

PatBase - Search results 06 July 2020

Search query (2): fn=(48310366 or 45338886 or 45338886 or 56744019 or 48310366 or 48310366 or 48654225 or 45338886 or 55202821 or 61913196 or 52351403 or 52351403 or 54558394 or 54940910 or 54940910 or 54940910 or 54940910 or 61913196 or 61913196 or 51781836 or 61913196 or 66625520 or 66625520 or 45338886 or 66625520 or 65575868 or 74353722 or 69744769 or 69744769 or 69744769 or 69744769 or 60349770 or 66625520 or 42959013 or 46549541 or 42959013 or 48310366 or 53724703 or 57482343 or 57482343 or 61594142 or 55202821 or 59547054 or 69744769 or 66625520 or 66625520 or 42959013 or 49769302 or 49769302 or 55317696 or 48310366 or 58741915 or 49769302 or 51781836 or 57482343 or 57482343 or 57558981 or 53724703 or 61594142 or 57482343 or 66625520 or 57558981 or 45338886 or 66697623 or 73164248 or 76238628 or 73164248 or 73164248 or 43985472 or 48310366 or 45338886 or 48654225 or 61913196 or 17768151 or 28307942 or 28625527 or 34104937 or 31197026 or 31390789 or 36078129 or 22512094 or 8061439 or 30377018 or 28678421 or 23526125 or 29730985 or 23991942 or 15297045 or 15297045 or 32087058)

Results: 45

1) Family number: 42959013 (US2009045128A)

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Title: FILTER FOR REMOVING SEDIMENT FROM WATER

Priority: US20070839303 20070815 US20080014888 20080116 CA20082696482 20080815
CA20082834542 20080815 JP20100521201 20080815 EP20080827298 20080815
WO2008US73311 20080815 US20110283000 20111027 WO2012US62205 20121026
CA20132696482 20131212 US20140252819 20140415 US20190372818 20190402

Family:	Publication number	Publication date	Application number	Application date
	AU2008286748 AA	20090219	AU20080286748	20080815
	AU2008286748 BB	20140417	AU20080286748	20080815
	CA2696482 AA	20100212	CA20082696482	20080815
	CA2696482 C	20140211	CA20082696482	20080815
	CA2834542 AA	20090219	CA20082834542	20080815
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	EP2183041 A1	20100512	EP20080827298	20080815
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	US2009045149 AA	20090219	US20070839303	20070815
	US2012132581 AA	20120531	US20110283000	20111027
	US2014299553 AA	20141009	US20140252819	20140415
	US2019226191 AA	20190725	US20190372818	20190402
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	US8221618 BB	20120717	US20070839303	20070815
	US8287726 BB	20121016	US20110283000	20111027
	US10626592 BB	20200421	US20190372818	20190402
	WO09023832 A1	20090219	WO2008US73311	20080815
	WO13063457 A1	20130502	WO2012US62205	20121026
	ZA201001068 A	20101124	ZA20100001068	20100212

Probable Assignee: CONTECH ENGINEERED SOLUTIONS LLC

Assignee(s):(std): DUBOIS ROLAND ; GALLUCCI BOB ; GARBON JOEL ; GARBON JOEL ANTHONY ; BRAUN STEPHEN ERIC ; IMBRIUM INT LTD ; IMBRIUM SYSTEMS INC ; IMBRIUM SYSTEMS LLC ; LAWLESS DARREN FRANCIS ; LAWLESS DARREN FRANCIS KEVIN ; MONTECO LTD ; MURRAY CHRISTOPHER ADAM ; PERRY SCOTT ; WILLIAMS GREGORY ; WILLIAMS GREGORY RICHARD ; IMBRIUM INTERNATL LTD ; CONTECH ENG SOLUTIONS LLC

Assignee(s): WELLS FARGO BANK NATIONAL ASSOCIATION AGENT AS ; WELLS FARGO CAPITAL FINANCE LLC ; IMBRIUM SYSTEMS CORP ; CONTECH ENGINEERED SOLUTIONS LLC ; GOLDMAN SACHS LENDING PARTNERS LLC

Inventor(s):(std): BRAUN STEPHEN ; BRAUN STEPHEN ERIC ; DUBOIS ROLAND ; GALLUCCI BOB ; GARBON JOEL ; GARBON JOEL ANTHONY ; LAWLESS DARREN ; LAWLESS DARREN FRANCIS ; LAWLESS DARREN FRANCIS KEVIN ; MURRAY CHRISTOPHER ; MURRAY CHRISTOPHER ADAM ; PERRY SCOTT ; SCOTT PERRY ; WILLIAMS GREGORY ; WILLIAMS GREGORY RICHARD

Inventor(s): STEPHEN ERIC BRAUN ; GREGORY RICHARD WILLIAMS ; JOEL ANTHONY GARBON ; CHRISTOPHER ADAM MURRAY ; DARREN FRANCIS KEVIN LAWLESS

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; GRIFFITH HACK; BERESKIN AND PARR LLP SENCRL SRL; BALDOCK SHARON CLAIRE; BOULT WADE TENNANT; BOULT WADE TENNANT LLP; WILKINSON AND GRIST; NADIA AM BADAR; HUNTON AND WILLIAMS LLP;INTELLECTUAL PROPERTY DEPARTMENT; HUNTON AND WILLIAMS LLP INTELLECTUAL PROPERTY DEPARTMENT; HUNTON AND WILLIAMS LLP; THOMPSON HINE LLP; KING ROBERT A 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): B01D B01D21/00 B01D21/24 B01D21/26 B01D24/46 B01D27/02 B01D27/08 B01D27/14 B01D29/11 B01D29/15 B01D29/21 B01D29/50 B01D29/52 B01D29/54 B01D29/62 B01D29/66 B01D29/68 B01D29/72 B01D29/74 B01D35/02 B01D35/10 B01D35/14 B01D35/20 B01D35/30 B01D37/00 B01D39/14 B01D39/16 B01D39/20 C02F1/00 C02F1/50 E03B E03B3/02 E03F1/00 E03F5/14 E04H4/16 (Advanced/Invention); B01D21/00 B01D27/08 B01D27/14 B01D35/30 (Advanced/Non-invention); B01D21/00 B01D27/00 B01D27/08 B01D29/13 B01D29/50 B01D29/62 B01D29/66 B01D35/14 B01D35/30 B01D37/00 C02F1/00 C02F1/50 E03B3/00 E04H4/00 (Core/Invention); B01D E04H (Subclass/Invention)

CPC: E03F1/00 B01D2201/088 C02F1/004 C02F2103/001 B01D21/0012 B01D21/2411 B01D2221/12 B01D29/114 B01D29/15 B01D29/21 B01D29/52 B01D29/54 B01D29/66 B01D29/72 B01D29/74 B01D35/10 B01D2201/0446 B01D2201/0453 B01D2201/0461 B01D2201/291 B01D2201/301 B01D2201/4015 B01D2201/4038 E03F5/14

European class: B01D29/11D B01D29/15 B01D29/21 B01D29/52 B01D29/54 B01D35/10 C02F1/00D6 L01D201/04P4 L01D201/04S L01D201/08K L01D201/29E L01D201/30C L01D201/40B M02F103/00B

US class: 210/108 210/123 210/170.03 210/170.030S 210/256 210/256S 210/299 210/304 210/306 210/323.1 210/323.2 210/323.200S 210/332 210/333.01 210/333.010S 210/340 210/391 210/391S 210/393 210/393S 210/407 210/408 210/411 210/412 210/427 210/435 210/435S 210/455 210/455S 210/457 210/457S 210/483 210/501 210/503 210/505 210/512.1 210/747.3 210/767 210/767S 210/785 210/791 210/791S 210/793 210/793S 210/808 210/808S

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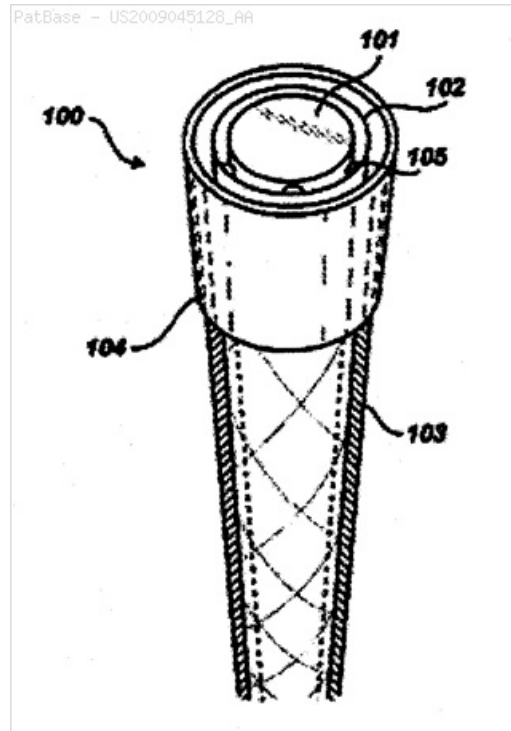
DE202004005849 U1

Forward Citations:

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Abstract:

A system for removing sediment from water is disclosed. The exemplary embodiments described herein disclose a system comprising a filter chamber, having a deck positioned inside to divide it into an upper chamber and a lower chamber. The deck may have a plurality of holes to hold filtration elements and also may have a ridge or a skirt or both. An inlet line may be tangentially connected to the filter chamber and introduce influent liquid into the filter chamber below the deck and outside of the skirt.

**2) Family number: 30377018 (US5810510A)**

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Title: UNDERGROUND DRAINAGE SYSTEM

Priority: AU1993PM02944 19931214 AU19950012688 19941214 NZ19940277457 19941214
 WO1994AU00771 19941214 AU19990035068 19990616

Family:

Publication number	Publication date	Application number	Application date
AT205275 E	20010915	AT19940903719T	19941214
AU199512688 A1	19950703	AU19950012688	19941214
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KR19967006598 A	19961209	KR19967003252	19941214
NZ277457 A	19990629	NZ19940277457	19941214
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US5810510 A	19980922	US19960663042	19960614
WO9516833 A1	19950622	WO1994AU00771	19941214

Probable Assignee: ASTRAL PROPERTY PTY LTD**Assignee(s):(std):** HUMBERTO URRIOLO ; URRIOLO HUMBERTO ; URRIOLO H**Assignee(s):** ASTRAL PROPERTY PTY LTD**Inventor(s):(std):** URRIOLO HUMBERTO ; HUMBERTO URRIOLO

Agent(s): PAUL R TAYLOR AND ASSOCIATES; RIDOUT AND MAYBEE 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 IT JP KE KG KP KR KZ LI LK LR LT LU LV MC MD MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SI SK SN SZ TD TG TJ TT UA US UZ VN

International class (IPC 8-9): B01D21/02 E02B11/00 E03B11/00 E03F1/00 E03F5/10 E03F5/14 (Advanced/Invention); E03F5/10 (Advanced/Non-invention); B01D21/02 E02B11/00 E03B11/00 E03F1/00 E03F5/10 E03F5/14 (Core/Invention)

International class (IPC 1-7): B01D21/02 E02B11/00 E02B13/00 E02B3/16 E03B11/00 E03B7/00 E03F1/00 E03F5/10 E03F5/14

CPC: E02B11/005 E03F1/005 Y10T137/402

European class: E02B11/00 E02B11/00B E03F1/00B4

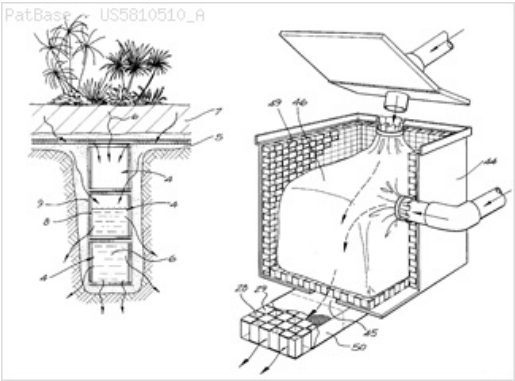
US class: 137/236.1 210/170 210/170.03 405/36 405/43 405/45

[Classification Explorer](#)

Cited documents: WO8909857 A1, US5727901 A, US4793728 A, US4756643 A, SE8107521, GB2266647 B2, GB2266647 A1, FR2659996 A1, EP0439890 A1, EP0373048 A1,

Forward Citations: WO9914445, WO18083346, WO14033485, WO12032391, WO11133970, WO10126480, WO09068019, WO09068019, WO08073818, WO05069895, WO0244088, WO0244088, WO02068086, WO0129334, USD864366, USD811518, USD810858, USD810857, USD682400, USD617867, USD583913, US9951508, US9732508, US9593783, US9593477, US9546044, US9487421, US9464400, US9428880, US9267278, US9206574, US9175463, US9162169, US9139971, US9085887, US9085886, US9085474, US9057188, US9045874, US9017550, US8985897, US8834066, US8770890, US8640387, US8602681, US8590564, US8555586, US8491797, US8366923, US8360100, US8221029, US8162562, US8157991, US8113740, US8062531, US7918996, US7712997, US7686540, US7661904, US7638065, US7621695, US7591610, US7575393, US7524422, US7473055, US7344335, US7341661, US7270747, US7160058, US7114877, US7112283, US7080480, US7056058, US7029201, US7025076, US7022235, US7005064, US7001527, US6991402, US6835314, US6767160, US6730225, US6702517, US6659687, US6648549, US6638424, US6626609, US6602408, US6569321, US6506298, US6379543, US6379541, US6372128, US6350374, US6277274, US2019106873, US2019106864, US2018334393, US2017158432, US2016369491, US2014294508, US2013206662, US2012006412, US2011120922, US2010322711, US2010300019, US2010296871, US2010294705, US2010226721, US2009285632, US2009279953, US2009238646, US2009226260, US2009148235, US2009050215, US2009049760, US2008245710, US2008166182, US2008149188, US2008124175, US2008044231, US2008023383, US2007227094, US2007099477, US2007068878, US2007028514, US2007025817, US2007022655, US2006242915, US2006201860, US2006034662, US2006032807, US2005155285, US2005100401, US2005016931, US2004208697, US2004112837, US2004112809, US2004074846, US2004069715, US2004040598, US2003062319, US10626580, US10625185, US10619331, US10584471, US10562790, US10562789, US10556809, US10519619, US10472815, US10442702, US10364564, US10337175, US10285339, US10267029, US10267028, US10238993, US10214891, US10151083, US10132069, US10047511, TW1525238, RU2504622, NL1004876, LU101278, KR101303860, KR101290305, KR101195242, JP6304678, JP6091933, JP4722127, JP2017115438, JP2015224450, JP2015036488, JP2014169588, JP2008502825, JP2007520651, GB2551981, GB2444550, GB2440449, GB2440449, FR3080389, FR3018835, FR2877360, FR2801914, ES2535576, ES2171091, EP3460133, EP2169127, EP2065523, EP2065523, EP2065523, EP1764446, EP1698395, EP1528168, EP1528168, EP1437305, EP1437305, EP1428940, EP1428940, EP1226315, EP1226315, EP1226315, EP1205390, EP1205390, EP1126090, EP1126090, DE29614106, DE20219139, DE202017106750, DE202013001342, DE102019117024, DE10055323, CN108159744, CN106638890, CN105464203, CN105256697, AU2008207603, AU2005206930, AU2002254044, AU2002254044,

Abstract: PCT No. PCT/AU94/00771 Sec. 371 Date Jun. 14, 1996 Sec. 102(e) Date Jun. 14, 1996 PCT Filed Dec. 14, 1994 PCT Pub. No. WO95/16833 PCT Pub. Date Jun. 22, 1995An underground drainage system comprising piping and storage tanks (4) made from perforated wall modules (8) to form the desired size and configuration, which is wrapped in a water permeable geotextile (9). The system is preferably buried in clean sand (10), whereby rainwater and runoff water is directed to flow through the water permeable geotextile (9) through the perforated wall modules (8) and into the piping (4) where the thus filtered water can travel along the piping (4) to flow back through the walls of the piping (4) into the first available strata where the surrounding ground is not saturated.



3) Family number: 56744019 (CN203755376U)

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Title: COMBINED TYPE RAINWATER STORAGE DEVICE

Priority: CN201410094649 20140315 CN201420116401U 20140315

Family:

Publication number	Publication date	Application number	Application date
■ CN103882910 A	20140625	CN201410094649	20140315
■ CN203755376 U	20140806	CN201420116401U	20140315

Probable Assignee: JIANGSU SOSOON ENVIRONMENTAL ENGINEERING CO LTD

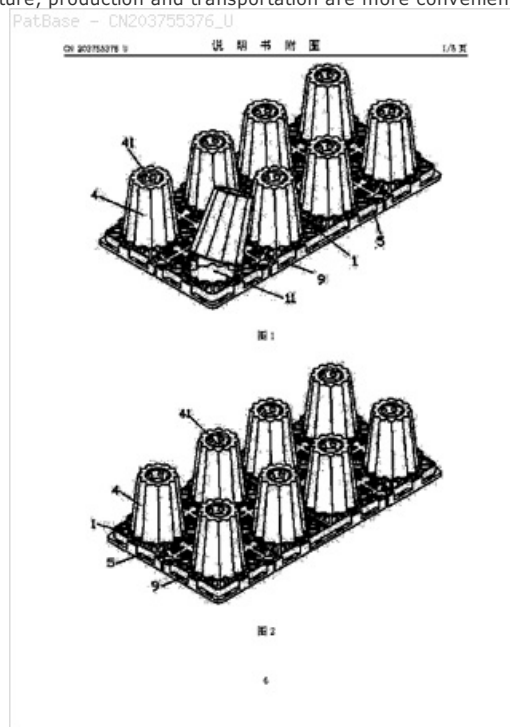
Assignee(s):(std): JIANGSU SOSOON ENVIRONMENTAL ENGINEERING LTD ; JIANGSU SOSOON ENVIRONMENTAL ENGINEERING CO LTD

Assignee(s): JIANGSU SOSOON ENVIRONMENTAL ENGINEERING CO ; ENVIRONMENTAL ENGINEERING CO LTD
JIANGSU JIN CHI

Inventor(s):(std): WU CHONGMIN
International class E03B3/02 (Advanced/Invention)
(IPC 8-9):
CPC: Y02A20/108
[Classification Explorer](#)
Cited documents: JP2012158864 A2,
 DE102012100555 A1
 CN203755376 U, CN202767221 U, CN201254741 Y, CN102575445 A, CN101115888 A,
Forward Citations: WO18162524, CN110382796, CN106351321, CN106284498, CN106284497, CN105705709,
 CN105705709, CN104131593, CN103882910,

Abstract:

The utility model discloses a combined type rainwater storage device. The device comprises a basic base component with a mounting groove in the bottom, a conical supporting component and a coaming plate, the conical supporting component comprises a protruding-shaped conical supporting column with a protrusion at the top end and a concave conical supporting column with a groove in the top end, and the protrusion and the groove are matched for use. The protruding-shaped conical supporting column and the concave conical supporting column are respectively arranged on the mounting groove of the basic base component, and the top end of the protruding-shaped conical supporting column and the top end of the concave conical supporting column are connected together through the protrusion and the groove, wherein the protrusion and the groove are matched. According to the combined type conical supporting column structure, assembly is rapid, the construction and mounting are convenient, the whole device is firmer and stronger in bearing capability, a soil covering layer can reach more than 4 m, and the combined type rainwater storage device is resistant to corrosion and long in service life. The storage space is large, the voidage can reach 96 percent, and due to the detachable combined structure, production and transportation are more convenient.



4) Family number: 31197026 (GB2417733A)

© PatBase

Title: WATER DRAINAGE SYSTEM
Priority: GB20040019642 20040903
Family:

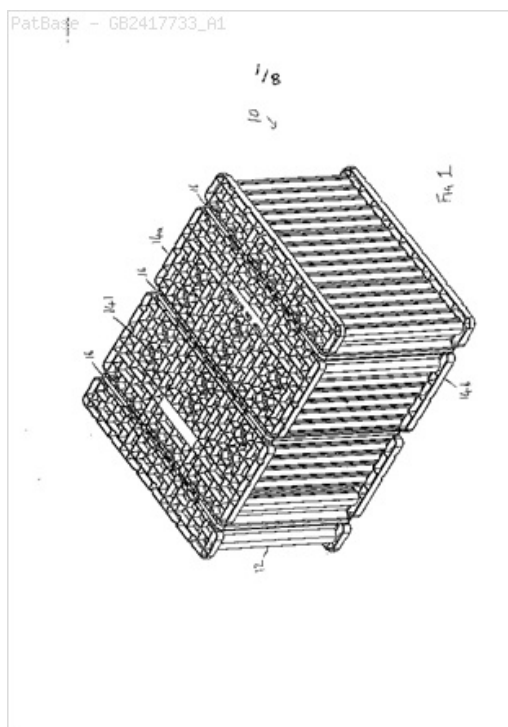
Publication number	Publication date	Application number	Application date
GB200419642 A0	20041006	GB20040019642	20040903
GB2417733 A1	20060308	GB20040019642	20040903
GB2417733 B2	20080130	GB20040019642	20040903

Probable Assignee: MARLEY EXTRUSIONS
Assignee(s):(std): MARLEY EXTRUSIONS
Assignee(s): MARLEY EXTRUSIONS LIMITED ; MARLEY EXTRUSIONS LTD
Inventor(s):(std): POTTS ROLAND FREDERICK
Inventor(s): ROLAND FREDERICK POTTS
International class E03B11/02 E03B3/03 E03F1/00 E03F5/10 (Advanced/Invention);
(IPC 8-9): E03B11/00 E03B3/00 E03F1/00 E03F5/10 (Core/Invention)
CPC: Y02A20/106 Y02A20/108 E03F1/002 E03F1/005 E03B3/03 E03B11/02
European class: E03B11/02 E03B3/03 E03F1/00B4
[Classification Explorer](#)

Cited documents: US5624204 A, US5030343 A, JP2003155769 A2, EP1416099 A2, DE9412093 U1, DE2521374 A1,
Forward Citations: WO16042141, WO13110629, WO09029562, US9957987, US9732508, US8833708, US8292117,
 US7621695, US7591610, US2017292260, US10626580, US10267029, US10151083, US10132069,
 RU2663991, RU2600181, RU2600181, NL1040956, JP6069260, JP2016020571, GB2440398, FR3011855,
 FR2916774, EP3194675, EP2862982, EP2807312, EP2463449, EP2463449, EP2083126, EP1997970,
 EP1818463, DE102016115274, CN107075850, CN107075850, CN104066903, CN104066903,
 AU2007329188,

Abstract:

A water drainage system 10 having a water storage unit 12 comprising a plurality of adjoining vertical cells 121, wherein the water storage unit is provided on a lattice panel 14b that allows horizontal flow of the water between adjoining vertical cells. Preferably, the vertical cells can form a hexagonal structure, which provides a strong storage unit. The lattice panel 14b also provides additional stiffness to the water drainage system and reinforces the storage unit against lateral forces. The lattice panel has at least one spigot 141 shaped for insertion into a vertical cell so as to position and hold the water storage unit on the lattice panel. Preferably, two lattice panels 14a, 14b are provided to sandwich the water storage unit, each including rounded shoulders for use with fastening straps (16, Fig 1).

