfaces of **panels** on their sides there are at least two protrusions made in the shape of half of "dovetail" and widened to the bottom, which are installed on the same vertical **line** in their top and bottom parts. On front surface of **panels** along the edge in the top part and one lateral side there are slots arranged, and in bottom part and opposite lateral side there are protrusions arranged that correspond to slots. Links that have the form of parallelepiped, on the end surfaces of which there are protrusions made in the form of "dovetail". Set is additionally equipped with adapters in the form of parallelepiped,

from one side of which through slot is arranged in the form of "dovetail", shape and dimensions of which correspond to protrusions on assembled **panels**, and from the opposite side there is blind slot arranged in the form of "dovetail", shape and dimensions of which correspond to protrusions in links. ^ EFFECT: simplification of **formwork** design, reduction of labour expenditures and cost of its production and installation. ^ 6 cl, 7 dwg

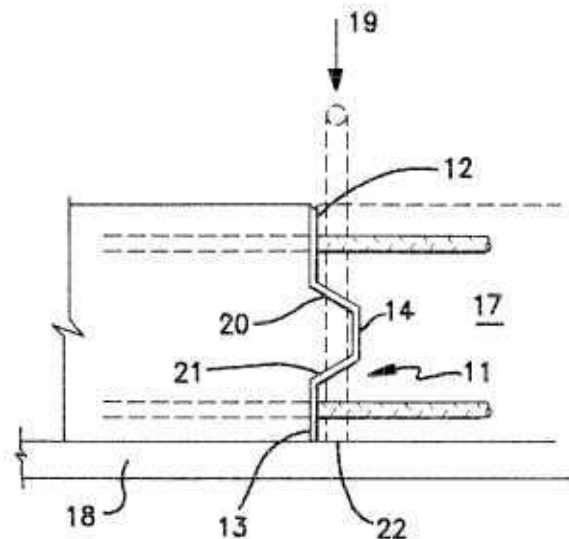
9/20 © EPODOC / EPO

PN - [US5826391](#) A 19981027
 PR - AU1995PN06584 19951115
 AP - US19960749650 19961115
 DT - *
 CT - [US729336](#) A []; [US860479](#) A [];
[US937157](#) A []; [US1255611](#) A [];
[US1538619](#) A []; [US1546005](#) A [];
[US1570970](#) A []; [US1711934](#) A [];
[US1741585](#) A []; [US1988269](#) A [];
[US2027725](#) A []; [US3437018](#) A [];
[US3497172](#) A []; [US3628764](#) A [];
[US5092091](#) A []

CCI - [E01C11/08](#) ; [E01C11/14](#)

TI - Concrete **joint** and method

AB - A **formwork** comprising a metal **panel** 11 having an upper portion 12, a lower portion 13 and a intermediate portion 14 displaced laterally out of the line of the **panel** 11, the portions 12 and 13 have spaced holes 15 through which reinforcing rods 16 project so that the ends of the reinforcing rods can be tied to similar rods in an adjacent slab to be poured in order to occupy the space at 17. A slab poured upon a timber deck 18 and the metal form provided by the **panel** 11 is retained in place by upright bracing rods 19 located at spaced intervals along the form 11 and passing through pairs of holes 20 and 21 in the



intermediate section 14.

