



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
15.11.2017 Bulletin 2017/46

(51) Int Cl.:
E03F 5/04 ^(2006.01) *E03D 1/012* ^(2006.01)

(21) Application number: **17167089.6**

(22) Date of filing: **19.04.2017**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

(71) Applicant: **Easy Sanitary Solutions B.V.**
7575 BK Oldenzaal (NL)

(72) Inventor: **Keizers, Jurgen Hendrik Peter Jozeph**
7575 BK Oldenzaal (NL)

(74) Representative: **'t Jong, Bastiaan Jacob**
Inaday Patent B.V.
Hengelosestraat 141
7521 AA Enschede (NL)

(30) Priority: **09.05.2016 NL 2016737**

(54) **SHOWER DRAIN AND FLOOR**

(57) The invention relates to a device with walls connecting watertightly to each other, which device comprises:

- a tray with a bottom and a peripheral wall upright along the edge of the bottom;
- a finishing part with at least a bottom wall, which bottom

wall is arranged between the peripheral wall, in the tray, wherein the tray is manufactured from a plastic material, wherein the finishing part is manufactured from a material differing from the plastic material of the tray and wherein the bottom wall of the finishing part extends up to the upright peripheral wall of the tray.

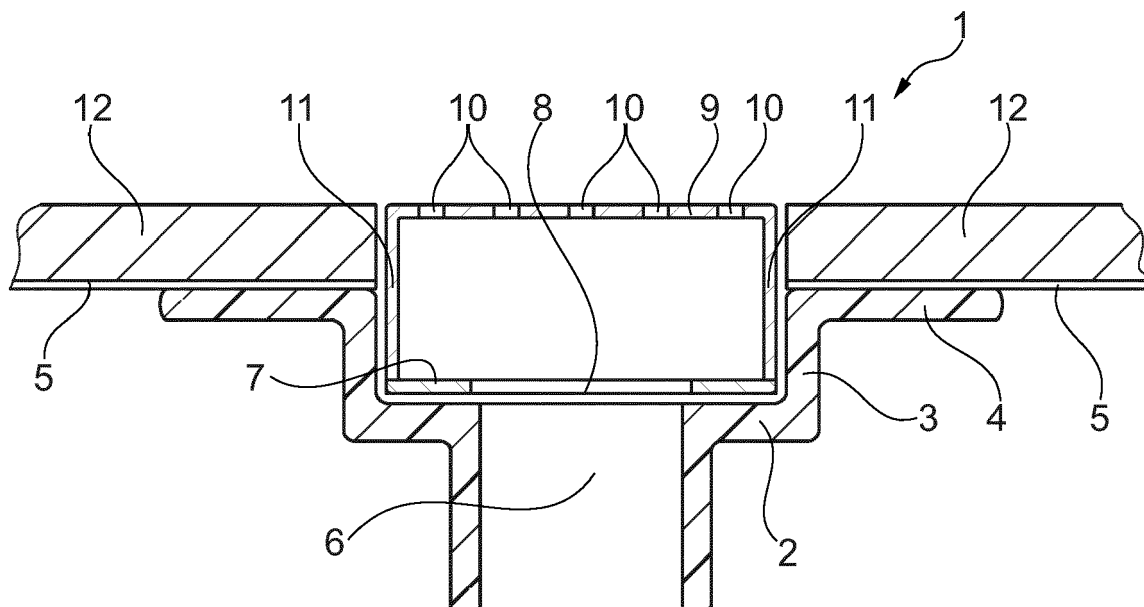


Fig. 1

Description

[0001] The invention relates to a device, which device comprises:

- a tray with a bottom and a peripheral wall upright along the edge of the bottom;
- a finishing part with at least a bottom wall, which bottom wall is arranged between the peripheral wall, in the tray. Such a tray can for instance be a shower drain or an alcove arranged in a wall.

[0002] Such a tray, which is a shower drain, is for instance known from EP 1630309. Two trays are here placed in each other, wherein the outflow openings fit into each other. Such a construction is used to enable a dry or a wet installation. It is important here that both trays are able to collect the water without leaking and are therefore each individually sufficiently strong and leakage-free.

[0003] In such a shower drain the two trays are therefore manufactured from the same material, and usually from stainless steel. Stainless steel in combination with being leakage-free moreover requires the necessary processes, such as welding and acid treatments, which increase costs.

[0004] It is also usual that when only one single tray is used in a shower drain, this is manufactured from stainless steel. This is inter alia because of the strength of such a tray, but also because of the appearance.

[0005] A stainless steel tray can be manufactured by deep-drawing, although simultaneous arrangement of an outflow is limited thereby. In the case of a bottom outflow deep-drawing is only possible to a limited depth. A side outflow is out of the question in any case. For the purpose of arranging an outflow a welding process will therefore also be necessary in the case of a deep-drawn tray.