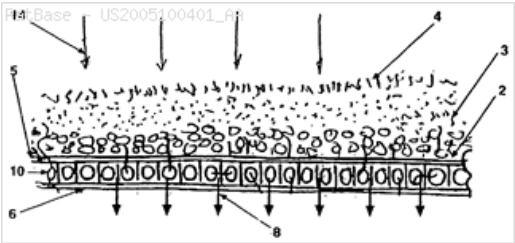
**5) Family number: 15297045** (US2005100401A)

© PatBase

Title:	TRANSPORT CORRIDOR DRAINAGE SYSTEMS																																																				
Priority:	AU1999PP08843 19990224 US20010914333 20010824		AU20000027857 20000224 AU20030204302 20030523		WO2000AU00132 20000224 US20030722981 20031128																																																
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Publication number	Publication date	Application number	Application date																																																		
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WO0050142 A3	20010222	WO2000AU00132	20000224																																																		
Probable Assignee:	ASTRAL PROPERTY PTY LTD																																																				
Assignee(s):(std):	URRIOLA H ; URRIOLA C ; URRIOLA HUMBERTO ; URRIOLA CHRISTIAN ; ASTRAL PROPERTY PTY LTD																																																				
Assignee(s):	CHRISTIAN URRIOLA ; ASTRAL PROPERTY PTY LIMITED ; HUMBERTO URRIOLA																																																				
Inventor(s):(std):	URRIOLA HUMBERTO ; URRIOLA CHRISTIAN																																																				
Inventor(s):	HUMBERTO URRIOLA ; CHRISTIAN URRIOLA																																																				
Agent(s):	PAUL R TAYLOR AND ASSOCIATES; ASTRAL PROPERTY PTY LTD																																																				
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 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																																																				
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International class (IPC 1-7):	B01D E01C13/00 E01C13/08 E01C3/06 E01C9/00 E01F5/00 E02B11/00 E03F1/00																																																				
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Classification Explorer																																																					
Cited documents:	WO0129334 A1, WO0050142 A2, US6736569 BB, US6736569 BA, US6736569 B1, US6095720 A, US5848856 A, US5810510 A, US5447389 A, US5250340 A, US5030343 A, US4840515 A, US4572700 A, US3990247 A, JP11229379 A2, FR2730512 A1, EP0455260 A1, EP0355014 A1, EP0244651 A2,																																																				

Forward Citations: WO18068095, WO16183184, WO11003587, WO05069895, WO05069895, US9986693, US9938670, US9809960, US9775304, US9758939, US9732509, US9593783, US9593477, US9546044, US9522784, US9487421, US9315961, US9206574, US9175463, US9162169, US9161496, US9139971, US9085887, US9085886, US9057188, US8985903, US8985897, US8858804, US8590564, US8501016, US8398046, US8360100, US8240946, US8172486, US8113740, US8065831, US7722287, US7677835, US7676987, US7621695, US7591610, US7544010, US7080480, US6779946, US2018179748, US2018135292, US2017158432, US2017081830, US2016031645, US2015181813, US2014294507, US2014158597, US2013309012, US2011253238, US2011097146, US2009279953, US2009226260, US2009049760, US2008175662, US2008166182, US2008072513, US2008063935, US2007227094, US2007217866, US2007028514, US2007022655, US2006123704, US2005155285, US10634427, US10625185, US10612227, US10584471, US10563392, US10435880, US10415260, US10415225, US10337175, US10285339, US10246843, US10238084, US10208434, US10053853, US10030337, KR100888493, JP6349485, JP6198592, JP5745396, JP2017096079, JP2015108218, JP2011522522, JP2007520651, ITMI20081733, ITB220130019, ITBO20110633, IT201800006834, GB2476534, GB2476534, GB2475551, GB2475551, GB2463680, GB2459920, GB2459920, FR2990705, FR2990705, FR2870138, EP3334694, EP2821550, EP2821550, EP2452018, EP2169116, EP2071079, EP2041368, EP2041368, EP1884596, EP1764446, EP1595588, EP1528168, EP1528168, EP1431461, EP1226315, EP1226315, EP1226315, DE102013103122, DE102009032701, CN108894075, BE1019912, AU2005206930,

Abstract:
A drainage structure having perforated parallel top and bottom plates (5 and 6) separated by spacer members (7). A web (15) joins adjacent spacer members (7) and has a curved profile (17) such that water spilling over the web (15) does so, at a varying velocity profile to increase oxygenation of the water. This drainage structure (1) can also be filled with good drainage soil (42) and planted with grass (4) to filter and retain water that passes therethrough, with a layer of filter medium (42) below and a water permeable drain (1 and 24) below the filter medium (42), to transport water into the substrate and into a reticulation tank (57) where the water can percolate back into the soil.



6) Family number: 59547054 (US2016312427A) © PatBase

Title:	EMBANKMENT SUPPORT			
Priority:	ZA20130009288 20131210 WO2014IB66753 20141210			
Family:	Publication number	Publication date	Application number	Application date
	AU2014363050 AA	20160728	AU20140363050	20141210
	GB201611899 A0	20160824	GB20160011899	20141210
	GB2537291 A1	20161012	GB20160011899	20141210
	IN201617021099 A	20160831	IN201617021099	20160620
	US2016312427 AA	20161027	US20140103624	20141210
	WO15087249 A1	20150618	WO2014IB66753	20141210
	ZA201604677 A	20180228	ZA20160004677	20160708

Probable Assignee: HISSES BLOCKS PTY LTD
Assignee(s):(std): DE GROOT TREVOR ; HISSES BLOCKS PTY LTD
Inventor(s):(std): DE GROOT TREVOR ; TREVOR DE GROOT
Agent(s): WRAYS PTY LTD; DM KISCH INC
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): E02B E02B3/04 E02B3/14 (Advanced/Invention)
CPC: E02B3/04 E02B3/14
US class: 1/1 405/15

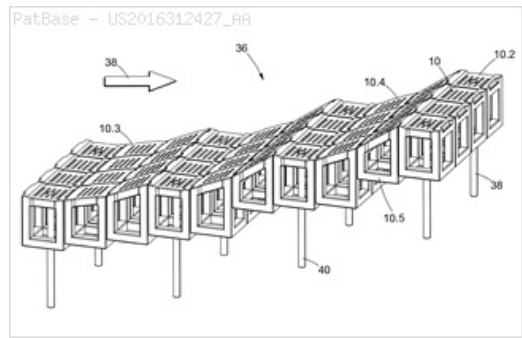
[Classification Explorer](#)

Cited documents: WO10081681 A2, WO09128117 A1, US7704011 BB, US7677835 BB, US7621695 BB, US7591610 BB, US6648549 BA, US6076993 A, US5373661 A, US2016265209 AA, US2015167256 AA, US2014291221 AA, US2014105684 AA, US2011253238 AA, US2010021236 AA, US2009279953 AA, US2008166182 AA, US2008044231 AA, US2003188505 AA, GB2197370 A1, FR2927913 A1, EP2592194 A1, EP2495373 A2, EP1932975 A1, EP1932974 A1, EP1743984 A1,

DE102006009401 A1

Forward Citations: US2019112770, US10557238,

Abstract:
This invention relates to an embankment support (10), and more particularly to an embankment support (10) for the protection and stabilisation of sea embankments against wave impact and erosion. According to a first aspect of the invention there is provided an embankment support (10) comprising an anchoring portion for anchoring the support in an embankment, connecting means for allowing interlocking of the embankment support with an adjacent embankment support, and an operatively upper side connected to the anchoring portion for receiving flowing water and directing the water along the operatively upper side of the embankment support, thereby dispersing the water in a desired direction and reducing erosion of the embankment.



7) Family number: 32087058 (US2005155285A)

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Title: INTEGRATED TREE ROOT AND STORM WATER SYSTEM

Priority: US20040759493 20040115 CA20052552348 20050114 CA20052829599 20050114
CA20052976915 20050114 WO2005US01410 20050114 US20060451218 20060612
US20060451549 20060612 CA20132552348 20131021 CA20172829599 20170829

Family:	Publication number	Publication date	Application number	Application date
	AU2005206930 AA	20050804	AU20050206930	20050114
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	WO05069895 A3	20060420	WO2005US01410	20050114

Probable Assignee: DEEPROOT GREEN INFRASTRUCTURE LLC

Assignee(s):(std): URBAN ROOT L L C ; URBAN JAMES ; RAY CHARLES JULIAN ; RAY CHARLES GRAHAM ; KEY ALBERT L ; JAMES MICHAEL ; DEEP ROOT PARTNERS LP ; DEEP ROOT GREEN INFRASTRUCTURE LLC ; DEEPROOT GREEN INFRASTRUCTURE LLC ; DEEPROOT GREEN INFRASTRUCTURE LLC ; DEEPROOT INFRASTRUCTURE LLC ; RAY CHARLES G ; RAY CHARLES J

Assignee(s): URBAN ROOT LLC ; DEEP ROOT PARTNERS L P

Inventor(s):(std): KEY ALBERT L ; RAY CHARLES G ; RAY CHARLES J ; URBAN JAMES ; RAY CHARLES JULIAN ; RAY CHARLES GRAHAM ; MICHAEL JAMES ; JULIAN RAY CHARLES ; JAMES URBAN ; JAMES MICHAEL ; GRAHAM RAY CHARLES ; CHARLES JULIAN RAY ; CHARLES GRAHAM RAY ; ALBERT L KEY

Inventor(s): RAY CHARLES ; KEY ALBERT

Agent(s): PIZZEYS ; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD ; SMART AND BIGGAR ; DLA PIPER CANADA LLP ; DLA PIPER RUDNICK GRAY CARY US LLP ; INNOVATION COUNSEL 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 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 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): A01G1/00 A01G1/04 A01G13/00 A01G13/02 A01G25/00 A01G29/00 A01G9/00 A47G7/08 E01C11/24 E01C3/00 E01C9/00 E02B11/00 E03B11/14 E03B3/03 E03F1/00 E21F17/16 (Advanced/Invention); A01G13/02 A01G25/00 A01G29/00 A01G9/00 A47G7/00 E01C11/24 E01C9/00 E02B11/00 E03B11/00 E03B3/00 E03F1/00 E21F17/00 (Core/Invention)

International class (IPC 1-7): A01G29/00 A01G9/00 A47G7/08

CPC: A01G13/0237 E01C9/005 E03F1/005 Y02A10/33 Y02A20/408 Y02A30/32

European class: A01G13/02E E01C9/00D2 E03F1/00B4

US class: 1/1 210/170 210/170.03 405/43 405/53 47/1.01F 47/101F 47/32.7 47/32.700P 47/327 47/48.5 47/48.500P 47/485 47/79

[Classification Explorer](#)

Cited documents: WO0050142 A2, WO0050142, US6779946 BA, US6648549 BA, US6569321 BB, US6569321 BA, US6540436 BB, US6540436 BA, US6537446 BA, US6428870 BA, US6277274 BA, US6248870 BA, US6237283 BA, US6095718 A, US5810510 A, US5460867 A, US5383744 A, US5383302 A, US5322629 A, US5249885 A, US5195284 A, US5131196 A, US5086594 A, US5030343 A, US4983069 A, US4982533 A, US4937973 A, US4771572 A, US4135330 A, US4060991 A, US3823508 A, US3654903 A, US3443385 A, US2004076473 AA, US2003082359 AA, US2002179509 AA, US2001045383 AA, JP9296486 A2, JP63268823 A2, JP4099411 A2, JP2161008 A2, JP2003201722 A2, JP2003113625 A2, JP2002097707 A2, JP2001323520 A2, JP2001098591 A2, JP2000073418 A2, JP10280493 A2, GB2048635 A1, EP0266701

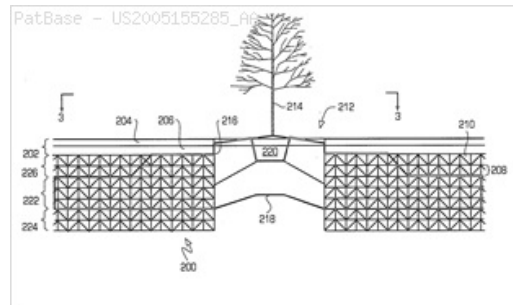
A2, DE3502296 A1, DE3441098 A1, DE3202684 A1,

Forward Citations:

WO19199698, WO18068095, WO16042140, WO15166378, WO15044676, WO14161039, WO12032391, WO11042415, WO11041850, WO11017766, WO08035964, WO08030238, USD632209, USD624846, US9951508, US9809960, US9775304, US9775303, US9771706, US9732508, US9598850, US9522784, US9512606, US9506233, US9469981, US9328500, US9328027, US9303365, US9085474, US8753037, US8701343, US8608401, US8602681, US8555586, US8496810, US8333885, US8318015, US8287728, US8110105, US8065831, US7752805, US7621695, US2019106873, US2019106864, US2018365348, US2017238485, US2017158432, US2017081830, US2017037610, US2016165815, US2016097175, US2016031645, US2014124424, US2011139136, US2011108559, US2010300019, US2010200480, US2009279953, US2009255868, US2008166182, US2008155891, US2008063935, US10696573, US10626580, US10606964, US10563392, US10415260, US10294640, US10285339, US10267029, US10151096, US10151083, US10132069, US10118846, NL1040958, JP5006072, JP2010502215, JP2010037941, JP2008248667, JP2008231681, JP2007224652, ITPN20110054, EP3458371, EP3194674, EP3048873, EP2981648, EP2470722, EP2464788, EP2464788, EP2325404, EP2059114, EP2059114, EP1932975, CN107143021, CN107143021, CN102613020, AU2014246660, AU2011213910,

Abstract:

A structural cell system is disclosed for supporting hardscape areas in a way that enables tree root growth and accommodates filtering, retention, storage and infiltration of storm water while preventing hardscape damage. The system includes a plurality of structural cells capable of being positioned below a hardscape. The structural cells are designed to have openings that are sized to accept tree roots. The system has one or more permeable barriers around the structural cells with a way for water to flow into the plurality of structural cells flow out of the structural cells.



8) Family number: 22512094 (US3280569A)

© PatBase

Title: GROIN

Priority: US19640344056 19640211

Family:

Publication number	Publication date	Application number	Application date
US3280569 A	19661025	US19640344056	19640211

Probable Assignee: PERMAGROIN CO INC

Assignee(s):(std): PERMAGROIN CO INC ; PERMAGROIN COMPANY INC

Inventor(s):(std): WOSENITZ WILLIAM B

International class (IPC 8-9): E02B3/06 (Advanced/Invention); E02B3/06 (Core/Invention)

International class (IPC 1-7): E02B3/06

CPC: E02B3/06

European class: E02B3/06

US class: 405/34

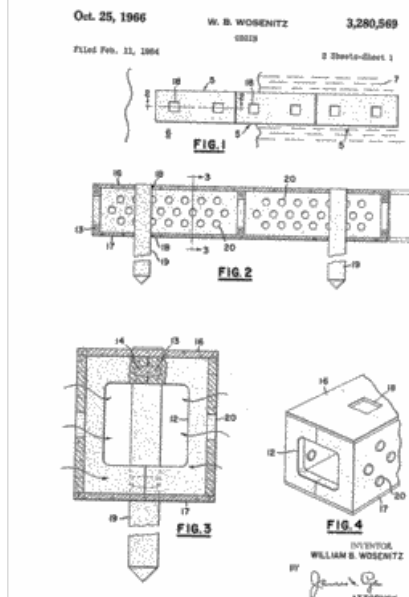
[Classification Explorer](#)

Cited documents: US954283 A, US3195266 A, US3100953 A, US2645114 A, US2514119 A, US2474786 A, US2135337 A, US1277829 A, FR730189 A,

Forward Citations: WO11035850, WO08059083, WO07054130, US7621695, US6913418, US5902071, US5015121, US4978247, US4784520, US4479740, US4367978, US4341489, US3995434, US3914947, US3878684, US2008166182, US2004076477, US10550534, US10400406, ES2299394, EP2302135, EA11474, EA011474, CN102182160,

Abstract:

(Claim 1) 1. A permeable groin of the character described comprising, an elongated box-like structure composed of a plurality of units placed in end-to-end relation and defining a tunnel through them, each unit consisting of a pair of substantially identical wall-forming sections of molded concrete, the side walls of said sections having a multiplicity of openings through them, the groin being closed at the top by a slab and also closed at the bottom by a similar slab, said slabs being anchored to the wall-forming sections, each of the wall-forming sections having U-shaped legs at its ends, the legs on one wall-forming section being in abutting relation with the legs on the opposite section to provide for spacing between the walls of the wall-forming sections, the slabs at the upper and lower ends of the side walls being apertured, the groin being positioned on a beach with the tunnel therethrough extending from the beach into the body of water on which the beach fronts, piling extending through the slabs and extending through the groin units and into the beach and the bed of the body of water.

**9) Family number: 23526125** (US6428870B)

© PatBase

Title: SUBSURFACE FLUID DRAINAGE AND STORAGE SYSTEM AND MAT ESPECIALLY UTILIZED FOR SUCH SYSTEM

Priority: US20000748292 20001226

Family:	Publication number	Publication date	Application number	Application date
	US6428870 BA	20020806	US20000748292	20001226

Probable Assignee: BOHNHOFF WILLIAM W

Assignee(s): BOHNHOFF WILLIAM W

Inventor(s):(std): BOHNHOFF WILLIAM W

Inventor(s): WILLIAM W BOHNHOFF

International class
(IPC 8-9): E02B11/00 (Advanced/Invention);
E02B11/00 (Core/Invention)

International class
(IPC 1-7): B32B3/10

CPC: E02B11/00 E03F1/002 Y10T428/139 Y10T428/16 Y10T428/169 Y10T428/17 Y10T428/24273

European class: E02B11/00 E03F1/00B

US class: 405/50 428/131 428/36.9 428/369 428/44 428/52 428/53 52/180 D14/327

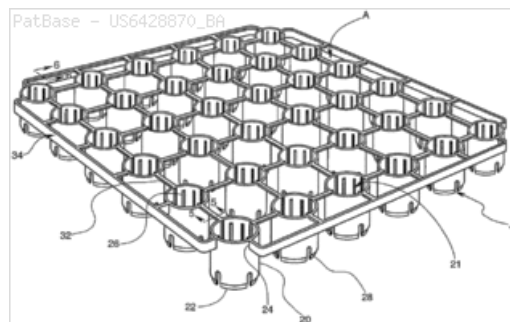
[Classification Explorer](#)

Cited documents: US5250340 A,

Forward Citations: WO10053946, WO07092828, WO07092828, USD888192, USD880730, USD849970, USD806272, USD795383, USD771837, USD685924, USD656250, USD618368, USD571024, US9809960, US9775304, US9593783, US9522784, US9303365, US9206574, US9161496, US9139971, US9085887, US9085886, US8955268, US8881482, US8753037, US8696241, US8683769, US8608401, US8596023, US8505256, US8424257, US8407951, US8398332, US8397466, US8225566, US8182179, US7938597, US7900416, US7815395, US7722288, US7621695, US7591610, US7578635, US7503726, US7341401, US7290958, US7201538, US7108454, US7108454, US7080480, US2017158432, US2017081830, US2016031645, US2014294507, US2012141203, US2012057932, US2011108559, US2011097151, US2010260546, US2010247984, US2009169303, US2009049760, US2008219770, US2008216437, US2008166182, US2008095580, US2008056824, US2007297686, US2007181197, US2007028514, US2007022655, US2006275082, US2006120804, US2006120803, US2005155285, US10626580, US10415260, US10285339, US10267004, US10045490, US10030337, JP2007211585, EP2463449, EP2325404, CN105862967,

Abstract:

Tubular segments may be nestably interconnected, with the lower end of one tubular segment compressively inserted into the upper end of another tubular segment. A mat formed of such tubular members, and a fluid storage system formed of a plurality of such vertically stacked mats, are also disclosed.



10) Family number: 36078129 (US2007217866A)

© PatBase

Title: DRAINAGE CELL MODULAR RAIN TANK AND WATER STORAGE SYSTEM

Priority: AU20060901293 20060314 AU20060901294 20060314 US20060534596 20060922
US20060534603 20060922 AU20070224997 20070306 AU20070224998 20070306
WO2007AU00278 20070306 WO2007AU00279 20070306 CA20072581624 20070314
CA20072581590 20070314

Family:	Publication number	Publication date	Application number	Application date
	AU2007224997 AA	20070920	AU20070224997	20070306
	AU2007224998 AA	20070920	AU20070224998	20070306
	CA2581590 AA	20070914	CA20072581590	20070314
	CA2581624 AA	20070914	CA20072581624	20070314
	CA2581624 C	20120703	CA20072581624	20070314
	CN101405203 A	20090408	CN200780009256	20070306
	CN101405203 B	20110112	CN200780009256	20070306
	CN101405204 A	20090408	CN200780009276	20070306
	US2007217866 AA	20070920	US20060534603	20060922
	US2007227094 AA	20071004	US20060534596	20060922
	US7677835 BB	20100316	US20060534603	20060922
	WO07104083 A1	20070920	WO2007AU00278	20070306
	WO07104084 A1	20070920	WO2007AU00279	20070306

Probable Assignee: LARACH OSCAR

Assignee(s):(std): OSCAR LARACH ; LARACH OSCAR

Inventor(s):(std): OSCAR LARACH ; LARACH OSCAR

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; GRIFFITH HACK; LARACH OSCAR; WATER RECYCLING SOLUTIONS COM PTY LTD; FINLAYSON AND SINGLEHURST; TROJAN LAW OFFICES

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 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): B65D6/08 B65D6/16 B65D88/52 B65D88/76 B65D90/02 B65D90/08 B65D90/20 E02B11/00 E02B13/00 E03B11/14 E03B3/02 E03F1/00 E03F5/10 E04C2/32 E04C2/38 F16S1/02 (Advanced/Invention); B65D6/16 B65D88/00 B65D90/02 B65D90/12 E02B11/00 E02B13/00 E03B11/00 E03B3/00 E03F1/00 E03F5/10 E04C2/32 E04C2/38 F16S1/00 (Core/Invention)

CPC: B65D88/022 E02B11/005 B65D90/023 B65D90/027 Y02A10/33 Y02A20/408 E03B3/03 E03F1/005 Y02A20/106 Y02A20/108

European class: B65D88/02B B65D90/02D B65D90/02F E02B11/00B E03B3/03 E03F1/00B4

US class: 405/36 405/36P 405/39 405/45 52/630 52/630P

[Classification Explorer](#)

Cited documents: ZA9800512 A, WO0129334 A1, US7108454 BB, US7028434 BB, US6966155 BB, US6779946 BA, US6751912 BB, US6736569 BB, US6648549 BA, US6539681 BA, US6361248 BA, US6186345 BA, US6128881 A, US6098354 A, US5992106 A, US5848856 A, US5810510 A, US5810509 A, US5809720 A, US5628160 A, US5472297 A, US5364204 A, US5339979 A, US5287966 A, US5030343 A, US4932532 A, US4842142 A, US4838449 A, US4619366 A, US4584221 A, US4483640 A, US4193510 A, US2007217866 AA, US2004258869 AA, US2004139679 AA, US1981568 A, NLEP0943737 A1, NL943737, JP2003034971, JP2003034970, GB2408997 A1, EP1437305 B1, EP1205391 A1, EP1205390 A2, EP0943737 A1,

DE202005007638 U1

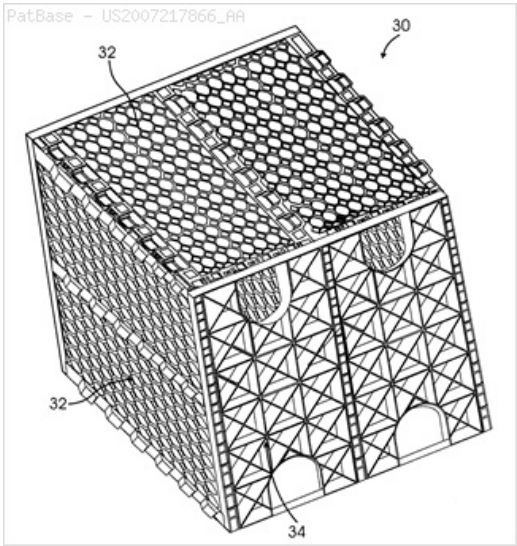
CN1208800 A,

Forward Citations: WO17214664, WO16183184, WO11021169, WO09029562, USD864366, USD811518, USD810858, USD810857, USD740450, USD687861, USD684597, US9957987, US9938670, US9732509, US9732508, US9593783, US9206574, US9169630, US9139971, US8985903, US8517309, US8123436, US7621695, US2019106873, US2019106864, US2016312427, US2016219798, US2015017384, US2015016874, US2012305708, US2012155963, US2011044760, US2010021236, US2009049760, US2008166182, US2007227094, US10633176, US10626580, US10562790, US10562789, US10556809, US10442702, US10415225, US10267029, US10151083, US10053853, RU2495199, JP6091933, JP2014169588, GB2461872, GB2461872, GB2444550, FR3013367, EP2267233, EP2267233, CN108350687, CN106223399, CN105064495, CN102997030, CN102900147, CN101906831, AU2017201781, AU2014326358,

Abstract:

A modular raintank and water storage system are described. A modular raintank comprises a plurality of interconnected external sidewall modules. The sidewall modules have a plurality of openings which allow water to freely flow into and out of the modular raintank. The water storage system comprises a plurality of interconnected modular raintanks. The adjacent modular raintanks of the water storage system can share a sidewall, and can be stacked on top of each other and connected in a side-by-side pattern. The shared sidewall comprises a plurality of locking lip members arranged in rows to facilitate the attachment of additional

modular plates of adjacent raintanks and a plurality of U-shaped openings to facilitate visual inspection of the tank while underground.