10/20 © EPODOC / EPO

- PN - [JPH05156808](#) A 19930622
- PR - JP19910323249 19911206
- AP - JP19910323249 19911206
- DT - I
- FI - E04G13/02; E04G13/02&A; E04G13/02&B; E04G13/04; E04G17/00
- FT - 2E150/AA19; 2E150/AA33; 2E150/BA12; 2E150/CA03; 2E150/CA11; 2E150/CA13; 2E150/DA57; 2E150/EB18; 2E150/FA04; 2E150/FA22; 2E150/FA30; 2E150/FA48; 2E150/HB06; 2E150/HD03; 2E150/HD12; 2E150/HD22; 2E150/MA02X; 2E150/MA03X; 2E150/MA11X; 2E150/MA41X; 2E150/MA42X; 2E150/MA44X; 2E150/MA46X; 2E171/BA01; 2E171/BA09; 2E171/CB04; 2E171/CB10; 2E171/CC01; 2E171/CC06; 2E171/CD01; 2E177/JA01; 2E177/JA09; 2E177/KB04; 2E177/KB10; 2E177/KC01; 2E177/KC06; 2E177/KD01
- PA - MURAKAMI MASAHIRO
- TI - **FORMWORK** DEVICE
- AB - PURPOSE:To assemble **formwork** for forming a concrete column (**beam**) whose cross-sectional surface is polygonal easily and strongly without drilling through holes in respective **formwork panels**, and dispose rod shaped bolts for reinforcement of the **panels** in a crossing state without using a special **joint**. CONSTITUTION:A pair of **panels** 1 for a **formwork** have **panel** supporting frames 2 which are supported at the outside of adjacent **panels**, an eye nut 8 which is installed at the **panel** supporting frame 2 side and diagonally disposed each other are connected by rod-type bolts 22. Besides, the eye nut 8 which is diagonally disposed is disposed in a step-off direction in an inverted posture to each other, with a step difference provided at the axial **line** of a screw hole 9 on the inner edge side and a screw hole 10 on the outer edge side in the eye nut 8 to dispose the rod-type bolts 22 in a crossing state.

11/20 © EPODOC / EPO

- PN - [FR2428122](#) A1 19800104
- PR - FR19780018021 19780609
- AP - FR19780018021 19780609
- DT - *; Rep
- CCI - [E04G17/042](#)
- PA - FERAY JEAN [FR]
- TI - Connector for metal **formwork panels** - has stirrups welded to **panel** edges, with bolts maintaining alignment
- AB - The **connection** for **joining** metal concrete formwork or shutters has stirrups welded to the lateral faces of the forms to be connected. Bolts through adjacent stirrups maintain the forms in **line** and level and provide stiffening against the forces of concrete vibration. The **connection** can be made permanent by straight through bolts or can be made removable by using pivoting eyelet screws and bolts.

12/20 © EPODOC / EPO

PN - [DE4010307](#) A1 19911002

PNFP - DE4010307 C2 19990225

PR - DE19904010307 19900330

AP - DE19904010307 19900330

DT - *; Rep

CT - || STSE (A1 C2)
[DE3517449](#) A1 19870108 [
] (DIEFFENBACHER GMBH
 MASCHF [DE])

CCI - [B27G11/00](#) ; [B27M3/0086](#) ;
[B32B21/04](#)

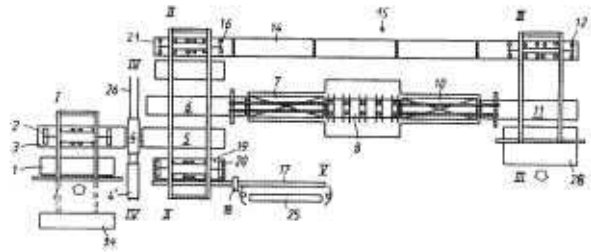
CUI - [B32B7/12](#) ; [B32B21/13](#)

CUA - [B32B2317/16](#) ; [B32B2479/00](#)

PA - (A1 C2)
 DIEFFENBACHER GMBH MASCHF
 [DE]

TI - (A1)
 Automated prodn. of boards
 from wooden blocks of glued
 strips - by forming sheets from
 blocks, inserting glued core layer
 on one block sheet, placing
 second block sheet on top, and
 pressing

AB - (A1)
 Process for producing boards
 from layers of wooden blocks as
 follows. The lower cover layer is
 placed on a conveyor sheet, a
 ready-glued-up core layer is
 placed on top, and the top cover
 layer plus the top caul are
 placed in position by means of a
 vacuum conveyor carriage, the
 cover layers having been placed
 together in readiness
 beforehand. At the start, the one
 cover layer is laid up from its
 strips into a block, with the
 visible faces stacked together;
 this block is passed through a
 glue spreader which applies the
 glue to the edges of the strips;
 the strips are next assembled
 together into the cover layers
 whilst, in parallel operation, the



core layer is glued on top and bottom faces in a separate prodn. **line**. For the prodn. of furniture **panels** a number of strips are taken from a magazine (25) and stacked on a table (17) before being passed through the glue spreader (18) as one block. The strips are next **joined** with one cover layer (at 19). The same procedure applies to both top and bottom cover. At the same time a vacuum conveyor (16) brings a caul, lays it on the stack (6) and justifies the parts. ADVANTAGE - In the process the strips used are all processed automatically and in one operation. They are efficiently treated and can be pressed together to produce furniture **panels** or **formwork** boards.

