



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.08.2013 Bulletin 2013/34

(51) Int Cl.:
E03F 5/04 (2006.01)

(21) Application number: **13155156.6**

(22) Date of filing: **14.02.2013**

(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

(71) Applicant: **Easy Sanitary Solutions B.V.**
7581 EZ Losser (NL)

(72) Inventor: **Keizers, Jurgen Hendrik Peter Jozeph**
7582 GH Losser (NL)

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

(30) Priority: **17.02.2012 NL 2008312**

(54) **Sealing for a drain, such as a shower channel**

(57) The invention relates to a seal for a drain, such as a shower channel, the seal comprising:
- a continuous watertight layer;
- an adhesive zone arranged on the watertight layer. The seal preferably further comprises strips which are ar-

ranged along the sides of the zone and which are arranged on the watertight layer with a first part outside the zone and overlap the zone with a second free part, wherein at least the second part of the strips is provided with an adhesive layer.

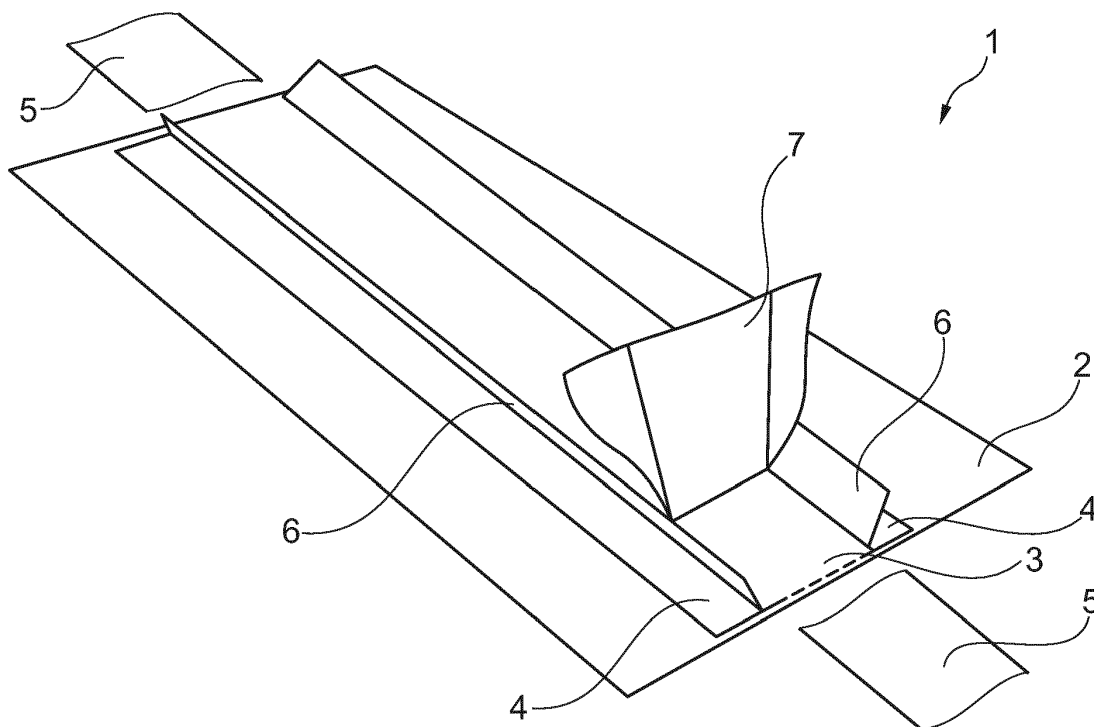


Fig. 1

Description

[0001] The invention relates to a seal for a drain, such as a shower channel.

[0002] When placing a drain, such as a shower channel or a drain hole, it is usual to arrange around the drain a watertight layer connecting to the drain. A finishing layer, which in many cases is a tile layer, is then arranged on this watertight layer.

[0003] Should the finishing layer begin to leak, moisture seeping through would be collected by the watertight layer and optionally guided to the drain. The watertight layer thus provides a crack bridging and seal.

[0004] It is important here that the attachment of the watertight layer to the drain takes place in precise and reliable manner in order to prevent leakage.

[0005] It is known to arrange a drain with flanges in a floor and to then adhere a watertight layer to the flanges. A glue layer is arranged here on the flanges, after which the edges of a watertight layer are pressed into the glue layer. The glue then has to cure, and the watertight layer may not be loaded during this time. This cannot always be guaranteed during construction, whereby there is a risk that the watertight layer is not optimally attached to the flanges of the drain via the glue layer.

[0006] There is also the risk of the surfaces for glueing becoming soiled on site. In addition, the ambient temperature can have an adverse effect on the glue. At a low temperature the glue will for instance not cure in good time, or the glue will even degenerate.