11) Family number: 61594142 (US2016031645A) © PatBase

Title: UNDERGROUND WATER-STORAGE VAULT AND METHOD FOR INSTALLING SAME

Priority: US20140032849P 20140804 US20150817659 20150804 US20160371542 20161207

Family:

Publication number	Publication date	Application number	Application date
US2016031645 AA	20160204	US20150817659	20150804
US2017081830 AA	20170323	US20160371542	20161207
US9522784 BB	20161220	US20150817659	20150804
US9809960 BB	20171107	US20160371542	20161207
WO16022551 A2	20160211	WO2015US43596	20150804
WO16022551 A3	20160414	WO2015US43596	20150804

Probable Assignee: JANDA SCOTT R

Assignee(s):(std): BLACK DIAMOND ECO SOLUTIONS LLC

Assignee(s): JANDA SCOTT R

Inventor(s):(std): JANDA ALEC ; REED TIMOTHY D ; WILEY JAY ; JANDA SCOTT R ; REED TIMOTHY ; JANDA SCOTT

Agent(s): RANKIN HILL AND CLARK LLP; DIGGES RANDOLPH E

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): B65D88/54 B65D88/76 B65D90/10 B65G5/00 E03B11/00 E03B11/02 E03B11/14 E03B3/03 E03F1/00 E04H7/02 (Advanced/Invention); E04H7/02 (Advanced/Non-invention)

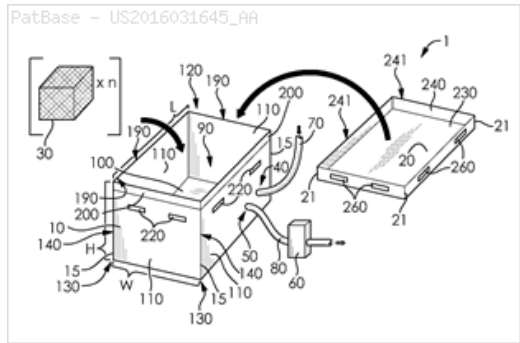
CPC: E03B11/00 E03F1/003 E03F1/005 E03B11/02 B65D88/76 B65D90/105 B65D88/54 E04H7/02 E03B3/03 B65G5/00 E03B11/14 Y02A20/106 Y02A20/108

US class: 1/1 220/567.1 405/55 52/741.12

[Classification Explorer](#)

Cited documents: US9522784 BB, US8926218 BA, US8753037 BB, US8360100 BB, US8240950 BA, US8162567 BB, US7686540 BB, US7621695 BB, US7591610 BB, US7080480 BB, US6779946 BA, US6648549 BA, US6428870 BA, US6276093 BA, US6095718 A, US5848856 A, US5664887 A, US5580173 A, US5246308 A, US4988235 A, US2782604 A, US2014105684 AA, US2012321390 AA, US2012201603 AA, US2010300019 AA, US2010294705 AA, US2010189509 AA, US2010021236 AA, US2009279953 AA, US2008149188 AA, US2007181197 AA, US2007031192 AA, US2006242915 AA, US2006034662 AA, US2003188505 AA, DE202012005674 U1, DE20201200567, US9809960, US2017158432, US2017081830, US2017070267, CN109736408,

Abstract: An underground water-storage system that includes a sump having a base and sidewalls that cooperate to define an open-topped box that defines a reservoir, a plurality of plastic water matrices each defining a void space for receiving water, and a lid. The sump and lid are formed of a reinforced geomembrane material and include welds and are prefabricated in a location remote from an installation site of the underground water-storage vault more than two days prior to installation.



12) Family number: 17768151 (EP0943737A1)

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Title: IRRIGATION AND DRAINAGE BOX

Priority: NL19981008627 19980318 EP19990200704 19990309

Family:	Publication number	Publication date	Application number	Application date
	AT242366 E	20030615	AT19990200704T	19990309
	DE29924050 U1	20011129	DE19992024050U	19990309
	DE69908459 D1	20030710	DE19996008459T	19990309
	DE69908459 D1	20030710	DE19996008459	19990309
	DE69908459 T2	20040506	DE19996008459T	19990309
	DK0943737 T3	20030623	DK19990200704T	19990309
	EP0943737 A1	19990922	EP19990200704	19990309
	EP0943737 B1	20030604	EP19990200704	19990309
	NL1008627 C2	19990921	NL19981008627	19980318

Probable Assignee: WAVIN BV

Assignee(s):(std): WAVIN B V ; WAVIN BV

Assignee(s): WAVIN B V ZWOLLE

Inventor(s):(std): MARCUS WILHELMUS JOHANNES BESTEN ; BESTEN MARCUS WILHELMUS JOHANN

Inventor(s): BESTEN MARCUS WILHELMUS JOHANNES

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): E02B11/00 E03F1/00 (Advanced/Invention);
E02B11/00 E03F1/00 (Core/Invention)

International class
(IPC 1-7): E02B11/00 E02B11/00 E02B13/00 E02D31/02 E04C2/20 E04C2/52

CPC: E02B11/005 E03F1/005

European class: E02B11/00B E03F1/00B4

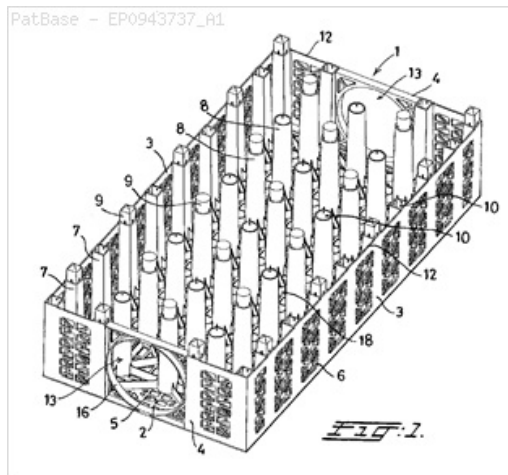
[Classification Explorer](#)

Cited documents: JP4026648 A2, EP0787865 A1, DE4304609 A1, DE2521374 A1,

WO17178267, WO14006137, WO13068541, WO11042415, WO07118894, WO07054130, WO05040501, WO0214608, WO0153608, US9775304, US9775303, US8833708, US8292117, US7712997, US7704011, US7677835, US7621695, US10563391, US10285339, US10132069, RU2540112, RU2495199, GB2440398, GB2374268, GB2374268, FR2929630, EP3495575, EP3165687, EP3165687, EP2870300, EP2776639, EP2687642, EP2682534, EP2592194, EP2592194, EP2470722, EP2312071, EP2169127, EP2148016, EP2107172, EP2007949, EP1887145, EP1820914, EP1743984, EP1690989, EP1690989, EP1666668, EP1666668, EP1469133, EP1469133, EP1452653, EP1437305, EP1437305, EP1416099, EP1416099, EP1416099, EP1311727, EP1280965, EP1260640, EP1226315, EP1226315, EP1226315, EP1205390, EP1205390, EA11474, EA011474, DE202019100340, DE202016101917, DE202010018411, DE202010016295, DE102016106673, DE102016106673, DE102011086016, DE102010028607, DE102009044412, DE102009004914, DE102007058785, CN105317076, CN105317076, AU774813, AU2007329188, AU2001282408,

Abstract:

An irrigation and/or drainage box 1 comprises a base 2 which is provided with perforations and side walls 3, 4 which are provided with perforations and are substantially perpendicular to the base 2 and integrally connected thereto. The box 1 is open on the side which lies opposite the base 2. The box 1 furthermore comprises columns 7, 8 which extend substantially vertically from the base 2 towards the open side. On the open side, the box 1 is designed in such a manner that two identical boxes can be placed with the open sides towards one another and can be connected to one another without the need for further accessories. For this purpose, at least some of the columns 7, 8 are provided, on the open side of the box 1, with first connection parts in the form of projections 9, and other columns are provided, on the open side of the box 1, with second connection parts in the form of cavities 10, in which case, when two boxes are placed with the open sides towards one another, first connection parts 9 of one box are able to interact with second connection parts 10 of the other box in order to form a connection between the two boxes.

**13) Family number: 61913196** (US2017292259A)

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Title: A PLASTIC INFILTRATION UNIT, A SYSTEM COMPRISING A PLURALITY OF PLASTIC INFILTRATION UNITS

Priority: NL20141040958 20140919 EP20150763631 20150918 WO2015EP71461 20150918
RU20170113315 20150918

Family:	Publication number	Publication date	Application number	Application date
	BR112017005320 A2	20171212	BR20171105320	20150918
	CA2961116 AA	20170313	CA20152961116	20150918
	CO20170003276 A2	20170818	CO20170003276	20170404
	DE602015031430 D1	20190627	DE201560031430T	20150918
	DK3194674 T3	20190722	DK20150763631T	20150918
	EP3194674 A1	20170726	EP20150763631	20150918
	EP3194674 B1	20190605	EP20150763631	20150918
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	US10132069 BB	20181120	US20150511927	20150918
	WO16042140 A1	20160324	WO2015EP71461	20150918

Probable Assignee: WAVIN BV

Assignee(s):(std): WAVIN BV

Assignee(s): VAVIN BV ; SCHEER MARCO VAN D ; VAN DIJK BEREND JAN

Inventor(s):(std): VAN DIJK BEREND JAN ; SCHEER MARCO VAN D ; MARCO VAN D SCHEER ; BEREND JAN VAN DIJK

Inventor(s): VAN DEJK BEREND YAN ; SKHER MARKO VAN D

Agent(s): GOWLING WLG CANADA LLP; JOSE ANDRES RINCON USCATEGUI; HOFFMANN EITLE PATENT U RECHTSANWALTE PARTMBB; HOFFMANN EITLE; FUSTER OLAGUIBEL GUSTAVO NICOLAS; YURIDICHESKAYA GORODISSKI I PARTNERY OOO FA; UGUR GUERSAD YALCINER; WOLF GREENFIELD AND SACKS PC; KAREN THIRLWELL HOFFMANN EITLE PATENT U RECHTSANWALTE PARTMBB 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): E03F1/00 E03F5/10 (Advanced/Invention); E03F1/00 (Core/Invention)

International class (IPC 1-7): E03F1/00 E03F5/10

CPC: E03F1/005 E03F5/101 Y02A10/33 Y02A20/408 E03F1/00 E03F1/002

US class: 1/1 405/45

[Classification Explorer](#)

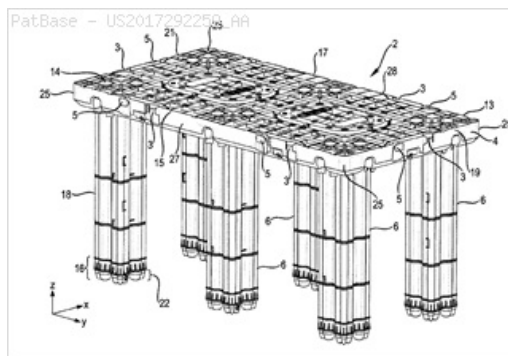
Cited documents: WO11089690 A1, WO07054130 A1, WO07054130 A1, US6694672 BA, US2017292260 AA, US2013284750 AA, US2013284750 AA, US2012255624 AA, US2012141203 AA, US2009250369 AA, US2008166182 AA, US2008044231 AA, US2007274776 AA, US2005155285 AA, US2005155285 AA, US2003188505 AA, RU2373339 C2, KR101141308 B1, GB2417733 A1, EP2682534 A1, EP2385178 A2, EP1997970 A1, EP1932975 A1, EP1932975, EP1607535 A1, EP1607534 A1, EP1416099 A2, EP0943737 A1, EP0734478 B1,

DE102009004915 A1

Forward Citations: WO19193041, WO17217846, USD888192, EP3472397, EP3458371,

Abstract:

There is provided a plastic infiltration unit comprising: a top deck which extends in a plane, at least one pillar extending from the top deck for supporting the top deck, wherein the top deck is provided with at least one integrated connector arranged to connect the plastic infiltration unit with another at least one integrated connector, of another plastic infiltration unit in a side by side arrangement.



14) Family number: 48654225 (US2012255624A)

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Title: DRAINAGE BODY
Priority: DE200910048309 20091005 DE200910044412 20091104 WO2010EP64795 20101005
 EP20100766016 20101005

Family:	Publication number	Publication date	Application number	Application date
	AU2010305511 AA	20120426	AU20100305511	20101005
	AU2010305511 AA	20110414	AU20100305511	20101005
	AU2010305511 BB	20150813	AU20100305511	20101005
	CA2776567 AA	20120403	CA20102776567	20101005
	CA2776567 C	20151222	CA20102776567	20101005
	CN102575445 A	20120711	CN201080043913	20101005
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	DE202010018411 U1	20160707	DE201020018411U	20101005
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	HR20191712 T1	20191213	HR20190001712	20190920
	HU045331 T2	20191230	HU20100766016T	20101005
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	RU2540112 C2	20150210	RU20120116438	20101005
	SI2470722 T1	20190930	SI20100031916T	20101005
	TR201914314 T4	20191021	TR20190014314T	20101005
	US2012255624 AA	20121011	US20100500231	20101005
	WO11042415 A1	20110414	WO2010EP64795	20101005

Probable Assignee: ACO SEVERIN AHLMANN GMBH AND CO KG
Assignee(s):(std): AHLMANN ACO SEVERIN ; AKO ZEFERIN AL MAN GMBKH U KO KG ; CANNEY JAMES ; DAU THOMAS ; ELIAS TIMO ; KUMAR PRASANNA ; MEINCKE ARNE ; ACO SEVERIN AHLMANN GMBH AND CO KG
Assignee(s): ACO SEVERIN AHLMANN GMBH CO KG
Inventor(s):(std): ARNE MEINCKE ; CANNEY JAMES ; DAU THOMAS ; ELIAS TIMO ; JAMES CANNEY ; PRASANNA KUMAR ; THOMAS DAU ; TIMO ELIAS ; MEINCKE ARNE ; KUMAR PRASANNA ; MAJNKE ARNE ; KEHNNI DZHEJMS ; EHLIAS TIMO ; DAU TOMAS
Agent(s): GOLJA HAINES AND FRIEND; RIDOUT AND MAYBEE LLP; BOHNENBERGER JOHANNES; JORGE ISERN ISERN; TOLGA CAYLAK
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 MX MY NZ 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 E02B11/00 E03F1/00 F16K43/00 (Advanced/Invention);
 (IPC 8-9): E02B11/00 E03F1/00 (Core/Invention)
CPC: E02B11/005 E03F1/002 Y10T137/598
European class: E02B11/00B E03F1/00B
US class: 137/315.01
[Classification Explorer](#)
Cited documents: WO09030896 A1, WO09030896 A1, WO07054130 A1, WO07054130 A1, US8132771 BB, US6962464 BA, US6802668 BB, US5916104 A, US5256007 A, US2015292206 AA, US2014291221 AA, US2011255921 AA, US2005155285 AA, US2005155285 AA, RU2007101736, JP2008231681 A2, EP1887145 A1, EP1887145 A1, EP1743984 A1, EP1743984 A1, EP1626064 B1, EP1607535 A1, EP1607535 A1, EP1469133 A2, EP1469133 A2, EP1452653 B1, EP1452653 B1, EP1416099 B1, EP1416099 B1, EP1416099 A2, EP1416099 A2, EP1260640 B1, EP1260640 B1, EP0943737 B1, EP0943737 B1,

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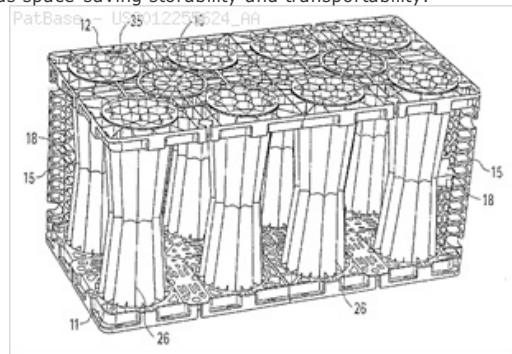
DE102005056131 A1

CN87103427 A, CN1429949 A,

Forward Citations: WO20022888, WO18162530, WO18143808, WO18114039, WO13110637, WO13110635, WO13110629, WO13068541, US9957987, US9775304, US9708806, US9506235, US9303365, US9169630, US2015174881, US2015016874, US2014369757, US2014291221, US10557247, US10415260, US10132069, US10045490, RU2600695, RU2600181, RU2600181, RU2594801, JP6164549, JP2017166298, JP2017089137, JP2016050453, JP2015218447, JP2014009457, FR3011855, FR3011855, EP2862982, EP2807312, EP2807311, EP2807310, EP2776639, EP2592194, EP2592194, EP2463449, EP2463449, DE202016107114, DE202016107113, DE202013101338, DE102017105002, DE102012100560, DE102012100555, DE102012100555, DE102012100552, DE102012100552, DE102011086016, CN110382796, CN104066903, CN104066903, CN104066901, CN104066901, CN103924631, CN103882910, AU2013211661, AU2013211659,

Abstract:

A drainage body is disclosed which comprises at least two substantially identically shaped surface units, that is a base unit and a substantially identically shaped top unit, which are combinable with one another in an installation spacing by way of spacers. It is proposed to form the surface units to be substantially interlockingly stackable in such a manner that the installation spacing of the surface units is considerably larger than their spacing in the stacked condition, whereby the spacers essentially have, for example, a frusto-conical or frusto-pyramid shape with a circumscribed cross-sectional area which becomes smaller as its distance from the surface units increases. As an alternative to this, it may be provided that the spacers are disposed in such a manner on the surface units that the base units and the top units are layable so as to be overlapping one another in the manner of a masonry bond. As a result this creates high stability with simultaneous space-saving storability and transportability.



15) Family number: 73164248 (USD840498S)

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Title: MODULAR FLUID RETENTION AND MANAGEMENT TRAY
Priority: US20170613346F 20170809 US20180674065F 20181219 US20180674067F 20181219

Family:	Publication number	Publication date	Application number	Application date
	CA179561 S	20190918	CA20180179561F	20180131
	CA185980 S	20190918	CA20180185980F	20180131
	USD840498 S1	20190212	US20170613346F	20170809
	USD868934 S1	20191203	US20180674065F	20181219
	USD868935 S1	20191203	US20180674067F	20181219

Probable Assignee: J M SALES ASS INC
Assignee(s):(std): J M SALES ASS INC ; MISKOVICH JOSEPH S
Assignee(s): J M SALES ASSOCIATES INC ; J M SALES ASSOCIATES INC
Inventor(s):(std): MISKOVICH JOSEPH S
Agent(s): YOUNG BASILE HANLON AND MACFARLANE PC
US class: D23/206
Locarno class: 23/01

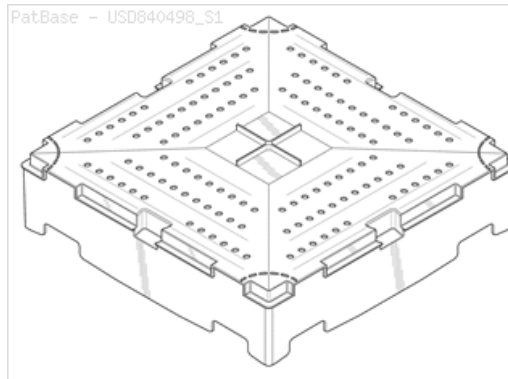
[Classification Explorer](#)

Cited documents: WO16204801 A1, WO03069074 A1, USD845166 S1, USD840498 S1, USD795385 S1, USD795384 S1, USD776565 S1, USD758918 S1, USD644559 S1, USD627257 S1, USD617867 S1, US9879428 BB, US9441355 BB, US9371938 BB, US8770890 BB, US8147688 BB, US7887256 BB, US7806627 BB, US7744756 BB, US7621695 BB, US7413381 BA, US7387823 BB, US7226241 BB, US6606823 BA, US6383372 BA, US6379541 BA, US6132139 A, US6062767 A, US5890838 A, US5467555 A, US5445730 A, US5322387 A, US5241979 A, US5087151 A, US4926586 A, US4910568 A, US2016281347 AA, US2016081280 AA, US2015260313 AA, US2014026480 AA, US2013239476 AA, US2013180174 AA, US2013008841 AA, US2012227319 AA, US20111289839 AA, US2011113702 AA, US2011030274 AA, US2010059430 AA, US2009279953 AA, US2009261036 AA, US2009260284 AA, US2009180834 AA, US2008181725 AA, US2008035547 AA, US2007258770 AA, US2006242901 AA, US2006233612 AA, US2004253054 AA, US2004251703 AA, US2004184884 AA, US2003070977 AA, US1529019 A, US1494847 A, US1060737 A, US10238084 BB, US10238084 B2, NL1020177 C2, EP2322733 A1, EP1932975 A1, EP0803618 A2, EP0780524 A1,

Forward Citations: USD868935, USD868934,

Abstract:

[Source: Claim 1] The ornamental design for a modular fluid retention and management tray, as shown and described.



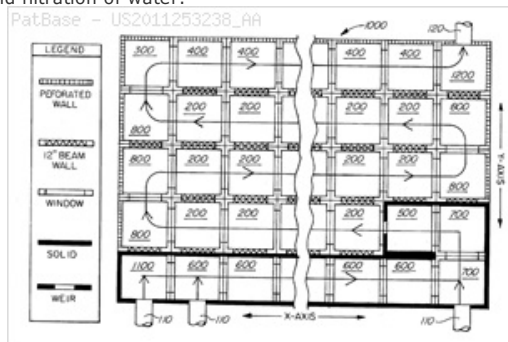
16) Family number: 49769302 (US2011253238A)

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Title:	INTEGRATED BULK FLUIDS MANAGEMENT SYSTEM																																											
Priority:	US20100327418P 20100423 US20130057633 20131018		US20110093665 20110425 US20130732963 20130102																																									
Family:	<table><thead><tr><th></th><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th></tr></thead><tbody><tr><td></td><td>US2011253238 AA</td><td>20111020</td><td>US20110093665</td><td>20110425</td></tr><tr><td></td><td>US2013115003 AA</td><td>20130509</td><td>US20130732963</td><td>20130102</td></tr><tr><td></td><td>US2014041741 AA</td><td>20140213</td><td>US20130057633</td><td>20131018</td></tr><tr><td></td><td>US8360100 BB</td><td>20130129</td><td>US20110093665</td><td>20110425</td></tr><tr><td></td><td>US8590564 BB</td><td>20131126</td><td>US20130732963</td><td>20130102</td></tr><tr><td></td><td>US9057188 BB</td><td>20150616</td><td>US20130057633</td><td>20131018</td></tr><tr><td></td><td>WO11133970 A1</td><td>20111027</td><td>WO2011US33744</td><td>20110425</td></tr></tbody></table>					Publication number	Publication date	Application number	Application date		US2011253238 AA	20111020	US20110093665	20110425		US2013115003 AA	20130509	US20130732963	20130102		US2014041741 AA	20140213	US20130057633	20131018		US8360100 BB	20130129	US20110093665	20110425		US8590564 BB	20131126	US20130732963	20130102		US9057188 BB	20150616	US20130057633	20131018		WO11133970 A1	20111027	WO2011US33744	20110425
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Probable Assignee:	RETAIN IT LLC																																											
Assignee(s):(std):	BURKHART SR KURT A ; BURKHART SR RONALD E ; RETAIN IT LLC ; BURKHART KURT A ; ARROW CONCRETE PRODUCTS INC																																											
Assignee(s):	BURKHART SR																																											
Inventor(s):(std):	BURKHART SR KURT A ; BURKHART SR RONALD E ; BURKHART KURT A																																											
Inventor(s):	BURKHART SR																																											
Agent(s):	ST ONGE STEWARD JOHNSTON AND REENS LLC; WINTER GENE S 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 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):	B65D21/02 B65D6/40 E02B11/00 E03B1/00 E03B11/14 E03F1/00 E03F5/10 (Advanced/Invention)																																											
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US class:	1/1 137/265 137/561A 137/573 137/574 137/580 210/170.03 210/170.08 220/23.2 220/23.4 220/4.26 405/45 405/46 405/47 405/80																																											
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Abstract:

Modular storage and controlled outflow systems for controlling a flow of water and methods of assembly of modular storage and controlled outflow systems having indirect flow of water through the system. Modular systems for controlling a flow of water having beams extending across the modules to direct the flow of water in an indirect manner or a serpentine or semi-serpentine manner. Modular storage and controlled outflow systems for treatment and filtration of water.