[0006] It is also known to make a tray for a shower drain from plastic, for instance by means of injection moulding. This way of manufacturing is advantageous for large quantities, but provides a less attractive appearance in that the plastic is visible during use of the shower drain. This can per se be partially concealed by placing a stainless steel grating in the tray, but plastic parts will nevertheless remain visible, particularly when the grating is removed in order to clean the tray and the siphon optionally placed therein.

[0007] WO 2011/162598 describes a tray which is used as alcove in a pre-wall. The alcove is provided with a bottom wall which serves as rear wall and a peripheral wall upright from the bottom wall and forming the side walls of the alcove. Such an alcove is often made of stainless sheet steel, wherein the wall parts are bent from a flat sheet and are then welded to each other. Because an alcove often has large dimensions the lengths to be welded are also great, which entails the necessary costs, particularly because the welds usually have to be watertight.

[0008] It is now an object of the invention to reduce or even obviate the above stated drawbacks.

[0009] This object is achieved according to the invention with a device according to the preamble, which is characterized in that the tray is manufactured from a plastic material, wherein the finishing part is manufactured from a material differing from the plastic material of the tray and wherein the bottom wall of the finishing part extends up to the upright peripheral wall of the tray.

[0010] Because the finishing part is a material differing from plastic material, the plastic of the tray will be largely or even wholly concealed from view by the finishing part. It is hereby possible to manufacture the tray from plastic, while during use the device has the appearance of for instance stainless steel. It is also possible to manufacture the finishing part from a stone material, such as a tile or a piece of natural stone, whereby the device appears to be manufactured from stone, while the functional tray is manufactured merely from plastic.

[0011] By providing a finishing part the construction of the tray can be aimed fully at functionality, such as strength, watertightness, fire resistance, ease of manufacture and low material costs, while the construction of the finishing part can be aimed at appearance. It is hereby for instance also possible to give the finishing part a relatively thin form, particularly in the case of stainless steel, since the finishing part need not be watertight and need not have any strength. In such a case welding operations on the finishing part can likewise be dispensed with, even when the device has to be watertight, since the tray provides this functionality.

[0012] The plastic tray can very advantageously be manufactured by means of deep-drawing or injection moulding. In case the device is used as shower drain, outflows can also be co-moulded on the underside or side in simple manner with the injection moulding technique. It is then even possible to thus co-injection mould a siphon housing at the same time. In a metal embodiment of the prior art tray this is not possible due to the limitations of the deep-drawing and the relative inaccuracy of such a method of manufacture. With injection-moulding it is furthermore easier to obtain a greater degree of accuracy.

[0013] Plastic also has the advantage that it is more sound-insulating than metal. The sound reduction will be considerable, particularly when a foamed plastic such as PVC or ABS is used.

[0014] An additional advantage is that the tray can be placed in a floor or wall during construction and that the finishing part can be placed at the last moment, whereby the chance of damage is kept to a minimum. In addition, the customer can also select a type of material and colour for the finishing part at the last moment.

[0015] It is also possible to keep stocks low, since different finishing parts can be arranged on one tray. Merely applying a different finishing part thus for instance makes it possible to adapt a tray, which is used as shower drain for use in a shower space, to a swimming pool environ-

ment, where the chlorine usually has an adverse effect on metals.

[0016] It is further possible to opt to provide the tray without the usual slope. This makes it possible to use an injection mould which is adjustable to manufacture different lengths. The necessary slope can then be provided in the finishing part by a simple bending process of for instance the sheet material.

[0017] The plastic for the tray is preferably an adherable plastic, whereby sealing membranes can be attached to the sides of the tray. In the conventional metal trays the adhesion is not possible, or only with difficulty, whereby a more expensive method of attaching had to be selected in such cases.

[0018] It is noted that the bottom wall of the finishing part extends up to the upright peripheral wall of the tray, which in the context of the invention means that the edge of the bottom wall of the finishing part need not connect sealingly to the peripheral wall of the tray, but that there is a minimal space between the bottom wall and the peripheral wall. When the device is used as shower drain, this means that the greater part of the water collected by the shower drain flows over the bottom wall of the finishing part and to an outlet opening. It can thus occur that a small amount of the collected water runs between the edge of the bottom of the finishing part and the peripheral wall of the tray and directly to an outlet opening, and does not run via the opening in the bottom wall of the finishing part.

[0019] It is further noted that the bottom wall of the finishing part cannot be the same as the upper surface of a grating, which is usually applied in a shower drain. The upper surface of a grating usually lies close to the upper edge of the upright wall of the tray or even thereabove, so that the upper surface lies flush with the upper surface of the surrounding floor, which is often a tile layer. By contrast, the bottom wall of the finishing part lies conversely close to the bottom of the tray or even thereagainst. Furthermore, a grating is usually configured to allow the quickest possible passage of the water so that it can be collected in the tray, while with the finishing part the water is conversely collected above the bottom wall of the finishing part and between the peripheral wall of the tray, and then discharged via the opening in the bottom wall of the finishing part and the outflow opening in the tray.