13/20 © EPODOC / EPO

- PN - [DE2516418](#) A1 19761028
- PR - DE19752516418 19750415
- AP - DE19752516418 19750415
- DT - *; Rep
- CCI - [E04G11/18](#)
- PA - MAIER JOSEF
- TI - Insulation gap between close-set walls concreting **formwork** - comprising two form **panels** elatively adjustable by toggle levers
- AB - The form sheathing is for insulating-**joint**-gaps or similar intervening spaces between two adjacent walls which are to be concreted. Two form **panels** (4) can be mutually adjusted for setting and connected to each other in a set position, by means of toggle levers (5) or similar devices. There may be a number of such levers distributed over the height of the form **panels**, in aligned rows, and evenly spread outcloser together in the area of max. concreting pressure. The **panels** may be set in an acute angled position relative to each other, to produce a conical tapering in the **line** of extension. The two walls standing close together can be concreted in a single process, and form removal is easy.

14/20 © EPODOC / EPO

- PN - [DE2332303](#) A1 19750123
- PR - DE19732332303 19730626

AP - DE19732332303 19730626

DT - *; Rep

CCI - [E04G11/12](#) ; [E04G17/07](#) ; [E04B2/8647](#) ; [E04G17/14](#)

CCA - [E04B2002/8688](#)

PA - MUELLER WILHELM; BAUMSIEGMAR

TI - Permanently retained **panel** concrete wall **formwork** - with U-sectioned iron alignment rails spaced back-to-back by welded crossbars

AB - The iron rails are used in place of the less durable and weather resistant timber units, as in 2102516 to be interconnected in a straight **line** and at 90 deg. to each other. The units' crossbars are welded between their parallel stems. Alignment bar holders are rectangular plates with two arms formed on, and a wedge aperture for horizontal attachment of a U-section by arm insertion, the rail being pressed by the wedge against the U-section flange. Such a holder may provide a T **joint** between two rails.
Linear **connection** of two alignment rails may be provided by two connecting rails, laid on both sides of the stems, with wedges and fishplates.

15/20 © EPODOC / EPO

PN - [CN101215812](#) A 20080709

PNFP - CN101215812B B 20110525

PR - CN2007151010 20071227

AP - CN2007151010 20071227

DT - I

PA - (A)
CHINA RAILWAY ERJU CO LTD [CN]
(B)
CHINA RAILWAY ERJU CO LTD

TI - (A B)
Construction method for passenger transport dedicated **line** bolster embedded large-size ballastless track

AB - (A)
The invention discloses a construction method of long sleeper buried ballastless turnouts with large size of passenger transport dedicated **line**, which comprises: constructing turnouts region base concrete, surveying and setting out of the construction, binding rail bed plate bottom reinforcement, installing turnouts translation trolley, hanging turnouts rail sections and unloading, pushing the translation trolley in the position and connecting turnout, coarsely adjusting turnout, installing regulation stent and disassembling the translation trolley, binding rail bed plate reinforcement and installing **formwork**, fine adjusting and positioning turnouts, pouring rail bed plate concrete, adjusting **formwork** and disassembling stent, welding turnouts steel rail and dispersing stress and closing treatments. The method of the invention has the advantages that the installed long sleeper buried ballastless steel rail **panel** of the passenger transportation dedicated **line** is stable and free from deformation; the rail concrete meets the requirements of China made rail circuit transmission; the rail is linear and is provided with high regularity and high accuracy of construction surveying and controlling; steel rail welding **joint** is of good quality and

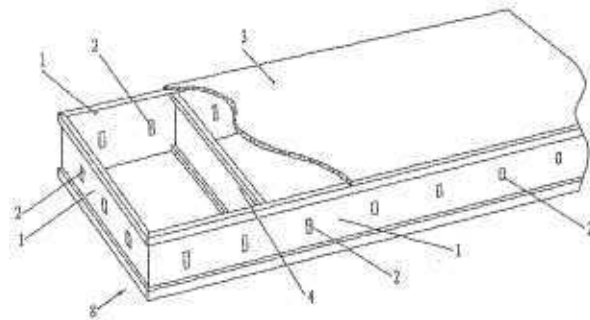
high regularity.