Title: AGGREGATE REPLACEMENT
Priority: US20130851004 20130326 US20140282801 20140520 US20150864546 20150924
US20150967008 20151211

Family:	Publication number	Publication date	Application number	Application date
	CA2847436 AA	20140926	CA20142847436	20140326
	CA2892067 AA	20151120	CA20152892067	20150520
	US2014294507 AA	20141002	US20130851004	20130326
	US2014294508 AA	20141002	US20140282801	20140520
	US2016010762 AA	20160114	US20150864546	20150924
	US2016097175 AA	20160407	US20150967008	20151211
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	US9206574 BB	20151208	US20140282801	20140520
	US9593783 BB	20170314	US20150864546	20150924

Probable Assignee: PARKER ALTON F

Assignee(s):(std): PARKER ALTON F

Assignee(s): PARKER ALTON F16 TRACEY COURTCLEFTON PARKNY12065US

Inventor(s):(std): PARKER ALTON F

Inventor(s): PARKER ALTON F16 TRACEY COURTCLEFTON PARKNY12065US

Agent(s): SHAPIRO COHEN LLP; AVENTUM IP LAW LLP; MILTONS IP PI; SCHMEISER OLSEN AND WATTS LLP

International class (IPC 8-9): E02B11/00 E02D19/06 E02D31/02 E02D31/10 E03F1/00 F16L1/036 F16L1/06 F16L3/08 F16L3/26 F16M13/02 (Advanced/Invention)

CPC: E02B11/005 F16L1/06 F16L1/036 F16M13/022 E03F1/005 F16L3/08 E02D31/02 E02D31/10

US class: 1/1 405/184.4 405/45

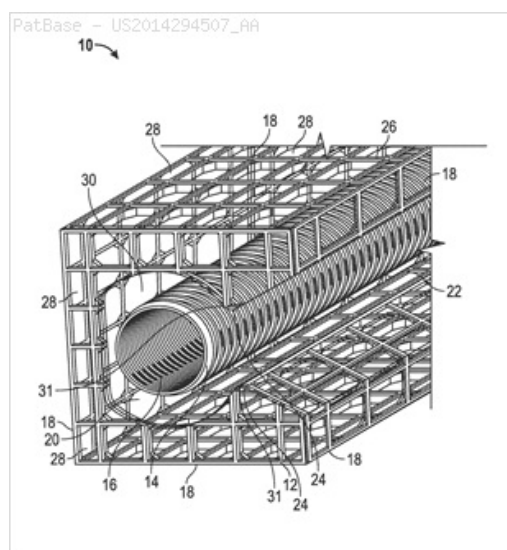
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Forward Citations: WO17222399, US9732508, US2019106873, US2019106864, US10626580, US10336536, US10267029, US10151083,

Abstract:

An aggregate replacement device may be used to take replace rock aggregate in underground drainage systems. An aggregate replacement device may include a structure having a proximal end, a distal end, and at least one face. The at least one face may have a plurality of first openings. A second opening in the structure may extend from the proximal end to the distal end of the structure continuing uninterrupted through at least one of the at least one faces. The second opening may receive a pipe inserted in a radial direction of the pipe. The aggregate replacement device may also include a pipe retainer. An additional embodiment of the aggregate replacement device may include a stake which may be used to secure the aggregate replacement device in position.



Title: MODULATED STRUCTURAL CELL FOR SUPPORTING A TREE ROOT NETWORK
Priority: AU20090903817 20090814 AU20100282231 20100813 WO2010AU01034 20100813
EP20100807804 20100813

Family:

Publication number	Publication date	Application number	Application date
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EP2464788 A4	20130612	EP20100807804	20100813
EP2464788 B1	20140806	EP20100807804	20100813
NZ598415 A	20130830	NZ20100598415	20100813
US2012141203 AA	20120607	US20100390317	20100813
US8608401 BB	20131217	US20100390317	20100813
WO11017766 A1	20110217	WO2010AU01034	20100813

Probable Assignee:

STRATA INNOVATIONS PTY LTD

Assignee(s):(std):

GOODEN REBECCA ; REBECCA GOODEN ; GOODEN BEN ; BEN GOODEN ; STRATA INNOVATIONS PTY LTD

Assignee(s):

GOODEN BEN MR ; GOODEN BEN31 ENTERPRISE CRESCENTNEW SOUTH WALES2330SINGLETONAU ; GOODEN REBECCAPO BOX 3133DC, NSW 2330SINGLETONAU ; STRATA INNOVATIONS PTY ; STRATA INNOVATIONS PTY LTD SINGLETON ; STRATA INNOVATIONS PTY31 ENTERPRISE CRESCENTNEW SOUTH WALES 2330SINGLETONAU

Inventor(s):(std):

GOODEN BEN

Inventor(s):

GOODEN BEN SINGLETON DC ; GOODEN BEN31 ENTERPRISE CRESCENTNEW SOUTH WALES2330SINGLETONAU

Agent(s):

CREATEIP; COLLISON AND CO; RIDOUT AND MAYBEE LLP; MILLER THOMSON LLP; 2K PATENTANWALTE BLASBERG KEWITZ AND REICHEL PARTNERSCHAFT MBB; RICKARD DAVID JOHN; LOUSTALAN PAUL WILLIAM; DOWELL AND DOWELL PC

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):

A01G13/02 E01C11/00 E01C13/00 E01C3/00 E01C3/06 E01C5/00 E01C9/00 (Advanced/Invention)

CPC:

E01C9/004 E03F1/002 A01G13/0237 E01C9/005

European class:

A01G13/02E E01C9/00D2

US class:

404/40 404/41 404/41P 47/32.4 47/32.7

[Classification Explorer](#)**Cited documents:**

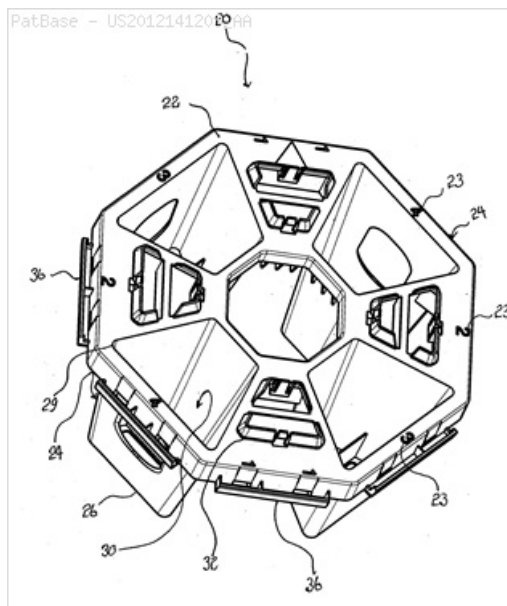
WO11017766 A1, USD607547 S1, USD572342 S1, USD560469 S1, USD424386 S1, USD319291 S1, US8065834 BB, US7621695 BB, US7201538 BB, US7080480 BB, US6962464 BA, US6428870 BA, US5460867 A, US5371967 A, US4665645 A, US4622775 A, US4118892 A, US3948190 A, US3802790 A, US2012163911 AA, US2012057932 AA, US2012020746 AA, US2009250369 AA, US2008166182 AA, US2008115413 AA, US2005155285 AA, JP2002097707 A2, FR2547561 A1, EP1932975 A1,

Forward Citations:

WO16164312, WO14161039, WO12171060, US9957987, US9896832, US9775304, US9775303, US9578818, US9303365, US8608401, US2017292260, US2016265209, US2016165815, US2015040471, US2015016874, US10415260, US10285339, US10132069, US10045490, RU2673160, ITPN20110054, FR3080867, EP3564452, EP3048873, EP2908619,

Abstract:

A modulated cell adapted to form a structural frame of said cells for supporting a load bearing feature of a roadway, pavement or walkway while at the same time providing a rooting area within the structural frame for a tree root network. The cell has a main body with vertical integral legs with a top plate having regions upon its upper skirting for a snap fit fastening arrangement for receiving the ends of said legs of a resting cell thereupon said top plate to mount one cell vertically upon another and the top plate has its peripheral edge an interlocking means for laterally joining together with adjacent cells so the modulated cells can be mounted vertically and laterally one upon the other and side by side.



Title: BLOCCO DI INFILTRAZIONE PER UN SISTEMA DI INFILTRAZIONE PER LO SMALTIMENTO DI ACQUE PIOVANE. BLOCK FOR INFILTRATION INFLTRATION SYSTEM FOR DISPOSAL OF RAINWATER. (Machine translation)

Priority: IT2011BO00633 20111107

Family:

Publication number	Publication date	Application number	Application date
ITBO20110633 A1	20130508	IT2011BO00633	20111107

Probable Assignee: GDS S R L

Assignee(s):(std): GDS S R L

Assignee(s): GDS SRL

Inventor(s):(std): PISONI STEFANO

CPC: E03F1/005

Cited documents: WO07054130 A1, WO0050142 A2, EP2385178 A2, EP1260640 A1,

Title: SUBTERRANEAN DRAINAGE STRUCTURE AND BASE UNIT THEREFOR

Priority: GB20120015681 20120903 WO2013GB52308 20130903

Family:

Publication number	Publication date	Application number	Application date
EP2909385 A1	20150826	EP20130760085	20130903
GB201215681 A0	20121017	GB20120015681	20120903
GB2505503 A1	20140305	GB20120015681	20120903
GB2505503 B2	20170412	GB20120015681	20120903
WO14033485 A1	20140306	WO2013GB52308	20130903

Probable Assignee: POLYPIPE PLC

Assignee(s):(std): POLYPIPE LTD ; POLYPIPE PLC

Inventor(s):(std): STUART EDWARD ALAN RAMELLA ; RAMELLA STUART EDWARD ALAN

Agent(s): OXLEY ROBIN JOHN GEORGE; OXLEY ROBIN

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 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): E03F1/00 (Advanced/Invention)

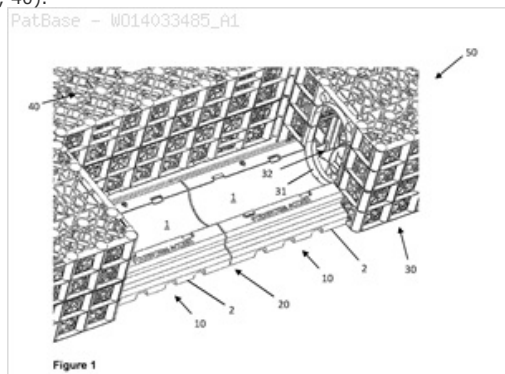
CPC: E03F1/005

[Classification Explorer](#)

Cited documents: WO09030896 A1, WO08140297 A1, WO07054130 A1, US5810510 A, US2009279953 AA, EP1666668 A2, EP1607535 A1, EP1260640 A1, DE202005010090 U, DE102010045001 A1

Abstract:

A subterranean drainage structure (50) with a plurality of similarly dimensioned drainage cells (30), 40 formed into a regular grid comprising one or more substantially horizontal layer that has a substantially vertical access chamber formed by omission of at least one cell (30, 40) from the or each layer. A base (20) is positioned at the lower end of the chamber; and fixing means (3, 4, 9) are provided for fixing the base (20) to at least one of the cells (30, 40) adjacent the chamber. A subterranean drainage structure inspection chamber base (20) is provided with a platform (11) extending across the base (20) in a first direction. A substantially flat surface opposes the platform (11) to support a geotextile membrane placed against it. The base (20) includes fixing means (3, 4, 9) for fixing the base (20) to an adjacent element (30, 40).



Title: SUBSURFACE FLUID DRAINAGE AND STORAGE SYSTEMS

Priority: US19970796304 19970207 US19970796304 19970207 CA19982286336 19980202
CA19982531826 19980202 WO1998US02362 19980202 US19980169532 19981009
WO1998US02362 19990809 US20000624799 20000724

Family:

Publication number	Publication date	Application number	Application date
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AU199861494 A1	19980826	AU19980061494	19980202
AU724847 B2	20001005	AU19980061494	19980202
CA2286336 AA	19990930	CA19982286336	19980202
CA2286336 C	20080826	CA19982286336	19980202
CA2531826 AA	19980813	CA19982531826	19980202
CA2531826 C	20070424	CA19982531826	19980202
DE69838712 D1	20071227	DE19986038712	19980202
DE69838712 D1	20071227	DE19986038712T	19980202
DE69838712 T2	20081030	DE19986038712T	19980202
EP0966571 A1	19991229	EP19980906214	19980202
EP0966571 A4	20010124	EP19980906214	19980202
EP0966571 B1	20071114	EP19980906214	19980202
ES2296329 T3	20080416	ES19980906214T	19980202
IL131311 A0	20010128	IL19990131311	19990809
IL131311 A1	20040927	IL19990131311	19990809
NZ337533 A	20010928	NZ19980337533	19980202
US5848856 A	19981215	US19970796304	19970207
US6095718 A	20000801	US19980169532	19981009
US6450731 BA	20020917	US20000624799	20000724
WO9835106 A1	19980813	WO1998US02362	19980202

Probable Assignee: INVISIBLE STRUCTURES INC

Assignee(s):(std): INVISIBLE STRUCTURES INC

Assignee(s): BOHNHOFF WILLIAM W

Inventor(s):(std): BOHNHOFF WILLIAM W ; BOHNHOFF WILLIAM WALTER ; BOHNHOFF WILLIAM W ; WILLIAM W BOHNHOFF ; WILLIAM W BOHNHOFF

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; BORDEN LADNER GERVAIS LLP; DR SHLOMO COHEN AND CO

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 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 UZ VN YU ZW

International class (IPC 8-9): E01C9/00 E01H10/00 E01H3/04 E02B11/00 E03F1/00 E03F5/10 (Advanced/Invention); E03F1/00 (Advanced/Non-invention); E01C9/00 E01H10/00 E01H3/00 E02B11/00 E03F1/00 E03F5/10 (Core/Invention)

International class (IPC 1-7): B05C5/00 E02B E02B11/00 E02B13/00

CPC: E01C9/002 E01H3/04 E01H10/005 Y02A10/33 Y02A20/408 E03F5/101 E02B11/00 E03F1/005

European class: E01C9/00C E01H10/00C E01H3/04 E02B11/00 E03F1/00B4 E03F5/10 E03F5/10B

US class: 239/201 404/71 405/36 405/37 405/43 405/45 405/52

[Classification Explorer](#)

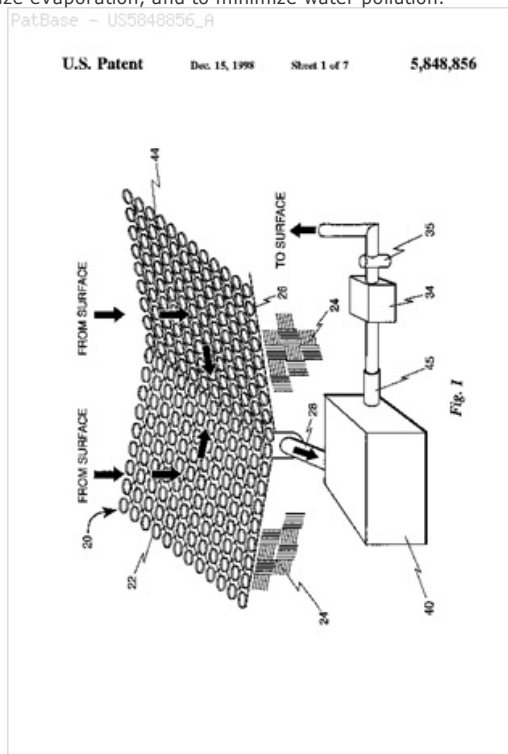
Cited documents: WO9835106 A1, WO8901076 A1, USD442704 S1, US706289 A, US5848856 A, US5306317 A, US5250340 A, US5219243 A, US5197824 A, US5123778 A, US5064308 A, US500853 A, US4956951 A, US4943185 A, US4934865 A, US4925342 A, US4917536 A, US4913596 A, US4896993, US4881846 A, US4880333 A, US4832526 A, US479979 A, US4733989 A, US4576511 A, US4497440 A, US4268993 A, US4044179 A, US4023506 A, US3990247 A, US3908385 A, US3795180 A, US3547355 A, US2793910 A, US2183657 A, DE3435983 A1, DE2327618 A1,

Forward Citations: WO18018659, WO16087964, WO16022551, WO15187749, WO14186236, WO14107253, WO14029872, WO13021333, WO12006409, WO09137876, WO08067608, WO06026881, WO05069895, WO03046295, WO03046295, WO0105257, USD656250, US9896381, US9856363, US9850625, US9845577, US9809960, US9775304, US9732590, US9732508, US9708790, US9670660, US9670624, US9650020, US9631088, US9617698, US9604110, US9522784, US9505931, US9464003, US9462761, US9404232, US9303365, US9206574, US9163364, US9161496, US9144814, US9139971, US9085887, US8955268, US8926218, US8882441, US8881482, US8870491, US8864910, US8834060, US8833708, US8753037, US8734049, US8710135, US8696241, US8683769, US8663465, US8640387, US8596023, US8506720, US8505256, US8424257, US8407951, US8398332, US8397466, US8388260, US8272390, US8267618, US8267100, US8263203, US8240950, US8221029, US8182179, US8162567, US8142101, US8137024, US8074670, US8034429, US8025456, US7972080, US7938597, US7858148, US7815395, US7699562, US7621695, US7591610, US7553104, US7540295, US7530362, US7503726, US7399145, US7387467, US7347646, US7341401, US7290958, US7201538, US7192218, US7144609, US7137755, US7137755, US7114877, US7108454, US7108454, US7080480, US7056058, US7040838, US7029201, US7025076, US7022235, US6986621, US6955304, US6872029, US6840710, US6779946, US6712552, US6585449, US6551023, US6505996, US6450731, US6273193, US6221445, US6095718, US2019194885, US2019106873, US2019106864, US2017158432, US2017081830, US2016069162, US2016031645, US2015233083, US2014076530, US2014064852, US2014001283, US2013112765, US2012321390, US2012237296, US2012155959, US2012063846, US2012057932, US2012045279, US2012020746, US2012006412, US2011255921, US2011229267, US2011183086, US2011108559, US2011097151, US20101296871, US2010294705, US2010260546, US2010247984, US2010092240, US2010021236, US2010015448, US2009290937, US2009279953, US2009272696, US2009266387, US2009211613, US2009173142, US2009169303, US2009067925, US2009067924, US2009049760, US2008226395, US2008166182, US2008149188, US2008073087, US2008072968, US2008056824, US2007297686, US2007278142, US2007256712, US2007227094, US2007160800, US2007154262, US2007147960, US2007092338, US2007092337, US2007028514, US2007020048, US2006285920, US2006275082, US2006147670, US2006120804, US2006120803, US2006078386, US2006051161, US2006029472, US2006002764, US2005186030, US2005155285, US2005109693, US2005100401, US2005072859, US2004247802, US2004231703, US2004112809, US2004040598, US2003222025, US2003118405, US2003118403, US2002090261, US10648137, US10634427, US10626580, US10597830, US10480128, US10428510, US10415260, US10337175, US10294640, US10285339, US10280569, US10267029, US10264741, US10253460, US10220287, US10151083, US10072383, US10045490, US10040721, GB2551981, GB2352749, FR3078084, FR3036720, FR2800106, EP2895662, EP2753764, EP2591169, EP2325404, EP1226315, EP1226315, EP1226315, DE102007019023, DE102007019023, CN103964566, CN103964566, AU2013371517, AU2003269298, AU2003269298,

Abstract:

There is provided by the invention a subsurface drainage system which promotes efficient and controlled subsurface drainage of fluids, such as irrigation water, applied to the surface of land such as a football field. A drain core apparatus is provided that provides rapid infiltration and later movement of subsurface fluids, but which is resistant to settling, compacting and crushing. The drain core is a thermoplastic mat having crush-resistant support members integrated with and upon a backing grid which holds the support members in spaced relation to one another. Fluid flowing into and through the drain core is collected and stored in a fluid storage container. The fluid storage container is adapted to be buried beneath the ground, and has an easily assembled internal support structure composed of vertically layered thermoplastic mats. The mats permit fluids to flow freely within the container, and yet lend vertical and structural stability to the container. Subsurface fluids gathered by the system may be re-

applied to the surface to conserve water, fertilizer, and the like, to minimize evaporation, and to minimize water pollution.



22) Family number: 8061439 (US4246305A)

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Title: DRAINAGE STRUCTURE AND PROCESS

Priority: US19780888934 19780322

Family:

Publication number	Publication date	Application number	Application date
■ US4246305 A	19810120	US19780888934	19780322

Probable Assignee: SOLENTANCHE ENTREPRISE

Assignee(s):(std): SOLENTANCHE ENTREPRISE

Inventor(s):(std): DELATTRE HENRI

International class (IPC 8-9): B29C47/00 E02B11/00 (Advanced/Invention);
B29C47/00 E02B11/00 (Core/Invention)

International class (IPC 1-7): B05B15/00 B28B1/48 B29C17/08 E02B11/00

CPC: Y10T428/139 Y10T428/24273 Y10T428/24744 E02B11/00 B29C48/022 B29C48/11 B29C48/12
B29C48/13

European class: B29C47/00B B29C47/00J8 E02B11/00 L29C47/00J10 L29C47/00J9

US class: 239/450 264/154 264/156 264/177.12 264/177.17 405/36 405/39 405/43 405/50 405/51 428/131
428/188 428/36 428/36.9

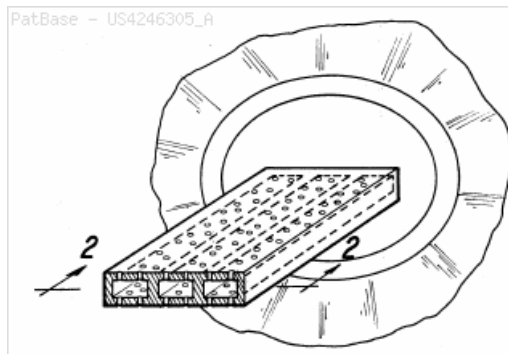
[Classification Explorer](#)

Cited documents: US4113818 A, US4095750 A, US4057500 A, US4042741 A, US3973329 A, US3274315 A, US3080124 A, US3079620 A, US2814529 A, US2802530 A, US2749180 A, US2621075 A,

Forward Citations: WO04061259, WO04061259, USD688809, USD499166, US9809941, US9656892, US9650271, US9174863, US8636444, US8562250, US8518201, US8366343, US8251607, US8240950, US7661903, US7632408, US7621695, US7465390, US7413381, US7374670, US7078088, US7063880, US7063879, US7056569, US7026034, US7022395, US6991844, US6986931, US6979485, US6926464, US6702517, US6648550, US5934828, US5783286, US5753113, US5520481, US5316410, US5030343, US4966492, US4837973, US4719738, US2010272513, US2010260547, US2009180833, US2009145830, US2008203002, US2008202999, US2008166182, US2006272988, US2005269253, US2004241390, US2004157051, US2004154729, US2003235676, US2003228442, US2003211284, US2003203159, US2003198797, US2002127369, US10640929, US10392278, US10065875, EP2419572, EP2419572, EP0933477, EP0262290, EP0262290,

Abstract:

This invention relates to drainage by use of elongated strips of such a physical structure that they allow an exchange of fluids between their core and the medium in which they are placed. The drainage strips are used by vertically placing them in wet soils to evacuate water contained in said soils by use of a pressure differential exerted upon the water due to the pressure of the soil layer over the atmospheric pressure in the interstices of the drainage structure.