[0020] Nor is the bottom wall of the finishing part comparable to any part of a so-called tile-shaped grating. A tile-shaped grating is understood to mean a holder in which a piece of tile can be placed. This holder is then placed in the tray of the device, whereby the surrounding tile floor appears to carry on into the shower drain. The water however does not flow substantially through the so-called tile-shaped grating but between the outer periphery of the tile-shaped grating and the peripheral wall of the tray. In some cases small openings are provided in the holder of the tile-shaped grating to enable discharge of water which may find its way in between the

tile and the holder. This is then only a small amount.

[0021] In a preferred embodiment of the device according to the invention the finishing part is manufactured from a metal such as stainless steel.

[0022] In another embodiment of the shower drain according to the invention a flange extending parallel to the bottom is arranged along the upper edge of the peripheral wall for attaching to a watertight layer, such as a sealing membrane.

[0023] Since the tray can be designed wholly for functionality, the horizontal flange can be optimally designed for applying a watertight layer thereto. This ensures that water which finds its way in between for instance the tray and the surrounding finishing layer cannot penetrate into the sub-floor or wall, but is ultimately fed back to the tray and can there be discharged via an outflow opening.

[0024] In a preferred embodiment of the device according to the invention the finishing part comprises an upright peripheral wall arranged along the edge of the bottom wall.

[0025] The peripheral wall of the tray can further be concealed from view with the peripheral wall arranged along the edge of the bottom wall of the finishing part. This is particularly advantageous in embodiments as shower drain, wherein use is not made of a so-called adjusting frame, and in embodiments as alcove. An adjusting frame is a frame, often of a thin strip material, which runs along the peripheral wall of the tray and is height-adjustable so that the surrounding tile layer can be finished. Water flowing over this tile layer will run over the edges of the adjusting frame and then run between the adjusting frame and into the tray.

[0026] The upright peripheral wall of the finishing part preferably protrudes above the upper edge of the peripheral wall of the tray. The sides of for instance a tile layer can hereby also be concealed from view, and an above stated adjusting frame is not necessary.

[0027] In a further embodiment of the device according to the invention the peripheral wall of the finishing part comprises interruptions extending from the bottom wall, for instance from the corners of the bottom wall.

[0028] Because the finishing part need not be watertight, since the tray already fulfils this function, it is not necessary for the peripheral wall to be wholly continuous. It is hereby possible to manufacture the finishing part in simple manner from a piece of sheet steel, wherein the edges are bent. It is then not necessary to also weld the bent edges to each other. Such a finishing part with bent walls is preferably adhered in the tray, certainly in the case that the device is applied as alcove.

[0029] A further additional advantage is that pre-processed sheet materials can thus be used, which usually cannot be welded. An example is so-called stainless steel with anti-fingerprint. This is a stainless sheet steel which is provided with a coating, whereby no fingerprints can be left on the stainless steel. This coating is however not resistant to the heat of the usual welding.

[0030] In a highly preferred embodiment of the device

according to the invention the device is a shower drain with an outflow opening arranged in the bottom of the tray for discharging water and with at least one opening which is arranged in the bottom wall of the finishing part and which is in liquid connection with the outflow opening.

[0031] It is noted that the at least one opening in the bottom wall of the finishing part is dimensioned such that the water collected above the bottom wall of the finishing part can be discharged sufficiently quickly to the outflow opening in the tray, but wherein the plastic of the tray remains at least largely concealed from view. The ratio of the surface area of the at least one opening and the surface area of the whole bottom surface will typically be at least smaller than 1:5.

[0032] A further preferred embodiment of the shower drain according to the invention comprises a grating arranged removably in the tray, wherein the finishing part is arranged between the bottom of the tray and the underside of the grating.

[0033] As noted above, the finishing part serves as finish for the tray. The finishing part will therefore usually remain behind in the tray during for instance cleaning, and only the grating will be removed. The finishing part will therefore usually be fixedly arranged on the tray, for instance by means of adhesion.

[0034] In addition, the finishing part can have a very small thickness, since the tray will provide for the desired strength. It is thus for instance possible to provide the finishing part as a deep-drawn teflon film which lies against the walls and bottom of the tray. Although the teflon film is per se flexible, a strong construction will still be obtained in combination with the tray.

[0035] It is thus for instance also possible to provide a thin chrome layer. The environmentally-unfriendly chrome-plating of plastic trays is hereby prevented. In a further preferred embodiment of the shower drain according to the invention the finishing part comprises height adjusting means for adjusting the height of the bottom wall of the finishing part relative to the bottom of the tray.

[0036] Since the finishing part need not be watertight, openings can be made therein in simple manner for providing a height adjustment such as for instance bolts. When the grating rests on the finishing part, the upper surface of the grating can thus be made flush with the upper surface of the surrounding floor.

[0037] The height adjusting means preferably extend through the bottom surface of the finishing part.