- (B)

The invention discloses a construction method of long sleeper buried ballastless turnouts with large size of a passenger transport dedicated **line**, which comprises: constructing turnout region base concrete, surveying and setting out of the construction, binding rail bed plate bottom reinforcement, installing a turnout translation trolley, hanging turnout rail sections and unloading, pushing the translation trolley in the position and connecting turnout, coarsely adjusting the turnout, installing a regulation stent and disassembling the translation trolley, binding rail bed plate reinforcement and installing a **formwork**, fine adjusting and positioning the turnout, pouring rail bed plate concrete, adjusting the **formwork** and disassembling the stent, welding the turnout steel rail and dispersing stress and closing treatments. The method of the invention has the advantages that the installed long sleeper buried ballastless steel rail **panel** of the passenger transportation dedicated **line** is stable and free from deformation; the rail concrete meets the requirements of China made rail circuit transmission; the rail is linear and is provided with high regularity and high accuracy of construction surveying and controlling; steel rail welding **joint** is of good quality and high regularity.

16/20 © EPODOC / EPO

- PN - [WO2008055398](#) A1 20080515
- PR - CN20062158431U 20061110
- AP - WO2007CN01148 20070409
- DT - *; Rep
- CT - |CN| ISR (A1)
[CN88201062U](#) U 19880831 [X];
[CN2138165Y](#) Y 19930714
[X] (XUE FUYOU [CN]);
[CN2454477Y](#) Y 20011017
[X] (TANG GUOCHENG [CN]);
[CN2494861Y](#) Y 20020612 [X] (HE YULIANG [CN]);
[US4210306](#) A 19800701
[X] (SCHIMMEL VERNON R [US])
- CCI - [E04G9/02](#) ; [E04G17/045](#)
- PA - CHEN CHUANWEI [CN]; LI JIERU [CN]
- TI - COMBINED **FORMWORK** WITH SHALLOW U-SHAPED FRAME
- AB - A combined **formwork** includes a frame (8) composed of a shallow U-shaped profiled bar (1) and a **panel** (3) attached on one side surface of the frame (8). The shallow U-shaped profiled bar (1) forms a plate in the middle part, which is formed with a



plurality of insertion through holes (2) in a **line**, and two flanges extending in the same direction on both sides of the plate viewing from the cross section. When the **formwork** is assembled, the side member of the frame (8) is aligned with that of another frame and the two side members are **join** together with a horizontal bolt (5) passing through the insertion through holes (2), which are aligned with each other, then a vertical bolt (6) is inserted to hold the horizontal bolt (5) in place, thus a plurality of formworks can be connected together each other.

17/20 © EPODOC / EPO

- PN - [CN2516648Y](#) Y 20021016
- PR - CN2001275097U 20011127
- AP - CN2001275097U 20011127
- DT - I
- PA - TANG GUOCHENG [CN]
- TI - Concrete mould
- AB - The utility model relates to a concrete **formwork**, comprising a steel skeleton with combination of a plurality of L-shaped steel rims and ribs, and a plurality of **panels** positioned on the steel skeleton, a plurality of connecting holes arranged on the steel rim. The utility model is characterized in that the upper part of the steel rim forms a rectangled platform in which the **panel** is embedded; the rectangled platform is folded to two layers under the **panel** to form a convex strengthening supporting surface; three connecting holes with the same width in a **line** are arranged on the steel rim, wherein, the upper and the lower holes are strip-shaped holes and the hole in the middle is a cross-shaped hole with a square shape in center and the horizontal edge wider than the vertical edge. The utility model has the advantages of having less liability to deforming and longer service life, adopting shorter heel for **connection** to ensure the quality of concrete and avoid falling of parts, and enabling to be used widely in all kinds of construction projects such as wharf, railway, water conservancy, and residential building.