23) Family number: 43985472 (US2009279953A)

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Title: MODULAR UNDERGROUND WATER MANAGEMENT SYSTEMS
Priority: US20080052574P 20080512 US20090464791 20090512

Family:	Publication number	Publication date	Application number	Application date
	US2009279953 AA	20091112	US20090464791	20090512
	WO09140295 A1	20091119	WO2009US43657	20090512

Probable Assignee: CUDO STORMWATER PRODUCTS INC

Assignee(s):(std): ALLARD DOUGLAS PAUL ; CUDO STORMWATER PRODUCTS INC ; DURAPAU RICK ; DVORCHEK JOSEPH

Inventor(s):(std): ALLARD DOUGLAS PAUL ; DURAPAU RICK ; DVORCHEK JOSEPH

Agent(s): HOWREY LLP-CA; HOWREY LLP CA; FAN HEATHER H

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): E01F5/00 E02B13/00 E03F1/00 (Advanced/Invention); E01F5/00 E02B13/00 E03F1/00 (Core/Invention)

CPC: E03F1/005

European class: E03F1/00B4

US class: 405/126 405/126S 405/39 405/39P 405/45 405/45S

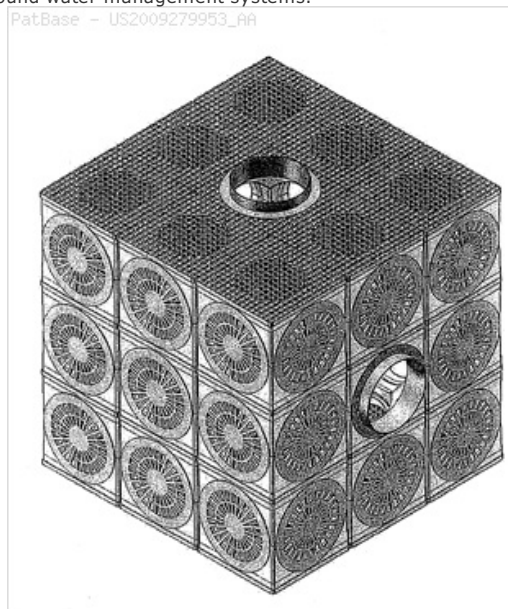
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Cited documents: WO07054130 A1, US7351006 BB, US7351005 BB, US7344335 BB, US7311467 BB, US7237981 BA, US7226241 BB, US7217063 BB, US7189027 BB, US7186058 BB, US7160058 BB, US7118306 BB, US7080480 BB, US6991402 BB, US6796325 BA, US6779946 BA, US6648549 BA, US6095718 A, US5848856 A, US5810510 A, US2008044231 AA, US2007274776 AA, US2007181197 AA, GB2183704 A1, EP1932975 A1, EP1932974 A1, EP1036638 A1,

Forward Citations: WO17210054, WO16204801, WO13110637, WO11133970, USD868935, USD868934, USD740450, US9809960, US9732508, US9593783, US9593477, US9522784, US9487421, US9459595, US9206574, US9175463, US9169630, US9162169, US9139971, US9057188, US8985903, US8876432, US8590564, US8414222, US8360100, US2019106873, US2019106864, US2017158432, US2017081830, US2016312427, US2016031645, US2014294507, US2013184840, US2012063855, US2011305513, US10655316, US10626580, US10597861, US10415225, US10294640, US10267029, US10151096, US10151083, US10053853, KR101857595, JP2016102293, GB2505503, GB2505503, FR3062145, EP3354810, EP2807311, DE202018104583, CN109563701, AU2013211661, AT509154,

Abstract:

The invention provides modular units, associated component parts, and assemblies of the modular units and component parts, including filtration systems, that are useful for making and using underground water management systems.



24) Family number: 66625520 (US2017321397A)

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Title: HONEYCOMB MODULE AND UNDERGROUND STORAGE SYSTEM

Priority: US20160135514 20160421 US20160394118P 20160913 US20170611522F 20170721
US20170611524F 20170721 US20170657253 20170724 US20170667398 20170802
US20170782961 20171013 US20180214527 20181210 US20180214464 20181210
US20190390144 20190422 US20190537585 20190811 US20190577617 20190920

Family:	Publication number	Publication date	Application number	Application date
	US2017321397 AA	20171109	US20170657253	20170724
	US2017328052 AA	20171116	US20170667398	20170802
	US2018030712 AA	20180201	US20170782961	20171013
	US2019106864 AA	20190411	US20180214527	20181210
	US2019106873 AA	20190411	US20180214464	20181210
	US2019242106 AA	20190808	US20190390144	20190422
	US2019360190 AA	20191128	US20190537585	20190811
	US2020011048 AA	20200109	US20190577617	20190920
	US9732508 BA	20170815	US20160135514	20160421
	USD828902 S1	20180918	US20170611522F	20170721
	USD828903 S1	20180918	US20170611524F	20170721
	US10151083 BB	20181211	US20170657253	20170724
	US10151096 BB	20181211	US20170782961	20171013
	US10267029 BB	20190423	US20170667398	20170802
	US10626580 BB	20200421	US20180214527	20181210

Probable Assignee: BIO CLEAN ENVIRONMENTAL SERVICES INC

Assignee(s):(std): BIO CLEAN ENV SERVICES INC ; BIO CLEAN ENVIROMENTAL SERVICES INC ; KENT ZACHARIHA J ; SCOTT JOHN

Assignee(s): BIO CLEAN ENVIRONMENTAL SERVICES INC ; CREDIT SUISSE CAYMAN ISLANDS BRANCH AG ; BANK OF AMERICA NA COLLATERAL AGENT AS

Inventor(s):(std): KENT ZACHARIHA J ; SCOTT JOHN ; HAEDER COREY

Agent(s): STEVEN W ; WEBB STEVEN W

International class (IPC 8-9): B65G5/00 E02B11/00 E03B11/14 E03B3/03 E03F1/00 F17C3/00 (Advanced/Invention); B65D88/76 E02B11/00 E21D13/00 (Advanced/Non-invention)

CPC: E02B11/00 E03B3/03 E03B11/14 E03F1/005 B65D88/76 B65G5/00 E02B11/005 E21D13/00 F17C3/005 F17C2203/0612 Y02A20/104 Y02A20/106 Y02A20/108 E03F1/002 E03F1/003

US class: 1/1 137/15.08 405/43 405/55 D23/206 D23/206 D6/675 D6/675

Locarno class: 23/01 23/01

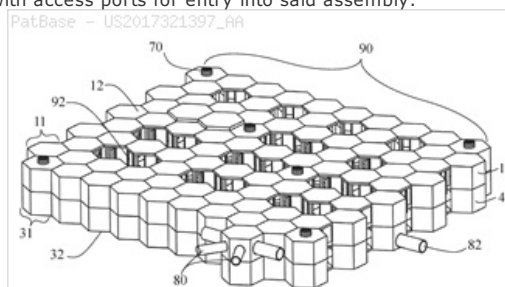
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Cited documents: WO13159737 A1, USD810858 S1, USD810857 S1, USD795385 S1, USD795384 S1, USD786510 S1, USD767924 S1, USD654556 S1, USD651278 S1, USD635639 S1, USD617867 S1, USD236673 S1, USD201340 S1, US9951508 BB, US9732508 BA, US9580899 BB, US9428880 BB, US8770890 BB, US8590564 BB, US8360100 BB, US8256991 BB, US8162567 BB, US7621695 BB, US7591610 BB, US7344335 BB, US7160058 BB, US7080480 BB, US6991402 BB, US6962464 BA, US6626609 BA, US6514009 BB, US6428870 BA, US6419421 BA, US6095718 A, US5848856 A, US5810510 A, US5542780 A, US5387741 A, US5017042 A, US4708523 A, US4363563 A, US4239416 A, US2018030712 AA, US2017328052 AA, US2017321397 AA, US2016333566 AA, US2016265209 AA, US2016097175 AA, US2014291221 AA, US2014105684 AA, US2011253238 AA, US2010226721 AA, US2010021236 AA, US2009279953 AA, US2009049760 AA, US2008166182 AA, US2007217866 AA, US2007181197 AA, US2007053746 AA, US2004076473 AA, US10267028 BB, US10151083 BB, JP7247593 A2, JP72475593, JP7166595 A2, JP62006091, JP6026091 A2, JP60092527 A2, JP5280085 A2, JP2001193139 A2, JP20011931139 A, GB2417733 A1, FR2927913 A1, DE4400183 A1, CNWO2013159737, CA2462101 AA, WO20022888, WO19215238, USD888192, USD867039, US2019106873, US2019106864, US10626580, US10612227, US10435880, US10294640, US10267029, US10151096, US10151083, NL2021404, GB2577877,

Forward Citations:

Abstract:

Individual honeycomb shaped modules used in an assembly for underground storage of storm water and other fluid storage needs. Modules are assembled into a resultant honeycomb shape for maximized structural strength and material use efficiency. Internal hexagonal or square shaped modules are assembled and encased by external hexagonal or square shaped modules. Internal adjacent modules are in direct fluid communications with one another through a channel-less chamber. Internal hexagonal or square shaped modules drain into external hexagonal or square shaped modules chamber where fluid is either stored or drained. Assemblies include various top and side pieces along with access ports for entry into said assembly.

**25) Family number: 28625527 (EP1416099A3)**

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Title: A GROUND WATER DRAINAGE SYSTEM

Priority: GB20020025374 20021031 GB20030008445 20030411

Family:	Publication number	Publication date	Application number	Application date
	AT408732 E	20081015	AT20030256923T	20031031
	DE60323586 D1	20081030	DE20036023586	20031031
	DE60323586 D1	20081030	DE20036023586T	20031031
	EP1416099 A2	20040506	EP20030256923	20031031
	EP1416099 A3	20041201	EP20030256923	20031031
	EP1416099 B1	20080917	EP20030256923	20031031
	GB200225374 A0	20021211	GB20020025374	20021031
	GB200308445 A0	20030521	GB20030008445	20030411

Probable Assignee: POLYPIPE CIVILS LTD

Assignee(s):(std): POLYPIPE CIVILS LTD

Assignee(s): POLYPIPE CIVILS LIMITED

Inventor(s):(std): SHINGLETON JASON ALAN ; RAMELLA STUART EDWARD ALAN ; COUPE KEVIN JOHN

Agent(s): JOHNSON TERENCE LESLIE

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

International class (IPC 8-9): E03F1/00 (Advanced/Invention); E03F1/00 (Core/Invention)

International class (IPC 1-7): E03F1/00

CPC: E03F1/005

European class: E03F1/00B4

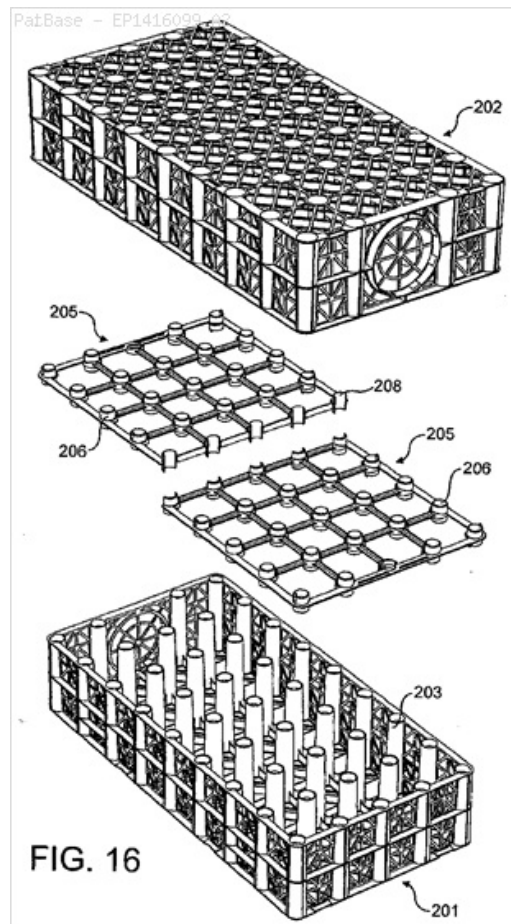
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Cited documents: EP0943737 A1, DE20105694 U1, DE20105694,

Forward Citations: WO18162524, WO18114039, WO14006137, WO13110637, WO12037594, WO11042415, WO10081681, WO10081681, WO10081680, WO08140310, WO08140298, WO08140297, WO07092828, WO07092828, WO05124040, US9957987, US9506235, US9169630, US8602681, US8292117, US7712997, US7621695, US7591610, US2015016874, US10132069, RU2600181, RU2600181, RU2540112, NO338184, NL2000638, JP4722127, JP2008502825, JP2007211585, GB2444550, GB2440398, GB2417733, GB2417733, FR2929630, FR2927913, FR2916774, FR2888591, EP3495575, EP3460133, EP2949826, EP2949826, EP2870300, EP2807311, EP2687642, EP2682534, EP2495373, EP2470722, EP2379817, EP2325403, EP2312071, EP2273136, EP2273136, EP2169127, EP2169127, EP2107172, EP1997970, EP1887145, EP1854928, EP1818463, EP1777353, EP1777353, EP1749943, EP1749943, EP1743984, EP1743984, EP1607535, EP1607534, EP1526223, DE202011110303, DE202010018411, DE10348280, DE102017105011, DE102010045001, DE102010028607, DE102009044412, DE102009004915, AU2013211661, AU2010305511,

Abstract:

The invention relates to a ground water handling or attenuation system comprising at least two vertically stackable perforated cells 201, 202, each with an open major surface which are joined together in open-face to open-face relation by a grip 205, there being in the embodiment two grids 20t per assembly. Each cell has upstanding columns 203 of predominantly female form into which male spigots 206 of the grid(s) engage with a push fit, there being releasable locking means 208 of some spigots 206 which engage behind internal locking means of respective columns.



26) Family number: 46549541 (US2011308648A)

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Title: STORMWATER MANAGEMENT SYSTEM

Priority: US20090151039P 20090209 US20100148311 20100205 WO2010US00340 20100205

Family:

Publication number	Publication date	Application number	Application date
US2011308648 AA	20111222	US20100148311	20100205
WO10090755 A2	20100812	WO2010US00340	20100205
WO10090755 A3	20100930	WO2010US00340	20100205

Probable Assignee: LRM IND INT INC

Assignee(s):(std): LRM IND INT INC ; LRM IND INTERNATIONAL INC ; POLK DALE E ; POLK DALE E JR ; POLK KARL L

Assignee(s): LRM INDUSTRIES INTERNATIONAL INC

Inventor(s):(std): POLK DALE E JR ; POLK KARL L ; POLK DALE E

Agent(s): ERVIN MICHAEL 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 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): E02D29/045 E03B11/14 E03F1/00 E21D13/00 (Advanced/Invention); E02D29/045 E03B11/00 E03F1/00 E21D13/00 (Core/Invention)

CPC: E03F1/003 Y10T137/8593

European class: E03F1/00B2

US class: 137/561.00RP 137/561R

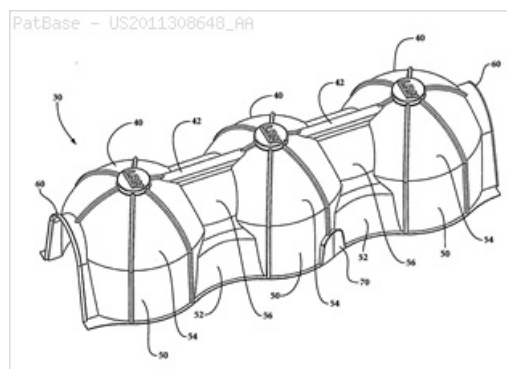
[Classification Explorer](#)

Cited documents: US7621695 BB, US7226241 BB, US7052209 BA, US6612777 BB, US6129482 A, US5890838 A, US3951439 A, US2006233612 AA, US2005074285 AA, US2004184884 AA, US2003219310 AA,

Forward Citations: US9982425, US8287726, US2018100300, US2012132581, US10626592, US10597861, US10570603, EP2884015, DE102013225856,

Abstract:

A stormwater management system including: a plurality of adjacent modules with each module comprising alternating domed cell units and interconnector units and wherein each domed cell unit of a module includes a pair of spaced apart vertical sidewalls that curve outwards with respect to a centerline extending lengthwise through the module; and each interconnector unit of a module includes a pair of spaced apart vertical sidewalls 52 that curve inwards with respect to the same centerline, wherein the outwardly curved vertical sidewalls of the domed cell units of any module are thus nested with the inwardly curved vertical sidewalls of the interconnector units of the next adjacent module.

**27) Family number: 66697623 (USD795383S)**

© PatBase

Title: HEXAGONAL WATER STORAGE UNIT ASSEMBLY

Priority: US20160567711F 20160610

Family:

Publication number	Publication date	Application number	Application date
USD795383 S1	20170822	US20160567711F	20160610

Probable Assignee: BIO CLEAN ENV SERVICES INC

Assignee(s):(std): BIO CLEAN ENV SERVICES INC

Assignee(s): BIO CLEAN ENVIRONMENTAL SERVICES INC ; CREDIT SUISSE CAYMAN ISLANDS BRANCH AG ; BANK OF AMERICA NA COLLATERAL AGENT AS

Inventor(s):(std): KENT ZACHARIHA

Agent(s): STEVEN W

US class: D23/202

Locarno class: 23/01

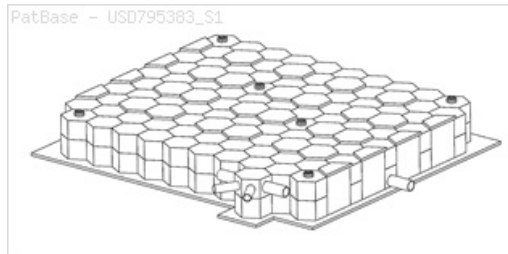
[Classification Explorer](#)

Cited documents: USD654556 S1, USD651278 S1, USD201340 S1, US8162567 BB, US7621695 BB, US7591610 BB, US6962464 BA, US6428870 BA, US5387741 A, US4363563 A, US2462101 A,

Forward Citations: US10267004,

Abstract:

[Source: Claim 1] The ornamental design for a hexagonal water storage unit assembly, as shown and described.



28) Family number: 76238628 (USD864366S)

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Title: EVAPORATION PANEL
Priority: US20170618509F 20170921
Family:

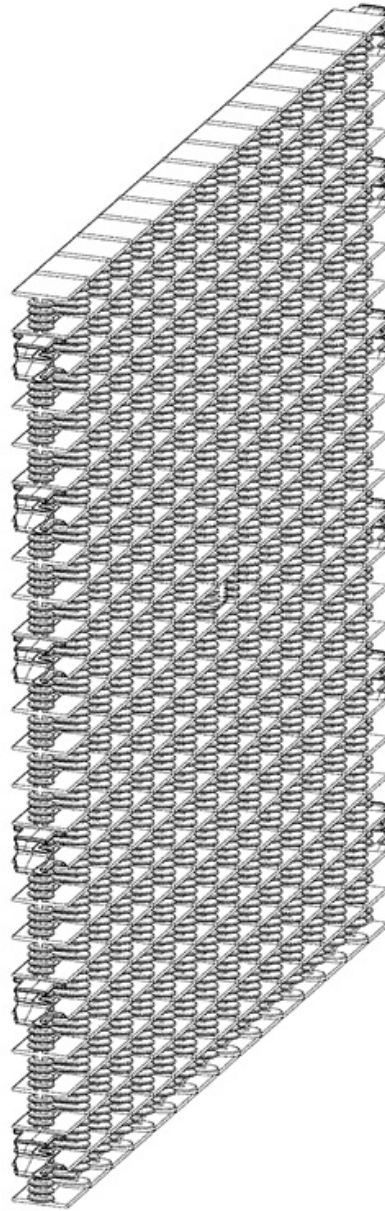
Publication number	Publication date	Application number	Application date
USD864366 S1	20191022	US20170618509F	20170921

Probable Assignee: ECOVAP INC
Assignee(s):(std): ECOVAP INC
Inventor(s):(std): PATEY MICHAEL J
Agent(s): THORPE NORTH AND WESTERN LLP
US class: D23/354
Locarno class: 23/04

[Classification Explorer](#)

Cited documents: WO18089848 A2, WO18085915 A1, WO15164444 A2, WO12061886 A1, WO11098341 A1, USD816820 S1, USD815267 S1, USD812425 S1, USD738999 S1, USD708729 S1, USD708311 S1, USD685898 S1, USD683838 S1, USD683836 S1, USD554946 S1, USD523110 S1, USD449100 S1, USD340835 S1, USD277228 S1, US9738545 BB, US9593025 BB, US9581369 BB, US9551532 BB, US9186597 BB, US9005310 BB, US8703065 BB, US8460509 BB, US8425668 BB, US8397529 BB, US8347950 BB, US8236423 BB, US8173026 BB, US8173025 BB, US8092656 BB, US8016977 BB, US7722739 BB, US7677835 BB, US7661662 BB, US7621695 BB, US7604710 BB, US7591610 BB, US7426956 BB, US7328886 BB, US6814135 BB, US6740137 BB, US6651435 BA, US6637379 BB, US6423187 BA, US6383369 BB, US6276872 BA, US6200428 BA, US6003319 A, US5958239 A, US5940578 A, US5865242 A, US5810510 A, US5792313 A, US5565067 A, US5413872 A, US5335728 A, US5326503 A, US5240560 A, US5207869 A, US5096543 A, US5094721 A, US5086832 A, US5084188 A, US5043061 A, US5028357 A, US5017309 A, US4996008 A, US475637 A, US4728468 A, US4713172 A, US4693302 A, US4691766 A, US4267130 A, US4039451 A, US3973987 A, US3791634 A, US3751017 A, US3748832 A, US3704869 A, US3648990 A, US3648135 A, US3385198 A, US2877995 A, US2498965 A, US2018334393 AA, US2017038104 AA, US2016362307 AA, US2016146552 AA, US2016091253 AA, US2015315036 AA, US2015129180 AA, US2015122498 AA, US2015107295 AA, US2015021001 AA, US2014014277 AA, US2013175155 AA, US2013025825 AA, US2013020078 AA, US2013000878 AA, US2012198870 AA, US2011139378 AA, US2011100924 AA, US2010313587 AA, US2010242516 AA, US2010236767 AA, US2010006276 AA, US2008066874 AA, US2008035545 AA, US2007210631 AA, US2006231240 AA, US2006185277 AA, US2006026985 AA, US2005001339 AA, US2003046942 AA, SU1188501 A1, FR77829 E, EP2495373 A2,

Abstract:
[Source: Claim 1] The ornamental design for an evaporation panel, as shown and described herein.

**29) Family number: 55317696** (US8602681B)

© PatBase

Title: MODULAR STORM WATER INFILTRATION APPARATUS
Priority: US20100305565P 20100218 US20110028265 20110216
Family:

Publication number	Publication date	Application number	Application date
US8602681 BA	20131210	US20110028265	20110216

Probable Assignee: STRUCTURAL PLASTICS INC
Assignee(s):(std): MASSER JEREMY ; STRUCTURAL PLASTICS INC
Inventor(s):(std): MASSER JEREMY
Agent(s): YOUNG BASILE HANLON AND MACFARLANE PC
International class E02B13/00 (Advanced/Invention)
(IPC 8-9):
CPC: E03F1/005 Y02A10/33 Y02A20/408
US class: 405/43

[Classification Explorer](#)

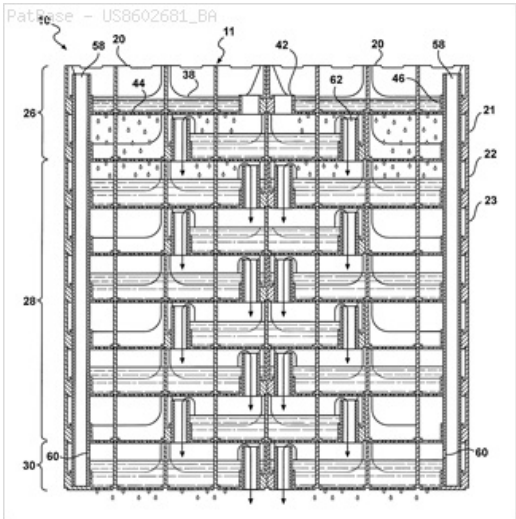
Cited documents: US8065831 BB, US7637056 BB, US7621695 BB, US7591610 BB, US7540953 BB, US7485218 BB, US7363936 BA, US7163635 BB, US7080480 BB, US7011474 BB, US6854231 BB, US6837652 BA, US5810510 A, US5617679 A, US4983069 A, US4118892 A, US2008044231 AA, EP1416099 A2,

Forward Citations: JP2015194033,

Abstract:

A modular storm water infiltration apparatus for directing water into an adjacent soil column. The apparatus includes a plurality of infiltration chambers each having a bottom panel and a peripheral wall that define an interior for storing water. The peripheral wall of each infiltration chamber has at least one infiltration aperture formed therethrough for communicating water laterally into the soil column. The bottom panel of each infiltration chamber has at least one drain aperture formed therethrough for

communicating water downwardly out of the infiltration chamber. The infiltration chambers are configured to be stacked vertically with respect to one another.