[0038] In yet another preferred embodiment of the shower drain according to the invention the finishing part is adhered, for instance glued, in the tray. Other options are to arrange the finishing part in the mould during the injection moulding process of the tray, whereby the finishing part is embedded in the plastic of the tray.

[0039] The invention further comprises a floor provided with a shower drain according to the invention, which floor comprises:

- a sub-floor with the tray of the shower drain therein;

- a watertight layer such as a sealing membrane, arranged on the sub-floor, which watertight layer is arranged sealingly on the upper edge of the upright peripheral wall of the tray;
- a finishing layer, such as a tile layer, arranged over the watertight layer.

[0040] In a preferred embodiment of the floor according to the invention the upright peripheral wall of the finishing part extends to a position close to the upper surface of the finishing layer.

[0041] The sides of the finishing layer which are adjacent to the shower drain are hereby likewise concealed from view by the finishing part.

[0042] In another embodiment of the floor according to the invention a seal, such as a silicone sealant, is arranged between the upright peripheral wall of the finishing part and the finishing layer.

[0043] Although the invention is elucidated on the basis of elongate shower drains, the invention can be applied equally well to drains of a more conventional form, such as square or round drains.

[0044] These and other features of the invention are further elucidated with reference to the accompanying figures.

Figure 1 shows a cross-sectional view of a first embodiment according to the invention.

Figure 2 shows the shower drain according to figure 1 in perspective view.

Figure 3 shows a cross-sectional view of a second embodiment according to the invention.

Figure 4 shows a cross-sectional view of a third embodiment according to the invention.

Figure 5 shows a perspective view of a fourth embodiment of the invention.

Figure 6 shows a cross-sectional view of figure 5.

[0045] Figure 1 shows a cross-sectional view of shower drain 1 according to the invention. Shower drain 1 has a plastic tray with a bottom 2 and upright peripheral wall 3 arranged along the bottom. Provided on the upper edge of peripheral wall 3 is a horizontal flange 4 for attaching a watertight layer 5. An outflow opening 6 is provided in bottom 2.

[0046] Placed in tray 2, 3, 4 is a finishing part 7 which rests on bottom 2 and can for instance be attached thereto with adhesive. Finishing part 7 is in this embodiment only a bottom surface with an opening 8 therein for passage of water to outflow opening 6. Finishing part 7 covers almost the whole bottom 2 of tray 2, 3, 4.

[0047] Shower drain 1 further has a grating with an upper surface 9 which is provided with perforations 10 and side walls 11 directed downward from upper surface 9. Upper surface 9 of grating 9, 10, 11 lies flush with the upper surface of surrounding finishing layer 12, for instance a tile layer.

[0048] Figure 2 shows shower drain 1 according to fig-

ure 1 in perspective view with exploded parts.

[0049] Figure 3 shows a cross-sectional view of a second embodiment of a shower drain 20 according to the invention. This shower drain 20 has a tray 2, 3, 4 similar to the tray of shower drain 1 according to figure 1. Tray 2, 3, 4 is here also provided with a watertight layer 5 and is surrounded by a finishing layer 12.

[0050] A finishing part 21, 22, 23 is placed in tray 2, 3, 4. The finishing part has a bottom surface 21 with upright walls 22 along the peripheral edge of bottom surface 21. Further arranged in bottom surface 21 are adjusting screws 23 whereby finishing part 21, 22, 23 can be adjusted in height relative to bottom 2.

[0051] With adjusting screws 23 it is possible to make the upper edge of upright walls 22 flush with the upper surface of surrounding floor 12.

[0052] In this embodiment a seal 24, for instance a silicone sealant, is arranged between upright walls 22 and the edges of surrounding floor 12.

[0053] Finally, a grating 25 with a U-shaped cross-section is placed within side walls 22 on bottom 21.

[0054] Figure 4 shows a cross-sectional view of a third embodiment 30 according to the invention. This embodiment largely corresponds to the embodiment according to figure 1. The same components are therefore designated with the same reference numerals.

[0055] Placed in tray 2, 3, 4 is a finishing part with a bottom 31, provided with an opening 32, upright walls 33 and horizontal flanges 34 attached thereto.

[0056] With the horizontal flanges 34 of the finishing part it is possible to clamp a watertight layer 5 with horizontal flanges 4 of tray 2, 3, 4.

[0057] A pin 35 is in addition provided on horizontal flange 34, which pin protrudes through horizontal flange 4 and can thus serve as earthing for the metal part of shower drain 30, even though this consists partially of plastic.

[0058] Figure 5 shows a fourth embodiment 40 of the device according to the invention. In this embodiment device 40 forms an alcove which can be installed in a wall.

[0059] Alcove 40 has a tray with a bottom surface 41, a peripheral wall 42 upright from bottom surface 41 and a peripheral flange 43 running parallel to bottom surface 41. In this position bottom surface 41 forms the rear wall of alcove 40.