18/20 © EPODOC / EPO

- PN - [BG108889](#) A 20060331
- PNFP - BG65164B B1 20070430
- PR - BG20040108889 20040928

AP	- BG20040108889 20040928
DT	- I
CT	- STSE (B1) BG33379 A1 19830215 [] (JANEV [BG])
PA	- (A B1) RAEVSKIY ALEKSANDUR [BG]
TI	- (A) HEAT INSULATION NON-REMOVABLE REINFORCED FORMWORK PANELS AND PACKAGES, METHOD FOR THE PRODUCTION AND APPLICATION THEREOF - (B1) HEAT INSULATION NON-REMOVABLE REINFORCED FORMWORK PANEL , PACK OF SUCH PANELS , AND METHOD OF MANUFACTURING SUCH PANEL
AB	- (A) The heat insulation non-removable formwork panel and the formwork packages made of such panels are used in civil engineering for the construction of buildings of monolith structures. The formwork is easily and quickly assembled. There is a facility for pouring the concrete mixture without any previous heating when there are low temperatures, there is no need for extra heat insulation of the external surfaces. The panel comprises an inner heat insulation layer (1) which by means of one of its surfaces is in contact with the concrete mixture, and its other side - to a supporting reinforcement layer (3), to which multiple connection elements (4) are fitted, partially projecting out of one of the surfaces of the inner layer (1), and an external heat insulation layer (2), which by one of its surfaces is in contact with the outside medium, and its other is in contact with the reinforcement layer (3). The four side edges of the panel have stepping structure. The formwork package is made of two heat insulation formwork panels fitted at some distance and interconnected by means of fixing elements (5). - (B1) The invention relates to a heat insulating non-removable reinforced formwork panel and a pack of such panels for the monolithic building of walls, floors, roofs, and other similar building structures, as well as to a method of manufacturing the panel . The panel comprises an inner layer (1) and an outer layer (2) made of heat insulating material based on polymeric foam materials. Between the layers (1 and 2), a reinforcing mesh layer (3) is disposed which is irremovably connected thereto, as well as fixing elements (4) each of them having an opening (6), such fixing elements being evenly arranged at a certain distance from each other on the mesh of the layer (3) and along its contour. The elements (4) are firmly fixed to the layer (3) at the mesh cross points by means of welding or soldering or sticking and protrude from the inner layer (1) so that the opening (6) is free. The vertical and horizontal faces of the panel are step-shaped along the line of connection with an adjacent panel , whereat the outer layer (2) is displaced with respect to the inner layer (1) in a vertical and/or horizontal direction. The pack of heat insulating formwork panels consists of two parallel formwork panels whose inner layers (1) are turned to each other, such formwork panels being connected to each other by means of joining elements (5) fastened to the opposite fixing elements (4) that protrude from the inner layers (1) of the two panels .

PN - [WO0240810](#) A1 20020523

PR - AU2000PR01465 20001115

AP - WO2001AU01482 20011115

DT - *; Rep

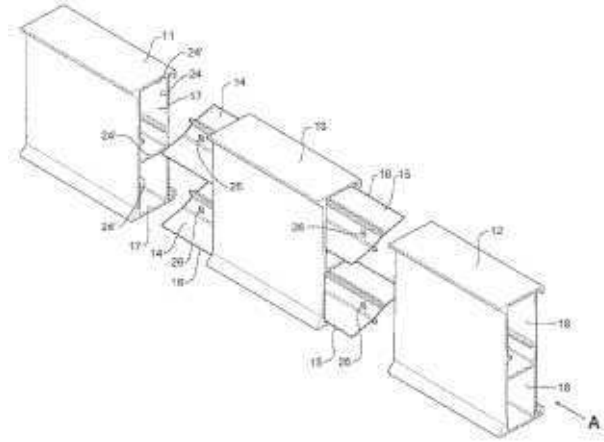
CT - |AU| ISR (A1)
[AU241836B](#) B 00000000 [A];
[GB2216584](#) A 19891011
[A] (PAFILI INT TUBULAR SA [GR]);
[WO9841714](#) A1 19980924
[A] (LE FEVRE PATRICK Y DE [US])

CCI - [B28B7/0014](#) ; [E04G13/00](#)