30) Family number: 53724703 (US2014291221A) © PatBase

Title: DRAINAGE TRENCH UNIT AND TRANSPORT UNIT FORMED FROM SUCH DRAINAGE TRENCH UNITS
Priority: DE201110086016 20111109 EP20120192007 20121109 WO2012EP72284 20121109
EP20120790485 20121109

Family:	Publication number	Publication date	Application number	Application date
	DE102011086016 A1	20130516	DE201110086016	20111109
	DE502012008113 D1	20161013	DE201250008113T	20121109
	DE502012010561 D1	20170727	DE201250010561T	20121109
	EP2592194 A1	20130515	EP20120192007	20121109
	EP2592194 B1	20160831	EP20120192007	20121109
	EP2776639 A1	20140917	EP20120790485	20121109
	EP2776639 B1	20170614	EP20120790485	20121109
	US2014291221 AA	20141002	US20120356957	20121109
	US9506235 BB	20161129	US20120356957	20121109
	WO13068541 A1	20130516	WO2012EP72284	20121109

Probable Assignee: FRAENKISCHE ROHRWERKE GEB KIRCHNER GMBH AND CO KG
Assignee(s):(std): FRAENKISCHE ROHRWERKE GEB KIRCHNER GMBH AND CO ; FRAENKISCHE ROHRWERKE GEB KIRCHNER GMBH AND CO KG ; KIRCHNER FRAENK ROHR
Assignee(s): FRANKISCHE ROHRWERKE GEB KIRCHNER GMBH AND CO KG ; FRAENKISCHE ROHRWERKE GEBR KIRCHNER GMBH AND CO KG
Inventor(s):(std): ADAMS DIETMAR ; SCHUETZ MICHAEL
Agent(s): WEICKMANN AND WEICKMANN PATENTANWAELTE RECHTSANWALT PARTMBB; WEICKMANN AND WEICKMANN PATENT U RECHTSANWAELTE PARTMBB; HERZOG MARKUS; WEICKMANN AND WEICKMANN PARTMBB; RANKIN HILL AND CLARK 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 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 E02B11/00 E03B3/03 E03F1/00 E03F3/04 (Advanced/Invention)
(IPC 8-9):

CPC: E03F3/046 E03F1/005

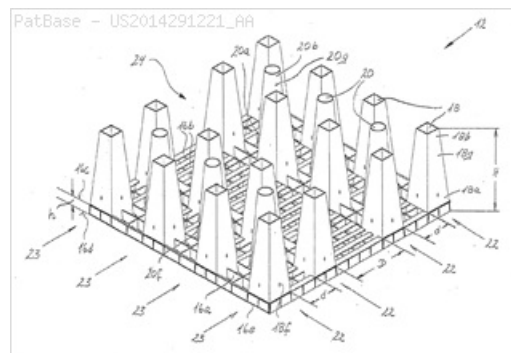
US class: 210/170.03 405/36

[Classification Explorer](#)

Cited documents: WO11089690 A1, WO11089690 A1, WO11042415 A1, WO11042415 A1, WO11004508 A1, WO11004508 A1, WO10095155 A1, WO09137876 A1, WO09137876 A1, WO08140297 A1, WO08140297 A1, US2012255624 AA, US2011108559 AA, US2010200600 AA, US2009250369 AA, US2009250369 AA, US2008166182 AA, US2007181197 AA, US2007181197 AA, JPWO2011089690 A1
JP2009013756 A2, JP2009013756 A2, JP2002115278 A2, JP2002115278 A2, EP2463449 A1, EP2463449 A1, EP1743984 A1, EP1416099 A2, EP1260640 A1, EP1260640 A1, EP0943737 B1, EP0943737 B1,
DE102010028607 A1

Forward Citations: WO19180139, WO18162524, WO18162524, WO16042139, WO16015786, USD888192, US9957987, US9896832, US9732508, US2019106873, US2019106864, US2018327995, US2016312427, US2016097175, US2015016874, US2012255624, US10626580, US10557247, US10415260, US10267029, US10151096, US10151083, NL1040959, JP2019073855, JP2016191212, ITUB20160171, EP3543168, EP3194676, EP3192932, EP2980328, EP2980328, DE202016107114, DE202016107113, DE102017105011, DE102014222520, CN110206115, CN104746631,

Abstract: The invention relates to a drainage trench unit (10) which comprises at least one drainage trench sub-unit (12), the at least one drainage trench sub-unit (12) having a base wall (16) and a plurality of hollow pillars (18), said pillars (18) being connected integrally to the base wall (16) and tapering, preferably conically, away from the base wall (16), i.e. tapering from their base end (18a) to their top end (18b). The invention also relates to a transport unit for transporting a plurality of such drainage trench units (10).



31) Family number: 74353722 (US2019145112A)

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Title: IMPROVEMENTS IN STRUCTURAL CELLS, MATRICES AND METHODS OF ASSEMBLY
Priority: US20170811043 20171113 WO2018AU51212 20181113 US20190540047 20190813
Family:

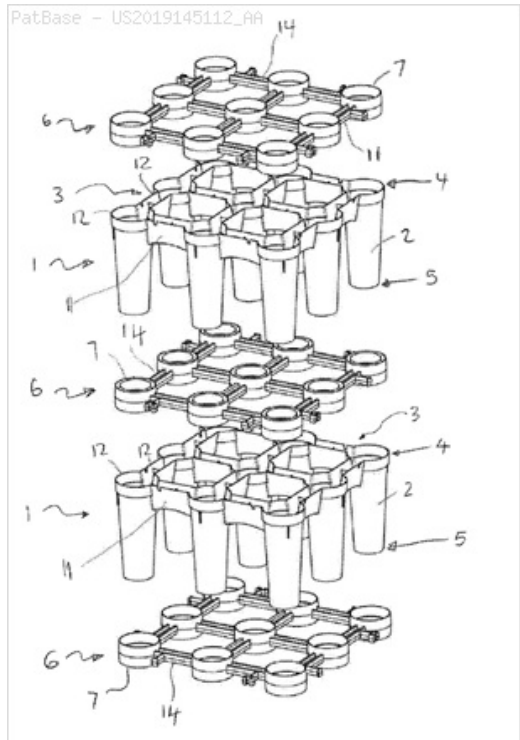
Publication number	Publication date	Application number	Application date
AU2018363887 AA	20200521	AU20180363887	20181113
CA3081411 AA	20200501	CA20183081411	20181113
US2019145112 AA	20190516	US20170811043	20171113
US2019383043 AA	20191219	US20190540047	20190813
US10415260 BB	20190917	US20170811043	20171113
WO19090397 A1	20190516	WO2018AU51212	20181113

Probable Assignee: STRATA INNOVATIONS PTY LTD
Assignee(s):(std): STRATA INNOVATIONS PTY LTD
Assignee(s): GOODEN BENJAMIN DOUGLAS
Inventor(s):(std): GOODEN BENJAMIN DOUGLAS
Agent(s): CREATEIP; MBM INTELLECTUAL PROPERTY LAW LLP; HONAKER WILLIAM H; DICKINSON WRIGHT PLLC; SNOEP ROBERT
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 DJ 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 JO JP KE KG KH KM KN KP KR KW 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): E01C3/06 E01C5/00 E01C9/00 E01F5/00 E04F15/02 E04G11/48 E04G17/02 E04G9/05 (Advanced/Invention); E04B5/32 E04F15/024 (Advanced/Non-invention)
CPC: E01C3/006 E01C3/06 E01C9/004 E01C11/18 E01C11/185 E01C11/226 E03F1/005 E04B5/326 E01F5/00 E04F15/02417 E04G9/05 E04G11/48 E04G17/02 E03F1/002
US class: 404/17

[Classification Explorer](#)

Cited documents: WO11017766 A1, USD607547 S1, USD572342 S1, USD560469 S1, USD424386 S1, USD319291 S1, US9775304 BB, US9775303 BB, US9506235 BB, US9453322 BB, US9441355 BB, US9371938 BB, US9303365 BB, US9085887 BB, US9085886 BB, US8696241 BB, US8608401 BB, US8555586 BB, US8267618 BB, US8065834 BB, US8065831 BB, US7752805 BB, US7704011 BB, US7621695 BB, US7470092 BB, US7344335 BB, US7326000 BB, US7207137 BB, US7201538 BB, US7160058 BB, US7080480 BB, US7056058 BB, US6962464 BA, US6941705 BB, US6779946 BA, US6648549 BA, US660540 A, US6585449 BB, US6550207 BA, US6428870 BA, US6095718 A, US5848856 A, US5823706 A, US5482408 A, US5460867 A, US5371967 A, US5123778 A, US5030343 A, US4991834 A, US4797026 A, US4671699 A, US4665645 A, US4622775 A, US4478901 A, US4118892 A, US3948190 A, US3802790 A, US2792164 A, US2602323 A, US2375454 A, US2015284914 AA, US2015016874 AA, US2012255624 AA, US2012163911 AA, US2012141203 AA, US2012057932 AA, US2012020746 AA, US2011097151 AA, US2010260546 AA, US2009250369 AA, US2009242731 AA, US2008190059 AA, US2008166182 AA, US2008115413 AA, US2008113161 AA, US2005155285 AA, NL7507530 A, KR100919182 B1, JP837945, JP8037945 A2, JP11103676, GB2359311 B2, GB1436315 A, FR2547561 A1, EP2601828 A1, EP2243621 B1, EP2243621 A1, EP1932975 A1, EP0943727 A2, EP0943727 A1, EP0943233 A1, EP0860550 A2, EP0803618 A2, EP0679763 B1, EP0679763 A2, DE8805949 U1, DE8805949 U, DE20302681 U1, DE20302681 U, CN202658489 U, CA2662129 AA, CA2552348 AA,
Forward Citations: USD888192, USD880730,

Abstract:
Structural cells and matrices using the structural cells for positioning below a hardscape that define a void space therein, the structural cells, matrices using the cells and methods of assembly allowing in one embodiment the introduction of a structural fluid such as concrete to provide an alternative structural cell and matrix product. In one embodiment a structural cell assembly is described comprising a structural cell with a plurality of legs integrally linked to a frame at a first frame end, the frame linking the legs together and the frame defining a generally flat plane with the legs extending substantially orthogonally away from the first frame end about the frame flat plane to a leg terminal end; and a separate plate engaging the legs, the separate plate comprising linked sockets, each socket engaging the leg terminal end; and/or linked sockets, each socket engaging the leg frame ends or a part thereof.



32) Family number: 69744769 (US2018334393A)

© PatBase

Title: WASTEWATER EVAPORATIVE SEPARATION SYSTEMS

Priority: US20160420460P 20161110 US20170541573P 20170804 US20170580116P 20171101
US20170584733P 20171110 US20170809914 20171110 US20170809920 20171110
US20170809943 20171110 US20170809934 20171110 WO2017US61178 20171110
WO2018US45446 20180806

Family:	Publication number	Publication date	Application number	Application date
	AU2017356192 AA	20190606	AU20170356192	20171110
	CA3043035 AA	20190506	CA20173043035	20171110
	CL2019001276 A1	20190913	CL20190001276	20190509
	CN110621623 A	20191227	CN201780082305	20171110
	EP3538491 A2	20190918	EP20170870457	20171110
	IN202027008973 A	20200313	IN202027008973	20200302
	MX2019005413 A1	20190919	MX20190005413	20171110
	US2018334393 AA	20181122	US20170809943	20171110
	US2018345165 AA	20181206	US20170809914	20171110
	US2018345166 AA	20181206	US20170809920	20171110
	US2018347910 AA	20181206	US20170809934	20171110
	US10442702 BB	20191015	US20170809934	20171110
	US10556809 BB	20200211	US20170809920	20171110
	US10562789 BB	20200218	US20170809914	20171110
	US10562790 BB	20200218	US20170809943	20171110
	WO18089848 A2	20180517	WO2017US61178	20171110
	WO18089848 A3	20180621	WO2017US61178	20171110
	WO19028478 A2	20190207	WO2018US45446	20180806
	WO19028478 A3	20190314	WO2018US45446	20180806
	WO19089999 A1	20190509	WO2018US58807	20181101
	ZA201902898 A	20200129	ZA20190002898	20190509

Probable Assignee: ECOVAP INC

Assignee(s):(std): ECOVAP INC

Assignee(s): PATEY MICHAEL J

Inventor(s):(std): MICHAEL J PATEY ; PATEY MICHAEL ; PATEY MICHAEL J

Agent(s): FB RICE PTY LTD; BERESKIN AND PARR LLP SENCRL SRL; ESTUDIO CLARKE MODET AND CO CHILE SPA; WALKER ROSS THOMSON; THORPE NORTH AND WESTERN LLP; OAKESON GARY P

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 DJ 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 JO JP KE KG KH KM KN KP KR KW 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): B01D1/00 B01D1/14 B01D1/20 B01D1/22 B01D1/30 B01D5/00 C02F C02F1/00 C02F1/04 C02F1/08 C02F1/12 C02F1/14 C02F1/28 C02F3/02 C02F9/00 C2F1/28 C2F3/02 C2F9/00 E04B1/61 F26B17/12 F26B25/18 F28B F28B9/08 F28C3/08 F28D1/03 F28F25/04 F28F25/06 F28F3/00 F28F3/08 (Advanced/Invention); C02F1/76 E04B1/61 F28C1/00 F28F25/00 (Advanced/Non-invention)

CPC: F28F25/087 B01D1/007 C02F1/08 C02F2101/20 C02F2103/10 B01D3/346 F28F25/08 C02F3/24 C02F2101/32 C02F2103/023 C02F2103/365 C02F2201/002 B01D1/221 F28C3/08 F28F25/04 F28F25/06

F28F2025/005 Y02W10/37 B01D1/0005 B01D1/0035 B01D1/0088 B01D1/14 B01D1/20 B01D1/305
B01D5/0015 C02F1/048 C02F1/12 C02F1/14 C02F2201/008 E04B1/6116 F28C2001/006 F28D1/03
F28D1/0366 F28F3/08 B01D1/26 B01D1/0047

US class:

1/1 159/3 165/166

[Classification Explorer](#)

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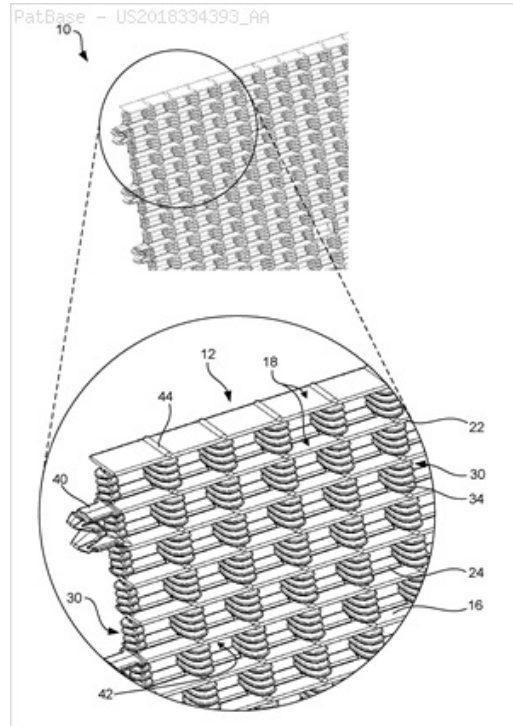
WO18089848 A2, WO18085915 A1, WO15164444 A2, WO12061886 A1, WO11098341 A1, USD816820 S1, USD815267 S1, USD812425 S1, USD738999 S1, USD708729 S1, USD708311 S1, USD685898 S1, USD683838 S1, USD683836 S1, USD554946 S1, USD523110 S1, USD449100 S1, USD340835 S1, USD277228 S1, US9738545 BB, US9593025 BB, US9581369 BB, US9551532 BB, US9186597 BB, US9005310 BB, US8703065 BB, US8460509 BB, US8425668 BB, US8397529 BB, US8347950 BB, US8236423 BB, US8173026 BB, US8173025 BB, US8092656 BB, US8016977 BB, US7722739 BB, US7677835 BB, US7661662 BB, US7621695 BB, US7604710 BB, US7591610 BB, US7426956 BB, US7328886 BB, US6814135 BB, US6740137 BB, US6651435 BA, US6637379 BB, US6423187 BA, US6383369 BB, US6276872 BA, US6200428 BA, US6003319 A, US5958239 A, US5940578 A, US5865242 A, US5810510 A, US5792313 A, US5565067 A, US5413872 A, US5335728 A, US5326503 A, US5240560 A, US5207869 A, US5096543 A, US5094721 A, US5086832 A, US5084188 A, US5043061 A, US5028357 A, US5017309 A, US4996008 A, US475637 A, US4728468 A, US4713172 A, US4693302 A, US4691766 A, US4267130 A, US4039451 A, US3973987 A, US3791634 A, US3751017 A, US3748832 A, US3704869 A, US3648990 A, US3648135 A, US3385198 A, US2877995 A, US2498965 A, US2018334393 AA, US2017038104 AA, US2016362307 AA, US2016146552 AA, US2016091253 AA, US2015315036 AA, US2015129180 AA, US2015122498 AA, US2015107295 AA, US2015021001 AA, US2014014277 AA, US2013175155 AA, US2013025825 AA, US2013020078 AA, US2013000878 AA, US2012198870 AA, US2011139378 AA, US2011100924 AA, US2010313587 AA, US2010242516 AA, US2010236767 AA, US2010006276 AA, US2008066874 AA, US2008035545 AA, US2007210631 AA, US2006231240 AA, US2006185277 AA, US2006026985 AA, US2005001339 AA, US2003046942 AA, US1188501 A, SU1188501 A1, FR77829 E, EP2495373 A2,

Forward Citations:

WO19089999, USD864366, US9902972, US2017108277, US10562790, US10562789, US10556809, US10442702,

Abstract:

A wastewater evaporative separation system can include an evaporation panel assembly and a wastewater delivery system. The evaporative panel assembly can include at least 10 individual evaporation panels laterally joined together and fluidly coupled to a body of wastewater. The evaporation panel assembly can be configured for receiving wastewater from the body of wastewater and evaporating water therefrom as the wastewater cascades down the evaporation panel assembly and contaminants generally become more concentrated. The wastewater delivery system can be associated with the body of wastewater and can include a fluid directing assembly delivering wastewater from the body of wastewater to an upper portion of the evaporation panel assembly.



33) Family number: 60349770 (US2015260313A)

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Title: MODULAR CONSTRUCTION CONDUIT UNIT

Priority: US20140951771P 20140312 US20150643118 20150310 US20160172691 20160603
US20160577070F 20160909 WO2017US34199 20170524 US20170663990 20170731

Family:	Publication number	Publication date	Application number	Application date
	AU2017275411 AA	20190117	AU20170275411	20170524
	AU2017275411 AA	20171207	AU20170275411	20170524
	CA171693 S	20170906	CA20160171693F	20161118
	CA3064722 AA	20191122	CA20173064722	20170524
	CN109563701 A	20190402	CN201780045568	20170524
	EP3464740 A1	20190410	EP20170728965	20170524
	US2015260313 AA	20150917	US20150643118	20150310
	US2016281347 AA	20160929	US20160172691	20160603
	US2017328051 AA	20171116	US20170663990	20170731
	US9371938 BB	20160621	US20150643118	20150310
	US9739046 BB	20170822	US20160172691	20160603

US10597861 BB	20200324	US20170663990	20170731
WO15138427 A1	20150917	WO2015US19668	20150310
WO17210054 A1	20171207	WO2017US34199	20170524
WO19027791 A1	20190207	WO2018US43857	20180726

Probable Assignee: JM SALES ASSOCIATES INC

Assignee(s):(std): J M SALES ASS INC ; J M SALES ASSOCIATES INC ; JOSEPH STEVE MISKOVICH ; MISKOVICH JOSEPH S

Assignee(s): JM SALES ASSOCIATES INC

Inventor(s):(std): MISKOVICH JOSEPH S

Agent(s): GRIFFITH HACK; PERRY AND CURRIER; NOTARO GIANCARLO; YOUNG BASILE HANLON AND MACFARLANE PC; GARASCIA CHRISTIAN J; GARASCIA CHRISTIAN J 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 DJ 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 JO JP KE KG KH KM KN KP KR KW 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): B23P19/00 E02B11/00 E03F1/00 E03F5/10 E04B5/16 E04B5/32 E04B5/36 E04F15/024 E04F15/12 F16L1/11 F16L57/06 (Advanced/Invention); E04B5/32 E04B5/36 E04B5/48 E04F15/12 (Advanced/Non-invention)

CPC: E03F1/002 E03F1/005 E03F5/10 E04B5/326 E04B5/36 E04B5/48 E04F15/123 Y10T29/49826 E02B11/005 E03F1/003

US class: 1/1 29/428 405/157 405/36 405/43

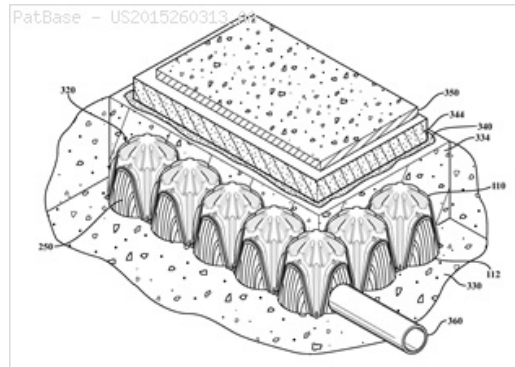
[Classification Explorer](#)

Cited documents: WO16204801 A1, WO09140295 A1, WO03069074 A1, USD668318 S1, US9371938 BB, US8147688 BB, US7887256 BB, US7806627 BB, US7744756 BB, US7604133 BB, US7413381 BA, US7226241 BB, US6383372 BA, US6379541 BA, US6132139 A, US6062767 A, US5890838 A, US5445730 A, US5322387 A, US5241979 A, US5087151 A, US4919568 A, US4910568 A, US4652170 A, US2016281347 AA, US2015260313 AA, US2013008841 AA, US2011308648 AA, US201113135581, US2010059430 AA, US2009279953 AA, US2009261036 AA, US2009250369 AA, US2009180834 AA, US2008181725 AA, US2008166182 AA, US2008035547 AA, US2007258770 AA, US2006233612 AA, US2004253054 AA, US2004184884 AA, US2004131416 AA, US2003070977 AA, US1529019 A, US1494847 A, US1060737 A, NL1020177 C2, EP2322733 A1, EP1953297 A2, EP1932975 A1, EP0803618 A2, EP0780524 B1, EP0780524 A1, CN205024760 U, CN104131520 A,

Forward Citations: WO19027791, WO17210054, WO16204801, USD868935, USD868934, USD797235, US9982425, US9593783, US2018100300, US2016010762, US10612227, US10597861, US10570603, US10570602, US10415260, IT201800006136, FR3080389,

Abstract:

A modular conduit unit system and method for exemplary uses in routing utility lines and storage management of fluids. The modular conduit units may include independent dome-shaped structures including four orthogonally oriented openings and internal chambers. On connection of many conduit units, multiple passageways are created for routing utility lines through the modular structure. Closure panels may be selectively installed to close off the conduit units and passageways for underground storage of fluids or other materials. The modular units are capable of being encased by materials including concrete for underground and concrete floors and walls of commercial buildings.