[0060] A finishing part 44, 45, 46 is arranged on the inner side against peripheral wall 42 and bottom surface 41, which finishing part is a part bent from a sheet. Finishing part 44, 45, 46 has a bottom wall 44 which lies against bottom surface 41. Arranged from the peripheral edge of bottom wall 44 are wall parts 45, 46 which form a peripheral wall. Flanges 48, which lie against flange 43 of the tray, are further in turn provided on wall parts 45, 46.

[0061] Wall parts 45, 46 do not lie sealingly against each other but are mutually separated by interruptions 47. The size of this interruption 47 is exaggerated in figure 5, and will be substantially invisible in practice. Interruption 47 nevertheless causes wall parts 45, 46 not to con-

nect watertightly to each other. This is possible in that the tray of bottom surface 41 and peripheral wall 42 fulfils this function.

[0062] As will be apparent from this schematic figure, tray 41, 42 will be manufactured from an inexpensive plastic, while finishing part 44, 45, 46 provides for an appearance of for instance stainless steel.

Claims

1. Device comprising:

- a tray with a bottom and a peripheral wall upright along the edge of the bottom;
- a finishing part with at least a bottom wall, which bottom wall is arranged between the peripheral wall, in the tray,

characterized in that

the tray is manufactured from a plastic material, wherein the finishing part is manufactured from a material differing from the plastic material of the tray and wherein the bottom wall of the finishing part extends up to the upright peripheral wall of the tray.

2. Device as claimed in claim 1, wherein the finishing part is manufactured from a metal such as stainless steel.

3. Device as claimed in claim 1 or 2, wherein a flange extending parallel to the bottom is arranged along the upper edge of the peripheral wall for attaching to a watertight layer, such as a sealing membrane.

4. Device as claimed in any of the foregoing claims, wherein the finishing part comprises an upright peripheral wall arranged along the edge of the bottom wall.

5. Device as claimed in claim 4, wherein the upright peripheral wall of the finishing part protrudes beyond the upper edge of the peripheral wall of the tray.

6. Device as claimed in claim 4 or 5, wherein the peripheral wall of the finishing part comprises interruptions extending from the bottom wall, for instance from the corners of the bottom wall.

7. Device as claimed in any of the foregoing claims, wherein the finishing part is adhered, for instance glued, in the tray.

8. Device as claimed in any of the foregoing claims, wherein the device is a shower drain with an outflow opening arranged in the bottom of the tray for discharging water and with at least one opening which is arranged in the bottom wall of the finishing part

and which is in liquid connection with the outflow opening.

9. Shower drain as claimed in claim 8, further comprising a grating arranged removably in the tray, wherein the finishing part is arranged between the bottom of the tray and the underside of the grating. 5

10. Shower drain as claimed in claim 8 or 9, wherein the finishing part comprises height adjusting means for adjusting the height of the bottom wall of the finishing part relative to the bottom of the tray. 10

11. Shower drain as claimed in claim 10, wherein the height adjusting means extend through the bottom wall of the finishing part. 15

12. Floor provided with a shower drain as claimed in any of the foregoing claims 8-11, which floor comprises: 20
 - a sub-floor with the tray of the shower drain therein;
 - a watertight layer such as a sealing membrane, arranged on the sub-floor, which watertight layer is arranged sealingly on the upper edge of the upright peripheral wall of the tray; 25
 - a finishing layer, such as a tile layer, arranged over the watertight layer.

13. Floor as claimed in claim 12 with a shower drain as claimed in any of the claims 8-11 and claim 4 or 5, wherein the upright peripheral wall of the finishing part extends to a position close to the upper surface of the finishing layer. 30
35

14. Floor as claimed in claim 13, wherein a seal, such as a silicone sealant, is arranged between the upright peripheral wall of the finishing part and the finishing layer. 40