PA - TILTFORM DESIGN & DEV PTY LTD
[AU]; SLADOJEVIC ROBERT [AU]

TI - CONNECTORS FOR SIDEFORMS
USED IN **FORMWORK** FOR
MOULDING CONCRETE
CONSTRUCTION **PANELS**

AB - This invention provides improved **joiner** means for interconnecting lengths of hollow sideforms (11, 12) in end to end or orthogonal relationship of a form work assembly. A **joiner** piece (13) is provided with outwardly projecting spigots (14, 15) which slidably locate in a sockets or cavities (17, 18) formed in the ends of the sideforms (11, 12). Each of the spigots (14, 15) has a skeletal profile comprised of outwardly projecting flanges (21, 22) which project to opposite sides of a central vertical web (20), with the flanges (21, 22) making edge or **line** contact with the inner surfaces of the sockets (17, 18) so as to provide longitudinally extending clearance passages or channels between each spigot and its associated socket. This minimises the likelihood of the spigot being "cemented" in place after the concrete has set. In another embodiment of the invention, the inner walls of the



sockets are formed with inwardly projecting ribs or flanges which make edge contact with outer surfaces of the spigots.

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PN - [EP1921225](#) A1 20080514

PNFP - EP1921225 B1 20090701

PR - EP20060023370 20061109

AP - EP20060023370 20061109

DT - *; Rep

CT - || STSE (A1)

[DE10037193](#) A1 20010927
[A] (FISCHER WILLIBALD [DE])
[A] 1

* figure 1; claim 1 *

* column 6, line 55 - column 7,
line 13 *;

[EP0532908](#) A1 19930324
[A] (FISCHER WILLIBALD [DE])
[A] 1,11,12

* figure 1; claim 1 *

* column 3, line 25 - column 4,
line 3 *;

[DE29703937U](#) U1 19970424
[A] (TILETSCHKE LOTHAR [DE])
[A] 11,12

* figure 1; claim 1 *;

[DE29606217U](#) U1 19970807
[A] (DAUSEND HANS WERNER
[DE])
[A] 11

* figure 1; claim 1 *;

[DE29901159U](#) U1 19990415
[A] (PECON AG [CH])
[A] 11

* figure 1; claim 1 *;

[DE9419215U](#) U1 19950223
[A] (RACHL HERMANN [DE])
[A] 1-3

* figure 2 *

CCI - [E04B1/6806](#)

CCA - [E04B2005/322](#) ; [E04B2005/324](#)

PA - (A1 B1)
FWR SOLUTIONS GMBH [DE]

TI - (A1 B1)

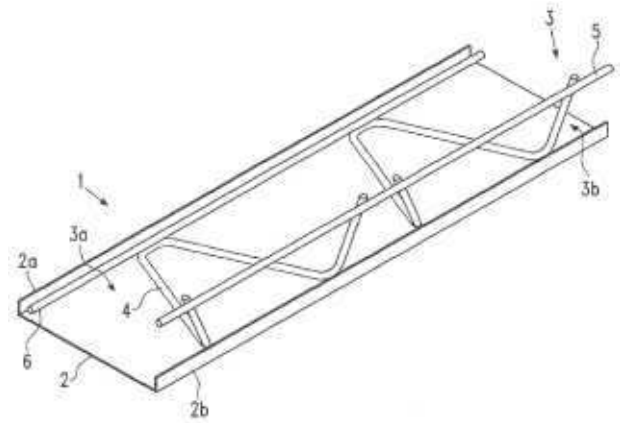


FIG. 1

Forming board with bracing device

AB

- (A1)

The **formwork** component (1) with a **formwork panel** (2), has a reinforcing device (3) which has diagonal struts (4) in a region (3a) which extends parallel to the plane of the **formwork panel**. The diagonal struts are directly or indirectly rigidly connected to the **formwork panel**. The reinforcing device consists of a lattice structure with at least one longitudinal chord (5) and diagonal struts, wherein the regions (3a,3b) are formed by the diagonal struts which are bent basically at right angles. Independent claims are included for the following: (1) a method for producing a **formwork** component in which a lattice structure is bent along a bend **line** basically at an angle of 90 degrees; and (2) a **joint formwork** consisting of two **formwork** components.