34) Family number: 31390789 (US2003200708A)

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Title: DRAINAGE AND FOOTING FORM DEVICE

Priority: US20020134270 20020425 US20020292298 20021112 US20020318644 20021216
US20030663110 20030916 WO2003US39362 20031211 US20040775459 20040210
US20040808641 20040325 US20060366934 20060302

Family:	Publication number	Publication date	Application number	Application date
	AU2003293503 AA	20040729	AU20030293503	20031211
	AU2003293503 AH	20040729	AU20030293503	20031211
	US2003200708 AA	20031030	US20020292298	20021112
	US2004091320 AA	20040513	US20030663110	20030916
	US2005058510 AA	20050317	US20040775459	20040210
	US2005175419 AA	20050811	US20040808641	20040325
	US2006147270 AA	20060706	US20060366934	20060302
	US6648550 BA	20031118	US20020318644	20021216
	US6866447 BA	20050315	US20040775459	20040210
	US7033110 BB	20060425	US20040808641	20040325
	WO04061259 A2	20040722	WO2003US39362	20031211
	WO04061259 A3	20050728	WO2003US39362	20031211
	WO05078197 A1	20050825	WO2005US02790	20050201

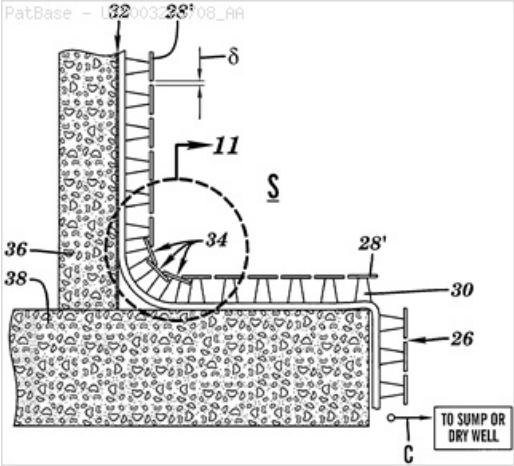
Probable Assignee: PARKER ALTON
Assignee(s):(std): PARKER ALTON ; PARKER ALTON F
Inventor(s):(std): PARKER ALTON F
Inventor(s): PARKER ALTON ; ALTON F PARKER
Agent(s): ARLEN L OLSEN SCHMEISER OLSEN AND WATTS; SCHMEISER OLSEN AND WATTS
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY 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 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): E02B11/00 E02B13/00 E02D19/00 E02D31/02 E04F17/00 (Advanced/Invention); E02B11/00 E02B13/00 E02D31/00 E04F17/00 (Core/Invention); E21B (Subclass/Invention)
International class (IPC 1-7): E02B11/00 E02D19/00 E03F1/00 E04B1/70 E04F17/00 E04F17/04 E04F17/08 E21B
CPC: E02B11/005 E02B11/00 E02D31/02 E04F17/00 E02D3/10 E02D31/002 E04F2203/08
European class: E02B11/00 E02B11/00B E02D3/10 E02D31/00B E02D31/02 E04F17/00
US class: 405/302.7 405/36 405/43 405/43S 405/45 405/45P 405/46 405/50 405/50P 52/169.5 52/169.500P 52/169.500S 52/302.1 52/302.100S

[Classification Explorer](#)

Cited documents: US7033110 BB, US6866447 BA, US6702517 BB, US6702517 BA, US6702517 B1, US6527474 BB, US6527474 BA, US6527474 B1, US6247874 BA, US5934828 A, US5857297 A, US5634741 A, US5190404 A, US5152892 A, US4995759 A, US4955759 A, US4943185 A, US4840515 A, US4730953 A, US4704048 A, US4574541 A, US4572700 A, US4466092 A, US4246305 A, US4045964 A, US4019326 A, US3965686 A, US3888087 A, US2005286980 AA,

Forward Citations: WO09023832, WO08141035, US9416515, US9404232, US9273456, US9074335, US9045874, US8763330, US8584420, US8291668, US8221618, US8216479, US8142106, US8123935, US7858174, US7788868, US7666303, US7654051, US7637061, US7621695, US7618213, US7607270, US7591610, US7504835, US7108454, US7108454, US7033110, US7014390, US2018327995, US2015176283, US2015113888, US2014311070, US2014248084, US2011209426, US2010229498, US2010101153, US2009320399, US2009282762, US2009229195, US2009045149, US2009020466, US2009007509, US2008289399, US2008245010, US2008190059, US2008166182, US2008124175, US2008075536, US2008054914, US2008047886, US2008041005, US2007181197, US2006147270, US2006078386, US2005224690, US2005223670, US2005175419, US10626592, US10557247, US10519619, US10308536, US10253491, FR2948701, EP2063027, EP2063027, EP1914351, AU2012293299,

Abstract:
A water-impervious, non-biodegradable, unitary drainage device for conveying subsoil seepage to suitable disposal areas. The invention features a "sandwich" construction consisting of a planar top and base sheets, set apart by a matrix of supports, disposed between and integrally joined to the sheets. The matrix is a row-column array of frusto-geometrically shaped elements; in an alternate embodiment, this sheet-separating array is a series of parallel row, or columnar, partitions. Partitions, in emulation of discrete posts, contain structural separations, at selected locations, in order to relinquish the inherent rigidity of the unitary construction. The parallel top and bottom sheets are fixed permanently to, or formed integrally with, posts or partitions, rendering the nominal construction quite rigid. Making selective through-cuts in the top sheet imparts, to the invention, a one- or two-dimensional flexibility that facilitates its use under concrete floors, installation on vertical surfaces and as a footing form-drain.



35) Family number: 55202821 (US2016219798A) © PatBase

Title: TREE ROOT PROTECTION PANEL
Priority: GB20130017174 20130927 WO2014GB52924 20140926
Family:

Publication number	Publication date	Application number	Application date
AU2014326358 AA	20160407	AU20140326358	20140926
AU2014326358 AI	20160630	AU20140326358	20140926
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GB201317174 A0	20131106	GB20130017174	20130927
GB2518657 A1	20150401	GB20130017174	20130927
HK1208595 A1	20160311	HK20150109450	20150925
US2016219798 AA	20160804	US20140025066	20140926
WO15044676 A1	20150402	WO2014GB52924	20140926

Probable Assignee:

Assignee(s):(std):

Assignee(s):

Inventor(s):(std):

Inventor(s):

Agent(s):

GREENLEAF LTD

GREENBLUE URBAN LTD ; GREENLEAF LTD

BOWIE DEAN

BOWIE DEAN

DEAN BOWIE

FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; CARSON JAMES WILLIAM; CARSON LAW OFFICE PROFESSIONAL CORP; EVE ROSEMARY MARGARET; KEITH LAM LAU AND CHAN; BROOKES BATCHELLOR 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 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):

A01G A01G13/00 A01G13/02 E01C E01C9/00 (Advanced/Invention);

A01G E01C (Subclass/Invention)

CPC:

Y02A30/32 E01C9/004 A01G13/0237 E01C9/005

US class:

1/1 405/302.4

Classification Explorer

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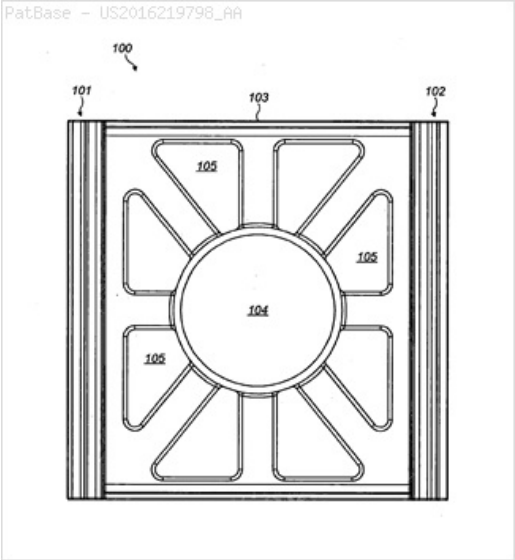
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DE102011084022 B3

DE102011084022 B3

Abstract:

A modular anti-soil-compaction apparatus, comprising a matrix of substantially flat, modular panels (100), each panel (100) comprising two opposing faces surrounded by edges, at least one aperture (104,105) passing through the faces, and modular panel connection means located on at least one pair of edges; each panel (100) being engageable with at least one adjacent panel (100) by respective connection means.



36) Family number: 51781836 (US2013284750A)

© PatBase

Title:

Priority:

Family:

STORAGE COMPOSITE, AND STORAGE TANK AND PERMEABLE STORAGE TANK USING SAME

JP20110028530 20110214 JP20120557890 20120206 WO2012JP52610 20120206

Publication number	Publication date	Application number	Application date
AU2012218761 AA	20120823	AU20120218761	20120206
AU2012218761 BB	20150430	AU20120218761	20120206
BR112013014850 A2	20161018	BR20131114850	20120206
CA2822601 AA	20130620	CA20122822601	20120206
CA2822601 C	20151020	CA20122822601	20120206
CN103370482 A	20131023	CN201280008566	20120206
CN103370482 B	20141126	CN201280008566	20120206
IN01935KN2013 A	20140328	IN2013KN01935	20130617
IN313799 B	20190614	IN2013KN01935	20130617
JP2012111465 A1	20140703	JP20120557890T	20120206
JP5384757 B1	20140108	JP20120557890T	20120206
JP5384757 B2	20140108	JP20120557890T	20120206
KR101408678 B1	20140617	KR20137019624	20120206
KR20130114220 A	20131016	KR20137019624	20120206
MX2013009294 A1	20130913	MX2013009294	20120206
MY164287 A	20171130	MY20130701179	20120206
SG191775 A1	20130830	SG20130050471	20120206
TH133408 A	20140506	TH20131004214	20120206

TH67044 B	20181221	TH20131004214	20120206
TW201250089 A	20121216	TW20120104370	20120210
TWI453326 B	20140921	TW20120104370	20120210
US2013284750 AA	20131031	US20120978244	20120206
US9079708 BB	20150714	US20120978244	20120206
VN15776 A1	20160926	VN20130002738	20120206
WO12111465 A1	20120823	WO2012JP52610	20120206

Probable Assignee: TOTETU MFG CO LTD

Assignee(s):(std): TAKAI SEIICHIRO ; TOTETU MFG CO LTD

Assignee(s): TOTETU MFG CO

Inventor(s):(std): TAKAI SEIICHIRO

Inventor(s): SEIICHIRO TAKAI

Agent(s): PHILLIPS ORMONDE FITZPATRICK; G RONALD BELL AND ASSOCIATES; GREENBLUM AND BERNSTEIN PLC; SUDA MASAYOSHI

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): B65D90/02 B65D90/12 E03B11/00 E03B11/14 E03B3/02 E03B3/03 E03F1/00 (Advanced/Invention); B65D90/02 (Advanced/Non-invention); E03B3/03 E03F1/00 (Core/Invention)

International class (IPC 1-7): B65D90/02 B65D90/12 E03B3/03 E03F1/00

CPC: B65D90/12 E03F1/002 E03F1/005

European class: E03F1/00B4

US class: 1/1 220/565 220/651

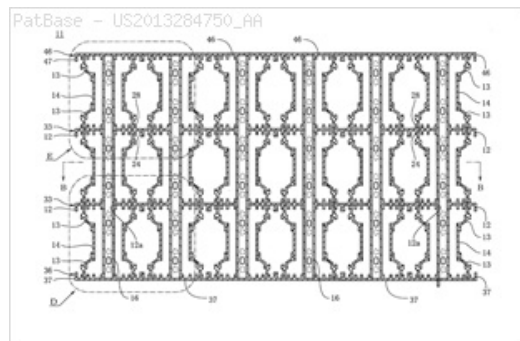
[Classification Explorer](#)

Cited documents: US6626609 BA, US2008166182 AA, TW482844 B, JP2008255767 A2, JP2008231683 A2, JP2008038457 A2, JP2008038457, JP2007056611 A2, JP2007056611, JP2003020696 A2, JP2003020696, EP1997970 A1, DE202006011483 U, CN101476386 A, CN101115888 A,

Forward Citations: WO16042140, US10294640, US10132069, NL1040958, EP3194674, CN108350687,

Abstract:

The interior of a storage tank is filled with a storage composite and one cylindrical rib is positioned on each of the lower surface and the upper surface of partitions to project therefrom. Funnel-shaped end spacers have a large-diameter tube portion for engaging with and connecting to the cylindrical ribs on the upper and lower surfaces of the partitions, and a small-diameter tube portion having a smaller diameter than the large-diameter tube portion. Both ends of cylindrical connecting spacers engages with the small-diameter tube portion of a pair of end spacers, and the length of one side of a partition is S, the diameter of the section in which the cylindrical rib engages the large-diameter tube is set within the range of 0.40S to 0.95S. Multiple levels of horizontal connected units are provided, and end spacers and connecting spacers are interposed between the horizontal connected units of multiple levels.



37) Family number: 65575868 (US2018313065A)

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Title: STORAGE TANK AND METHOD FOR CONSTRUCTING SAME

Priority: JP20150212596 20151029 WO2016JP81547 20161025

Family:

Publication number	Publication date	Application number	Application date
CN108350687 A	20180731	CN201680062797	20161025
IN201837017970 A	20180622	IN201837017970	20180514
JP2017082500 A2	20170518	JP20150212596	20151029
JP6579917 B2	20190925	JP20150212596	20151029
US2018313065 AA	20181101	US20160770971	20161025
US10294640 BB	20190521	US20160770971	20161025
WO17073546 A1	20170504	WO2016JP81547	20161025

Probable Assignee: TOTETSU MFG CO LTD

Assignee(s):(std): TOTETSU MFG CO LTD ; TOTETU MFG CO LTD

Inventor(s):(std): TAKAI SEIICHIRO

Agent(s): GREENBLUM AND BERNSTEIN PLC; SUDA MASAYOSHI

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 DJ 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 KW 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 B65D88/76 E03B11/14 E03B3/02 E03B3/03 E03B3/06 E03F1/00 (Advanced/Invention)

(IPC 8-9):

CPC: E03F1/005 Y02A20/106 Y02A20/108 B65D88/76 E03B3/02 E03B3/03 E03B3/06 E03B11/14

US class: 1/1 405/55

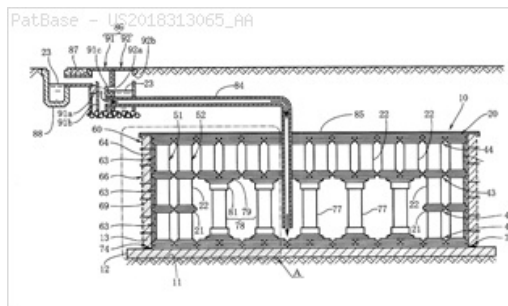
[Classification Explorer](#)

Cited documents: WO15030584 A1, WO12111465 A1, WO11129019 A1, WO11129019, US9079708 BB, US2017321397 AA, US2013284750 AA, US2013152499 AA, US2010200600 AA, US2009279953 AA, US2008166182 AA, US2005155285 AA, JP5179677 A2, JP5179677, JP51079677, JP2197629 A2, JP2197629, JP21097629, JP2013167106 A2, JP2013167106, JP2008255767 A2, JP2008255767, JP2005290677 A2, JP2005290677, GB2518195 A1, EP1743984 A1, CN203741971 U, CN1910325 A, CN103370482 B, CN101405203 A, CA2822601 AA, CA2457135 AA, CA2286336 AA,

Forward Citations: WO20075505, JP6695399, JP2020060005,

Abstract:

A storage tank according to the present invention has a concrete bottom plate laid on a bottom part of a hole dug in the ground, a storage assembly provided on the bottom plate and accommodated in the hole, a concrete quadrangular tubular side wall provided around the storage assembly on the bottom plate, and a side-wall formation member configured to form the side wall into a square frame shape. The storage assembly has a plurality of square tabular partition plates, tubular spacers connected to the partition plates, and an outermost layer part provided on the outermost side of the storage assembly. The side-wall formation member has quadrangular tubular multi-step inner molds formed of a plurality of first plate members, a plurality of vertical reinforcing bars inserted into the multi-step partition plates, and a quadrangular tubular single-step outer mold which holds a plurality of second plate members by a plurality of separators.



38) Family number: 45338886 (US2010226721A)

© PatBase

Title: MODULE AND ASSEMBLY FOR MANAGING THE FLOW OF WATER

Priority: US20090333248F 20090305 US20090553732 20090903 CA20102708111 20100622
CN201080016284 20100806 WO2010US44730 20100806 US20140298450 20140606
US20140303037 20140612 US20160221348 20160727 US20160296838 20161018
US20190380595 20190410

Family:	Publication number	Publication date	Application number	Application date
	AR078319 AA	20111102	AR2010P103225	20100902
	AU2010207743 AA	20110317	AU20100207743	20100804
	AU2010207743 BB	20140605	AU20100207743	20100804
	AU327818 S	20090929	AU20090013445F	20090903
	BRPI1007800 A2	20160223	BR2010PI07800	20100806
	BRPI1007800 B1	20200407	BR2010PI07800	20100806
	CA132013 S	20100406	CA20090132013F	20090902
	CA2708111 AA	20110303	CA20102708111	20100622
	CA2708111 C	20180410	CA20102708111	20100622
	CN102395732 A	20120328	CN201080016284	20100806
	CN102395732 B	20140820	CN201080016284	20100806
	CN104131520 A	20141105	CN201410345570	20100806
	CN104131520 B	20170118	CN201410345570	20100806
	CO6521377 A2	20120917	CO20120054376	20120330
	EP2473678 A1	20120711	EP20100814140	20100806
	EP2473678 A4	20150211	EP20100814140	20100806
	EP2473678 B1	20200429	EP20100814140	20100806
	HK1198662 A1	20150522	HK20140112119	20141202
	HK1198662 B	20180323	HK20140112119	20141202
	IN03054CN2012 A	20130621	IN2012CN03054	20120403
	JP1381809 S	20100308	JP20090020579F	20090907
	JP2013503991 A2	20130204	JP20120527885	20100806
	JP2013503991 T2	20130204	JP20120527885T	20100806
	KR101802538 B1	20171128	KR20127008483	20100806
	KR20120065375 A	20120620	KR20127008483	20100806
	MX2011008865 A1	20120221	MX20110008865	20100806
	MY155160 A	20150915	MY20110004123	20100806
	NZ587378 A	20120330	NZ20100587378	20100816
	SG174154 A1	20111028	SG20110061272	20100806
	TW201111590 A	20110401	TW20100126899	20100812
	TWI542758 B	20160721	TW20100126899	20100812
	US2010226721 AA	20100909	US20090553732	20090903
	US2014341653 AA	20141120	US20140298450	20140606
	US2014341654 AA	20141120	US20140303037	20140612
	US2016333564 AA	20161117	US20160221348	20160727
	US2017037610 AA	20170209	US20160296838	20161018
	US2019234059 AA	20190801	US20190380595	20190410
	US8770890 BB	20140708	US20090553732	20090903

Title: FILLING MEMBER FOR UNDERGROUND WATER TANK
Priority: JP20120043741 20120229 JP20150245882 20151217
Family:

	Publication number	Publication date	Application number	Application date
	JP2013181280 A2	20130912	JP20120043741	20120229
	JP2016035203 A2	20160317	JP20150245882	20151217
	JP5917949 B2	20160518	JP20120043741	20120229
	JP6164559 B2	20170719	JP20150245882	20151217

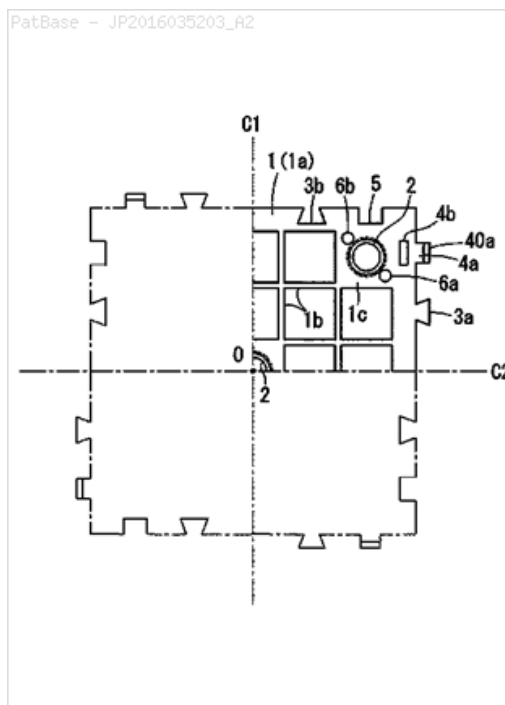
Probable Assignee: TAKIRON CO
Assignee(s):(std): TAKIRON CO
Assignee(s): TAKIRON CO LTD
Inventor(s):(std): MAYAMA ATSUYA
International class (IPC 8-9): E03B11/14 E03B3/02 E03B3/03 E03F1/00 (Advanced/Invention)
CPC: Y02A10/33 Y02A20/106 Y02A20/108

[Classification Explorer](#)

Cited documents: US2008166182 AA, US2008166182, US20080166182, JP3146194 U, JP3146194 U, JP2007321388 A2, JP2007321388, JP2007182708 A2, JP2007182708, JP2007056611 A2, JP2007056611, JP200334970, JP2003034970 A2, JP2003034970, JP2002339920 A2, JP2002339920, JP2001355259 A2, JP2001355259,

Abstract:

PROBLEM TO BE SOLVED: To provide a filling member for an underground water tank which is excellent in workability in which filling members adjacent in an oblique direction can be connected to each other only when the filling members are arranged in a horizontal direction (longitudinal/lateral direction) and in a vertical direction without using a connector, and the arrangement work in the horizontal direction can be easily performed since the filling members have no longitudinal/lateral directionality.SOLUTION: A filling member for an underground water tank comprises at least a square horizontal board part 1, and a connection protrusion 3a and a connection recess 3b for horizontal connection and a connection protrusion 4a and a connection recess 4b for oblique connection are integrally formed in each of division units where the horizontal board part 1 is divided into four division units with a longitudinal center line C1 and a lateral center line C2, and each division unit is shaped so as to be matched each time it rotates by every 90 degrees with an intersection O between the longitudinal center line and the lateral center line as a center. Since the filling members have no longitudinal/lateral directionality, the arrangement work can be easily performed. The filling members adjacent in the horizontal direction are connected to each other by fitting the connection protrusion 3a to the connection recess 3b, and the filling members adjacent in the oblique direction are connected to each other by engaging the connection protrusion 4a with the connection recess 4b.SELECTED DRAWING: Figure 2



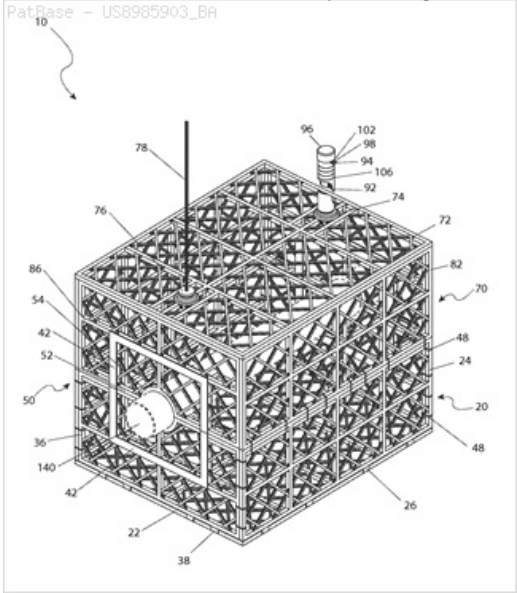
Title: BELL-HOLE PIPELINE PROTECTION SYSTEM
Priority: US20140937143P 20140207 US20140294854 20140603
Family:

	Publication number	Publication date	Application number	Application date
	US8985903 BA	20150324	US20140294854	20140603

Probable Assignee: FRITH TRENT W
Assignee(s):(std): FRITH TRENT W
Inventor(s):(std): FRITH TRENT W
Agent(s): ROBERT C; MONTGOMERY PATENT AND DESIGN
International class (IPC 8-9): F16L1/11 F16L57/00 (Advanced/Invention)

CPC: F16L1/11 F16L57/00
US class: 405/157 405/184.5
[Classification Explorer](#)
Cited documents: US8753037 BB, US7886463 BB, US7712997 BB, US7677835 BB, US7621695 BB, US7591610 BB, US7070360 BB, US6779946 BA, US6648549 BA, US5938373 A, US5846026 A, US5833019 A, US5639364 A, US5120433 A, US4955756 A, US2308316 A, US2010021236 AA, US2009279953 AA, EP1770323 A2, EP0626483 A2,
Forward Citations: WO17148918, USD802803, USD740450, US9593783, US2016097175, US2016010762, NL2016344, CN109424789, CN105065849,

Abstract:
An underground service protection system made from two main sections, a first frame having a bottom panel with hinged side and end panels and a second frame having side and end panels. The end panels retain inserted slides having half apertures. The half apertures surround a pipe or other structure being protected while the first frame and second frame form a protective cage. A standpipe and a back-fill gauge extend upward from the protection system. The hinged ends and sides enable the first frame to be installed with reduced material removable. The first frame and the second frame are aligned and held together using stakes on the first frame and pockets on the second frame. Tie wraps are used to hold the sides and the stakes and pockets together.