45

50

55

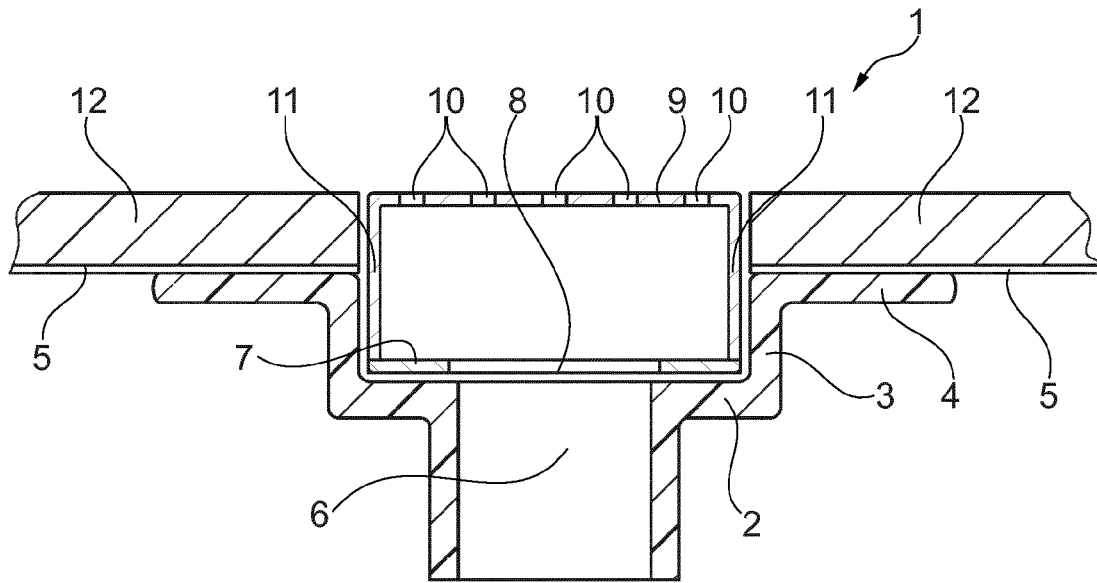


Fig. 1

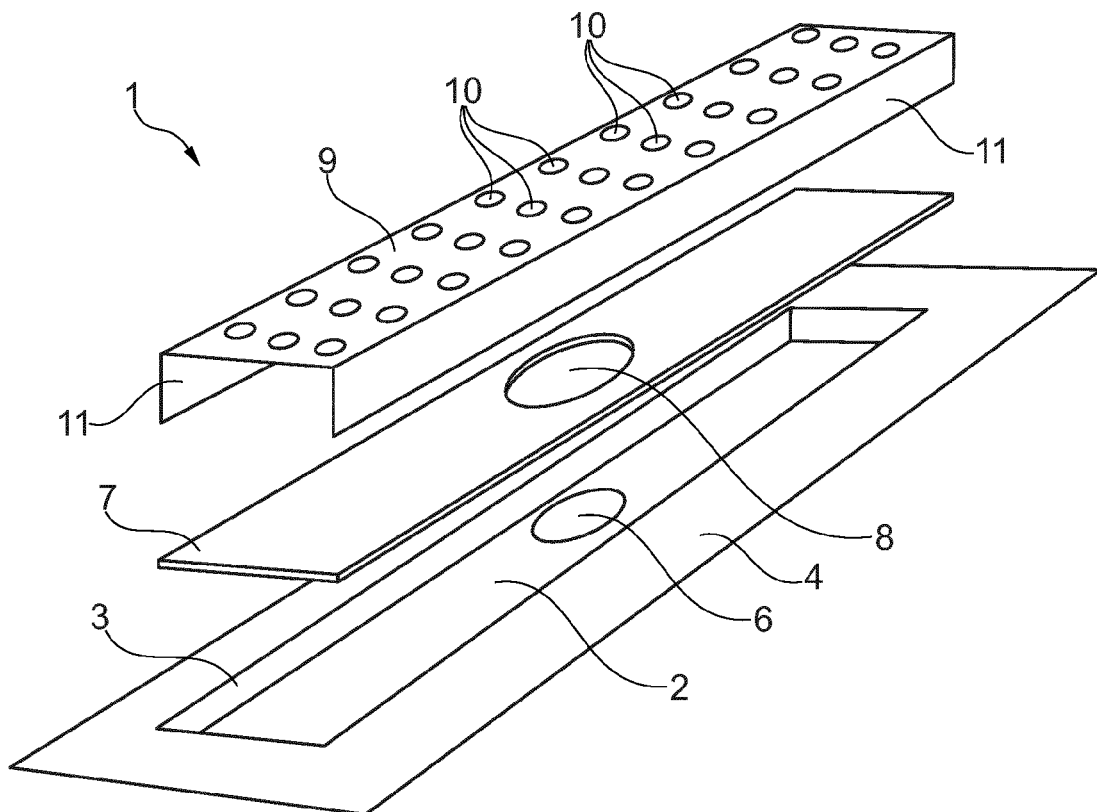


Fig. 2

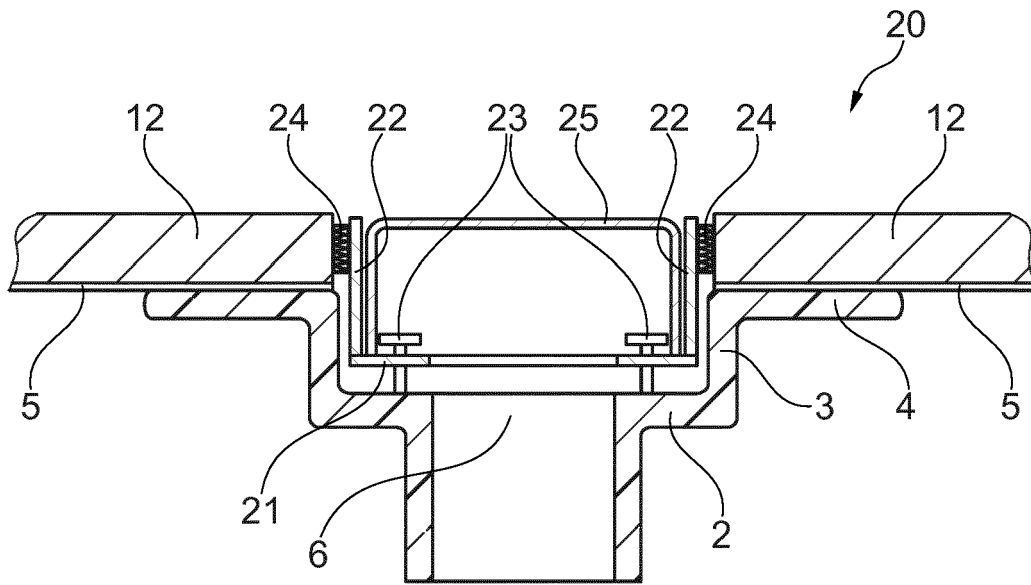


Fig. 3

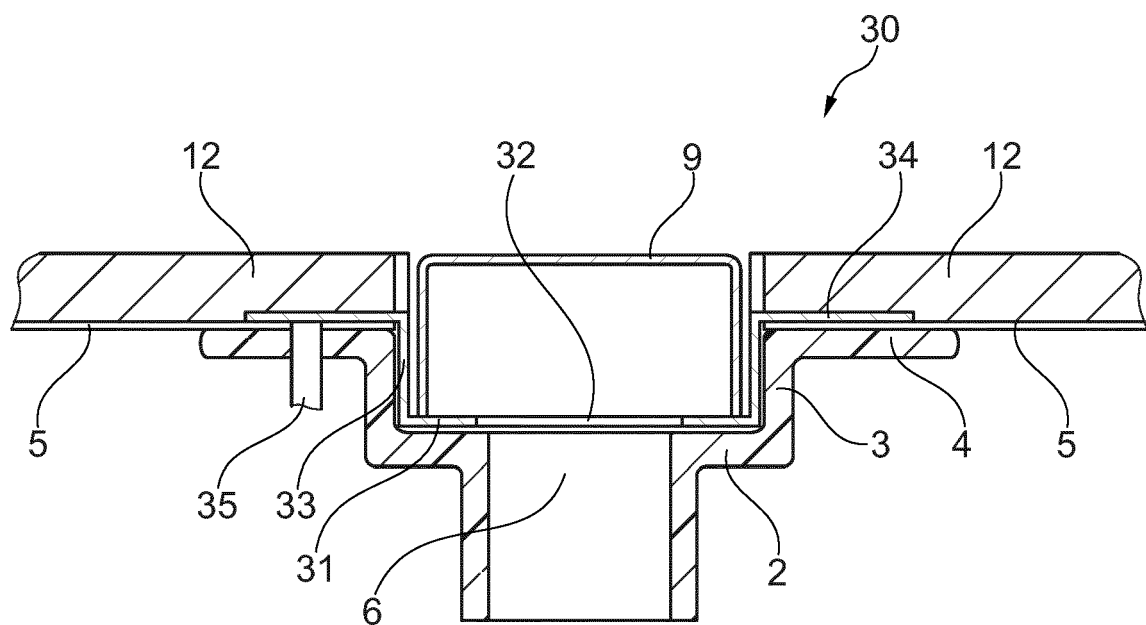


Fig. 4

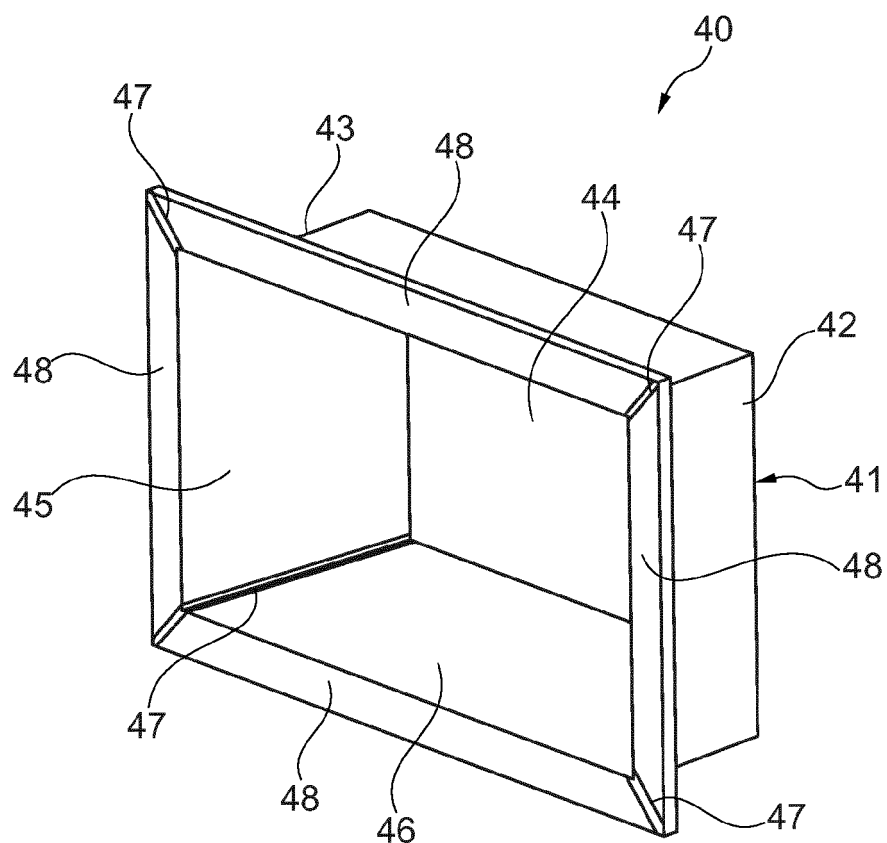


Fig. 5

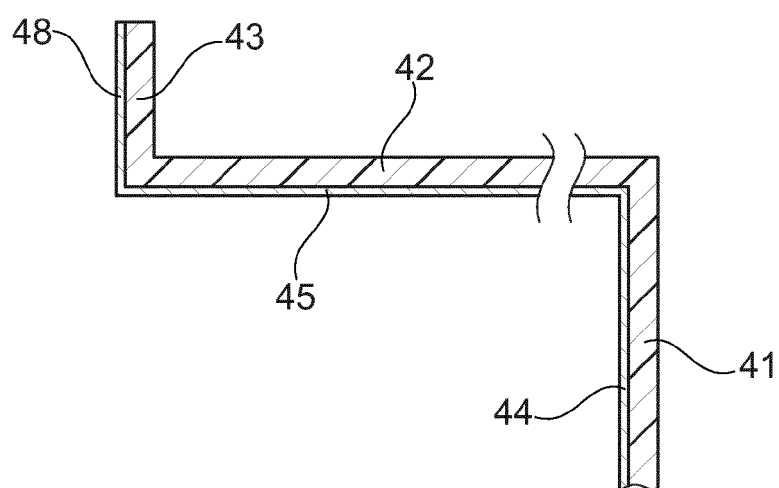


Fig. 6



EUROPEAN SEARCH REPORT

Application Number
EP 17 16 7089

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 40 20 170 A1 (ENTSORGUNGSTECHNIK BERLIN GMBH [DE]) 14 November 1991 (1991-11-14) * column 1, line 48 - line 68; claims 1,2; figures *	1-7	INV. E03F5/04
X	DE 20 2007 006050 U1 (DALLMER GMBH & CO KG [DE]) 23 August 2007 (2007-08-23) * paragraph [0001] - paragraph [0006] * * paragraph [0026] - paragraph [0033]; figures 1-5 *	1-6,8, 10,12-14	ADD. E03D1/012