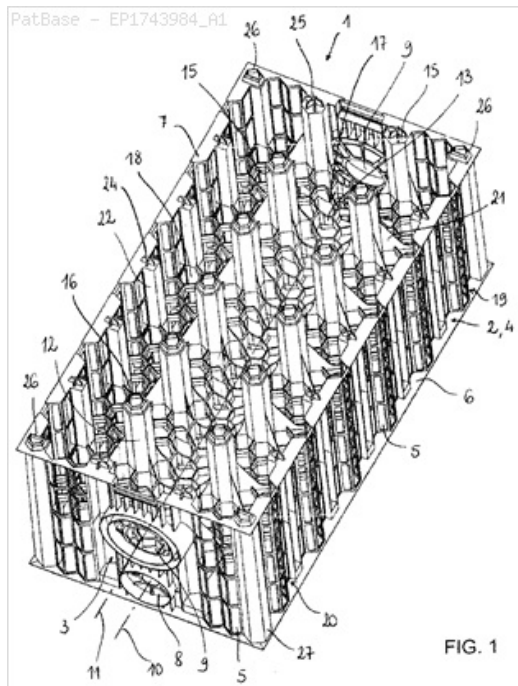
41) Family number: 34104937 (EP1743984B1) © PatBase

Title:	CELL AND WATER RECOVERY SYSTEM			
Priority:	FR20050007538 20050713 FR20050507538 20050713			
Family:	Publication number	Publication date	Application number	Application date
	AT430850 E	20090515	AT20060356072T	20060619
	DE602006006622 D1	20090618	DE200660006622T	20060619
	EP1743984 A1	20070117	EP20060356072	20060619
	EP1743984 B1	20090506	EP20060356072	20060619
	ES2326687 T3	20091016	ES20060356072T	20060619
	FR2888591 A1	20070119	FR20050007538	20050713
	FR2888591 B1	20090116	FR20050007538	20050713

Probable Assignee: SOGEMAP INJECTION SA
Assignee(s):(std): SOGEMAP INJECTION ; SOGEMAP INJECTION SA
Assignee(s): SOGEMAP INJECTION SOC ANONYME ; SOGEMAP INJECTION SOCIETE ANONYME
Inventor(s):(std): GUICHERD MICHEL
Inventor(s): MICHEL GUICHERD
Agent(s): MAUREAU PHILIPPE ET AL; CABINET GERMAIN ET MAUREAU
Designated states: AL AT BA BE DE ES GB HR MK YU
International class
(IPC 8-9): E01F5/00 E03B3/03 E03B3/40 E03F1/00 E03F5/10 (Advanced/Invention);
E01F5/00 E03B3/00 E03F1/00 E03F5/10 (Core/Invention)
CPC: E03B3/03 E03F1/005 Y02A20/108
European class: E03B3/03 E03F1/00B4
[Classification Explorer](#)

Cited documents: EP1416099 A2, EP0943737,
Forward Citations: WO11042415, WO08140310, US9957987, US9506235, US8292117, US7621695, US7591610, US2016312427, US2015016874, US2014291221, US10294640, RU2495199, GB2440398, EP2687642, EP2470722, EP2273136, EP2273136, EP1997970, EP1818463, DE202010016295,

Abstract:
The cell has a lateral wall (2) with four sides (3, 4) defining a parallelepiped inner volume. Each side has orifices (5) for passage of water, and the sides (3) include openings (8, 9). A set of columns (12) housed in the inner volume extends parallel to the sides of the wall, where each column has a height equal to the height of the wall. An intermediary wall (13) has orifices (18), and connects the columns between them and to the lateral wall. Upper and lower sides of the cell are opened and do not have a transversal wall. An independent claim is also included for a water recovery system comprising a cell.



42) Family number: 28307942 (US2002152708A)

© PatBase

Title: CONCRETE BLOCK, BLOCK JOINT AND BLOCK STRUCTURE
Priority: JP19970192836 19970717 JP19970270202 19971002 WO1998JP03189 19980715
 US20000462663 20000111 US20020116044 20020405

Family:	Publication number	Publication date	Application number	Application date
	AU199882428 A1	19990210	AU19980082428	19980715
	EP1036638 A1	20000920	EP19980932541	19980715
	EP1036638 A4	20001220	EP19980932541	19980715
	JP11036314 A2	19990209	JP19970192836	19970717
	JP11105024 A2	19990420	JP19970270202	19971002
	JP2942745 B2	19990830	JP19970192836	19970717
	JP2942746 B2	19990830	JP19970270202	19971002
	US2002152708 AA	20021024	US20020116044	20020405
	WO9903659 A1	19990128	WO1998JP03189	19980715

Probable Assignee: RITA ENGINEERING CONSULTANTS CO LTD
Assignee(s):(std): KIMURA SHIRO ; KIMURA TAIZO ; RITA ENGINEERING CONSULTANTS C ; RITA SOGO KIKAKU KK ; TANNO MASASHI
Assignee(s): RITA ENGINEERING CONSULTANTS CO LTD ; RITA ENGINEERING CONSULTANTS CO LTD ; RITA ENGINEERING CONSULTANTS CO
Inventor(s):(std): TANNO MASASHI ; KIMURA TAIZO ; KIMURA SHIRO
Inventor(s): MASASHI TANNO ; SHIRO KIMURA ; TAIZO KIMURA
Agent(s): KATO HISASHI

Designated states: AT AU BE CA CH CN CY DE DK ES FI FR GB GR IE IT KR LI LU MC NL PT SE SG US VN

International class (IPC 8-9): A01K61/00 B28B7/18 B28B7/26 B28B7/28 B28B7/34 E01C11/22 E01C5/00 E02B3/12 E02B3/14 E02B3/18 E02D17/18 E02D17/20 E02D29/02 E03B11/14 E03F1/00 E04B2/02 E04B2/08 E04B2/14 (Advanced/Invention); E04B2/02 (Advanced/Non-invention); A01K61/00 B28B7/00 B28B7/16 B28B7/28 B28B7/34 E01C11/00 E01C5/00 E02B3/00 E02B3/12 E02B3/14 E02D17/18 E02D17/20 E02D29/02 E03B11/00 E03F1/00 E04B2/02 E04B2/04 E04B2/14 (Core/Invention); E04B2/02 (Core/Non-invention)

International class (IPC 1-7): A01K61/00 B28B7/18 B28B7/26 E01C11/22 E02B3/14 E02B3/18 E02D17/18 E02D17/20 E02D29/02 E03B11/14 E03F1/00 E04B2/02 E04B5/04 E04C2/04

CPC: Y02A20/108 Y02A40/81 Y02A40/834 E03B3/03 B28B7/18 B28B7/28 B28B7/342 E01C5/006 E02B3/129 E02D17/20 E02D29/025 E04B2/08 E04B2/14 E04B2002/0243

European class: B28B7/18 B28B7/28 B28B7/34B E01C5/00D2 E02B3/12E E02D17/20 E02D29/02E E03B3/03 E04B2/08 E04B2/14 P04B2/02M3

US class: 52/596 52/596P

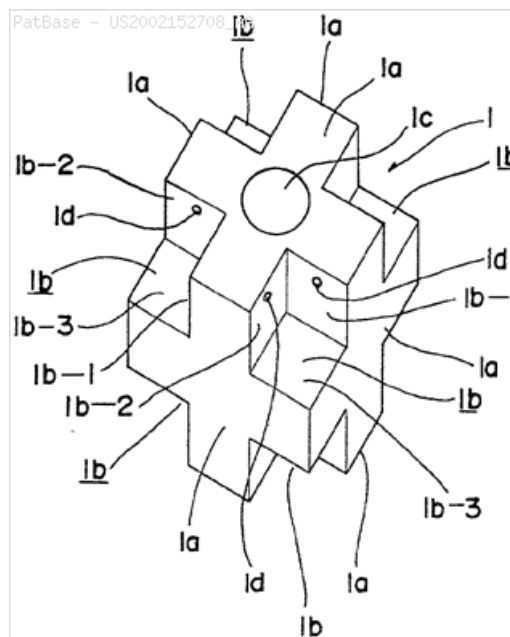
[Classification Explorer](#)

Cited documents: US4928469 A, US3548600 A, NL7414567 A, JP9242044 A2, JP9242044, JP868136, JP8319660, JP8155933 A2, JP8155933, JP6328606, JP63268823, JP63028606 A2, JP6299592, JP6220906, JP6145020 B2, JP56144114 A2, JP56144114, JP5586458 U, JP55086458 U1, JP5132994, JP4980122, JP49080122 A2, JP2139989 U, DE9102317 U1, DE589385 A, DE2611000 A1,

Forward Citations: WO19016122, WO18104734, WO09140295, WO09065567, WO07054130, WO0233178, US9915047, US9086268, US8898989, US8177457, US7708495, US7621695, US2015152614, US2014227480, US2012233935, NL1022686, JP6656621, JP5234475, JP4813688, JP4795120, JP4686655, JP4621928, JP4380005, JP4203187, JP2017095992, JP2007314217, JP2002347010, JP2002309658, JP2002129676, JP2001032255, JP2001017021, JP2001003367, GB2557321, FR3068995, EP2292857, EP2292857, EA11474, EA011474, CN102909780, CN102909780,

Abstract:

A concrete block having comparatively light weight and capable of being manufactured easily and used in various fields of application; a block joint for the concrete blocks, capable of carrying out the arrangement of the concrete blocks simply and retaining the arranged concrete blocks in good order; and a structure made by using the concrete blocks and the block joints. The joint (1, 2) has seats (1 b, 2 b) which are formed by cutting off predetermined portions thereof and adapted to restrict positions in which the concrete blocks (3) are arranged horizontally and vertically so that horizontally adjacent and vertically adjacent concrete blocks have clearances therebetween, and which support corner portions of the concrete blocks (3) thereon, each of the concrete blocks (10) being formed in a cubic outer shape so that it has an outwardly opened hollow structure, by using a split core (12) which can be broken down and removed after the concrete has been hardened, thus obtaining a structure of which the interior of the concrete blocks (10) communicate with each other when a plurality of blocks (10) are horizontally and vertically arranged.



43) Family number: 23991942 (US2003118404A)

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Title: STRUCTURAL MODULAR INTERCONNECTABLE SUBSOIL DRAINAGE CELL

Priority: AU2000PQ05141 20000117 WO2001AU00001 20010102

Family:	Publication number	Publication date	Application number	Application date
	AT307227 E	20051115	AT20010900332T	20010102
	AU2000005141 A0	20000210	AU2000PQ05141	20000117
	AU200124935 A1	20010731	AU20010024935	20010102
	AU200124935 A5	20010731	AU20010024935D	20010102
	AU514100 A0	20000210	AU2000PQ05141	20000117
	AU774813 B2	20040708	AU20010024935	20010102
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	DE60114178 D1	20060302	DE20016014178T	20010102
	DE60114178 T2	20060720	DE20016014178T	20010102
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	EP1280965 A4	20040519	EP20010900332	20010102
	EP1280965 B1	20051019	EP20010900332	20010102
	ES2251456 T3	20060501	ES20010900332T	20010102
	GB200217079 A0	20020904	GB20020017079	20010102
	GB2374268 A1	20021016	GB20020017079	20010102
	GB2374268 B2	20031001	GB20020017079	20010102
	HK1050922 A1	20060519	HK20030103040	20030509
	HK1050922 B	20060519	HK20030103040	20030509
	US2003118404 AA	20030626	US20020296844	20021126
	US6736569 BB	20040518	US20020296844	20021126
	WO0153608 A1	20010726	WO2001AU00001	20010102

Probable Assignee: LEE A S G

Assignee(s):(std): ELMICH AUSTRALIA PTY LTD ; LEE ALAN SIAN GHEE ; LEE SIAN GHEE ALAN ; LEE ALAN S G ; LEE A S G

Assignee(s): ALAN SIAN GHEE LEE

Inventor(s):(std): LEE ALAN SIAN GHEE ; LEE SIAN ; ALAN SIAN GHEE LEE

Agent(s): FB RICE PTY LTD; FB RICE; DEQI INTELLECTUAL PROPERTY LAW CORP

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 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 E02B E02B11/00 E02D E02D31/02 E02D31/06 (Advanced/Invention);
(IPC 8-9): E02B11/00 E02D31/00 (Core/Invention)

International class E02B11/00 E02B13/00 E02D31/02
(IPC 1-7):

CPC: E02B11/00 E02D31/06

European class: E02B11/00 E02D31/06

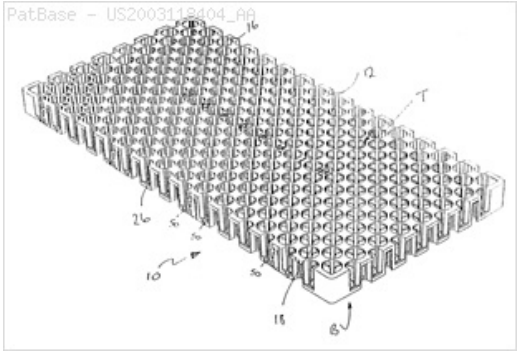
US class: 405/43 405/43P 405/45 405/46 405/46S 405/50 52/169.5 52/783.15 52/783.150S

[Classification Explorer](#)

Cited documents: US6247874 BA, US5857297 A, US5692348 A, US5437698 A, US5044821 A, US5030343 A, US4943185 A, EP0943797 A1, EP0943737 A1, EP0787865 A1, EP0244651 A2, DE4415595 A1, DE4400183 A1,

Forward Citations: WO16200356, WO15143021, WO11021169, WO09137876, USD687861, USD685924, USD684597, USD656250, USD593220, US9957987, US9938670, US9593783, US9493241, US8955268, US8881482, US8790037, US8696241, US8683769, US8596023, US8584420, US8505256, US8424257, US8407951, US8397466, US8161711, US8132372, US8091289, US8051617, US8020347, US7926227, US7797885, US7779579, US7770339, US7770337, US7770334, US7707783, US7704011, US7658038, US7621695, US7309188, US7131788, US7131788, US7056058, US6802669, US2016010762, US2015016874, US2012163911, US2011097151, US2011011010, US2010247984, US2008166182, US2008124175, US2007227094, US2007186499, US2006285920, US2006277854, US2006070314, US2006021726, US2005223670, US2005158123, US2005100401, US2004131423, US2003223819, US2003188505, JP6343024, JP5745396, JP2017509526, JP2011522522, GB2438817, EP3119675, EP3119675, EP2754762, EP1437305, EP1205390, EP1205390, CN106103278, CN105625548,

Abstract:
A structural module comprises a rigid cell including two substantially parallel planar members, each of which defines an ordered array of circular apertures with a series of columns disposed substantially normally to the two parallel surfaces retaining the two members in a fixed spaced relationship from each other. Male interlocking means which are integral with the module project from two adjacent side edges of the module. Female interlocking means are defined the other two adjacent side edges. The modules can be secured together in side edge to side edge relation, in which relationship the male locking means from a first module engage in a female locking means of a second module. The circular shape of the perimeter of the male locking member matches the size and shape of the apertures so that one module may also be inter-engaged with a second module with each male locking member of the one module projecting into one of the apertures of the second module in an interference type fit, with the first module oriented generally normally to the second module.



44) Family number: 57558981 (US2015284914A)

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Title:	MODULAR CELL AND MATRIX FOR SUPPORTING A LOAD BEARING FEATURE			
Priority:	AU20130901153 20130404	AU20130902491 20130705	AU20130903002 20130809	
	AU20140246660 20140404	WO2014AU00356 20140404	US20150744741 20150619	
	US20160056626 20160229	US20170713571 20170922		
Family:	Publication number	Publication date	Application number	Application date
	AU2014246660 AA	20151015	AU20140246660	20140404
	AU2014246660 BB	20181011	AU20140246660	20140404
	CA2908464 AA	20151001	CA20142908464	20140404
	CN203938946 U	20141112	CN201420055094U	20140128
	EP2981648 A1	20160210	EP20140779429	20140404
	EP2981648 A4	20161228	EP20140779429	20140404
	NZ712527 A	20180427	NZ20140712527	20140404
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	US2015284914 AA	20151008	US20150744741	20150619
	US2016242367 AA	20160825	US20160056626	20160229
	US2018070539 AA	20180315	US20170713571	20170922
	US9303365 BB	20160405	US20150744741	20150619
	US9775304 BB	20171003	US20160056626	20160229
	US10045490 BB	20180814	US20170713571	20170922
	WO14161039 A1	20141009	WO2014AU00356	20140404
Probable Assignee:	STRATA INNOVATIONS PTY LTD			
Assignee(s):(std):	STRATA INNOVATIONS PTY LTD			
Assignee(s):	GOODEN BENJAMIN DOUGLAS			
Inventor(s):(std):	GOODEN BENJAMIN ; LEE RALPH ; GOODEN BENJAMIN DOUGLAS			
Agent(s):	CREATEIP; RIDOUT AND MAYBEE LLP; TURNER RHIANNON ROSALIND; CRAIG J; LARKIN HOFFMAN DALY AND LINDGREN LTD; WILLIAM H; DICKINSON WRIGHT PLLC; HONAKER WILLIAM H; SNOEP ROBERT 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 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):	A01G13/00 A01G13/02 A01G27/00 E01C15/00 E01C23/00 E01C3/00 E01C5/00 E01C9/00 (Advanced/Invention)			
CPC:	A01G27/006 E01C23/00 E01C2201/00 E01C2201/20 A01G13/0237 E01C3/006 E01C9/005 E01C2201/207 E01C5/001			
US class:	1/1 404/135 404/43 47/1.01F			

Cited documents:

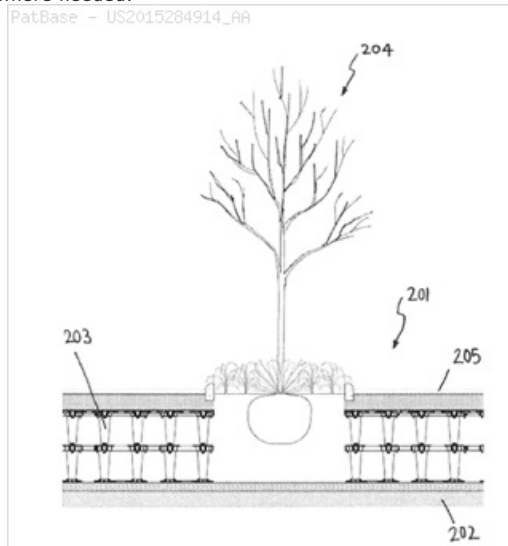
WO11017766 A1, US9085886 BB, US8696241 BB, US8683769 BB, US8608401 BB, US8353640 BB, US8267618 BB, US8065831 BB, US7771814 BB, US7704011 BB, US7326000 BB, US7207137 BB, US7160058 BB, US7080480 BB, US7056058 BB, US6962464 BA, US6941705 BB, US6648549 BA, US660540 A, US6585449 BB, US6550207 BA, US6428870 BA, US5848856 A, US5482408 A, US5030343 A, US4880333 A, US4478901 A, US3802790 A, US2792164 A, US2602323 A, US2394713 A, US2375454 A, US2327640 A, US2015016874 AA, US2014270945 AA, US2012255624 AA, US2012141203 AA, US2011097151 AA, US2010260546 AA, US2008166182 AA, US2008115413 AA, US2008113161 AA, US2005155285 AA, US2005117969 AA, JP8037945 A2, JP11103676, FR2547561 A1, EP2601828 A1, EP0943737 A1, EP0943233 A1, EP0860550 A2, EP0803618 A2, DE8805949 U, DE20302681 U1, CA2662129 AA, CA2552348 AA,

Forward Citations:

WO19090397, US9938697, US2018080201, US10415260, US10337175, US10267004, FR3080867, EP3564452, CN107288389,

Abstract:

A modular cell that may be used with other cells to form a matrix under a load bearing feature, the cell being a single piece moulding that supports a compressive load placed thereon, the moulding including a void space defined within: a skirt shaped support member defining a substantially planar surface with an opening therein; and at least one leg integral to and extending from the support member. The cell further includes at least one separate linking member that releasably links together multiple cells to form a matrix of cells. The cells may be linked together vertically and/or horizontally. The cell and matrix include greater load bearing capacity and rigidity through aligned legs to carry the weight as well as interlinking members that act to share the load among the various cells. The design also requires less material hence is cheaper to produce. The void space is also easily accessed hence allowing for easy access, filling and laying of utility lines where needed.

**45) Family number: 29730985 (US6648549B)**

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Title: MODULAR DRAINAGE CHANNELS
Priority: AU1999PQ03490 19991018 AU20010010081 20001018 WO2000AU01261 20001018
Family:

Publication number	Publication date	Application number	Application date
AT380275 E	20071215	AT20000971126T	20001018
AU200110081 A1	20010430	AU20010010081	20001018
AU200110081 A5	20010430	AU20010010081D	20001018
AU349099 A0	19991111	AU1999PQ03490	19991018
AU785313 B2	20070111	AU20010010081	20001018
DE00971126 T1	20060504	DE20000971126T	20001018
DE60037329 D1	20080117	DE20006037329	20001018
DE60037329 D1	20080117	DE20006037329T	20001018
DE60037329 T2	20081127	DE20006037329T	20001018
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EP1226315 A4	20040519	EP20000971126	20001018
EP1226315 B1	20071205	EP20000971126	20001018
ES2298157 T3	20080516	ES20000971126T	20001018
MY125938 A	20060929	MY20000004865	20001017
US6648549 BA	20031118	US20020111277	20020418
WO0129334 A1	20010426	WO2000AU01261	20001018

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Inventor(s):(std): URRIOLO HUMBERTO
Inventor(s): HUMBERTO URRIOLO
Agent(s): ASTRAL PROPERTY 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 HU HR 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): E02B11/00 E02B3/04 E03F1/00 E03F3/00 E03F3/04 E03F5/10 E03F5/14 (Advanced/Invention); E02B11/00 E03F1/00 E03F3/00 E03F3/04 E03F5/10 E03F5/14 (Core/Invention)
International class E02B11/00 E02B3/04 E03F1/00 E03F3/00 E03F3/04 E03F5/10 E03F5/14

(IPC 1-7):

CPC: Y02A10/33 Y02A20/408 E03F1/005 E02B11/005
European class: E02B11/00B E03F1/00B4
US class: 210/170 210/170.03 210/170.07 405/36 405/39 405/45 405/53

[Classification Explorer](#)

Cited documents: WO9516833 A1, WO0050142 A2, US6368017 BB, US5954451 A, US5848856 A, US5472297 A, US4483640 A, GB2338021 A1, FR2410496 A1, EP0952257 A2, EP0943737 A1, EP0768432 A1, DE4321350 A1, AU9712398 A1, AU728958 B2, AU728958, AU704302, AU1268895,

Forward Citations: WO17217853, WO03040483, US9809960, US9775304, US9732509, US9593783, US9593477, US9546044, US9522784, US9487421, US9481970, US9206574, US9175463, US9162169, US9139971, US9085887, US9045874, US8985903, US8985897, US8777523, US8292117, US8113740, US7677835, US7621695, US7591610, US7309188, US6802669, US6779946, US2018135292, US2017081830, US2016312427, US2016097175, US2016031645, US2015204039, US2014294507, US2010021236, US2009279953, US2009226260, US2009208288, US2009049760, US2008166182, US2007227094, US2007217866, US2007028514, US2006165320, US2005158123, US2003223819, US10584471, US10519619, US10415260, US10415225, US10053853, KR101084290, GB2440449, GB2440449, FR3080389, EP2312071, EP2273136, EP2273136, EP2071079, EP1526223, EP1526223, EP1446536,

Abstract:

An underground infiltration drainage system comprising water storage and/or water formed by a plurality of load bearing box like modules (1, 16 and 19), arranged adjacently and wrapped in water permeable geotextile. The modules have external walls (2) with openings (6) therethrough, such that water can flow into and out of the storage and/or piping through the perforated walls (2). The perforated walls (2) have peripheral edge members (3), with thin web members (4), extending between the peripheral edge members (3), to form support for the geotextile, and to define the openings (6). This arrangement while providing structural strength, also provides a large area of perforations.