X,D	EP 1 630 309 A1 (BLUECHER METAL APS [DK]) 1 March 2006 (2006-03-01) * paragraph [0039] - paragraph [0056]; figures *	1-14	
A	WO 2009/091245 A1 (EASY SANITAIRY SOLUTIONS BV [NL]; KEIZERS JURGEN HENDRIK PETER J [NL]) 23 July 2009 (2009-07-23) * page 3, line 27 - page 5, line 33; figures *	1,8, 10-12	
A	EP 2 472 015 A1 (EASY SANITAIRY SOLUTIONS BV [NL]) 4 July 2012 (2012-07-04) * paragraph [0029] - paragraph [0059]; figures 1,6,9,11,13 *	1,8, 12-14	E03F E03D B65D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 July 2017	Examiner Van Bost, Sonia
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 16 7089

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-07-2017

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 4020170 A1	14-11-1991	DD 294226 A5 DE 4020170 A1	26-09-1991 14-11-1991
DE 202007006050 U1	23-08-2007	NONE	
EP 1630309 A1	01-03-2006	DK 1630309 T3 EP 1630309 A1 NO 333578 B1	26-08-2013 01-03-2006 15-07-2013
WO 2009091245 A1	23-07-2009	AU 2009205825 A1 CA 2711911 A1 DE 202009019062 U1 DE 202009019063 U1 DK 2140072 T3 EP 2140072 A1 ES 2392378 T3 NL 1034911 C2 PT 2140072 E US 2011023978 A1 WO 2009091245 A1	23-07-2009 23-07-2009 23-02-2016 23-02-2016 01-10-2012 06-01-2010 10-12-2012 15-07-2009 22-10-2012 03-02-2011 23-07-2009
EP 2472015 A1	04-07-2012	EP 2472015 A1 NL 2005949 C	04-07-2012 05-07-2012

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1630309 A [0002]
- WO 2011162598 A [0007]