[0007] It is further known to provide a drain with a watertight layer in the factory. A watertight layer is attached here to the drain in a controlled environment. A reliable and watertight attachment of the watertight layer to the drain is obtained using this method.

[0008] It is on the other hand usual in some countries not to use a watertight layer. In such a case the drain is incorporated in the floor, and a finishing layer such as a tile layer is arranged directly without interposing of a watertight layer.

[0009] Professionals often also prefer to use a drain without a watertight layer. A reason for this is that the watertight layer often becomes creased in the packaging, whereby the layer cannot be arranged in properly flat manner. In addition, the flange of a drain can be used to skim off the surrounding floor. An already arranged watertight layer would impede this skimming.

[0010] A watertight layer is also perceived as an obstacle when tiles are knocked into the still soft sub-floor.

[0011] In the case a watertight layer is arranged on the drain in the factory, a variant of the relevant drain without watertight layer will therefore also have to be held in stock. Stock will hereby increase considerably.

[0012] It is now an object of the invention to reduce or even obviate the above stated drawbacks.

[0013] This object is achieved with a seal according to the invention, comprising:

- a continuous watertight layer;
- an adhesive zone arranged on the watertight layer.

[0014] The seal according to the invention preferably further comprises strips which are arranged along the sides of the zone and which are arranged on the watertight layer with a first part outside the zone and overlap the zone with a second free part. At least the second part of the strips is preferably further provided with an adhesive layer. The adhesive layer can also be arranged on the drain.

[0015] With the seal according to the invention a universal seal is provided for a large number of variants of a drain. The desired drain is arranged with the flanges on the adhesive zone, after which the strips are arranged with the second part overlapping the adhesive zone and the flanges of the drain. The flanges are thus enclosed on both sides by the watertight layer and the strips. The watertight layer is hereby connected over a larger surface area to the drain, this further reducing the chance of possible leakage in the long term.

[0016] Because the flanges of a drain are enclosed on both sides, the dimensions of the drain can vary while a good connection between the drain and the watertight layer can still be obtained. The parts of the adhesive zone which are not covered by the drain will be covered by the overlapping strips. Because the second part of a strip is also provided with an adhesive layer, a firm connection between the adhesive layer zone and a strip will be obtained on this uncovered part.

[0017] Another advantage is that, after the drain has been arranged on the adhesive zone, the continuous watertight layer substantially fully closes the inflow opening of the drain. After being arranged in the floor the interior of the drain can hereby not be soiled by building waste or be damaged. Only when the finishing layer is arranged over the watertight layer is the part of the layer covering the inflow opening of the drain cut away.

[0018] If the drain is provided with upright flanges it is necessary for the opening to be arranged in the watertight layer before it is placed on the drain. According to the invention a cover can be arranged over the upright flanges which prevents the drain being soiled during work operations. It is even possible to arrange the finishing layer, such as a tile floor, while the cover is placed.

[0019] In an embodiment of the seal according to the invention protective foil is arranged on the adhesive layer zone and the second parts of the strips. This protective foil prevents the adhesive layer zone and the adhesive layer on the strips being soiled and prevents parts of the seal adhering to each other before the drain has been arranged.

[0020] In a preferred embodiment of the seal according to the invention a protective foil part extends at least over the adhesive layer zone and a second part of a strip.

[0021] In this embodiment both the adhesive layer zone and the adhesive layer on the adjacent strips can be left clear by removing one protective foil part. The seal

can thus be quickly made ready for the purpose of arranging the drain.

[0022] The protective foil is preferably arranged in three separate parts, whereby the protective foil can be removed in parts during arranging of the seal on a drain.

[0023] The adhesive layer can for instance be a glue layer or a layer of MS polymer. Although it is still necessary in the case of the MS polymer to wait for curing, the invention and particularly the protective foil achieve that a clean adhesive layer zone is maintained.

[0024] In another preferred embodiment of the seal according to the invention a second adhesive layer zone is arranged on the watertight layer on the opposite side of the adhesive layer zone.

[0025] In yet another embodiment of the seal according to the invention a rigid plate with a central opening is provided on the second adhesive layer zone.

[0026] Using this rigid plate the adhesive layer can be arranged easily on a flange of a drain tray. In addition, the central opening in the rigid plate can easily be used as template for the purpose of cutting an opening out of the watertight layer.

[0027] The rigid plate can for instance be made of thin spring steel. It hereby has little height, while a rigid plate is nevertheless obtained.

[0028] When the periphery of the plate is slightly larger than the periphery of the drain tray on which the seal is arranged, the tear strength of the watertight layer is also improved. Because the flange of the lower tray and the peripheral edge of the rigid plate are not at the same height, more force will be required to tear through the watertight layer.

[0029] In addition, the rigid plate ensures that the membrane is clamped fixedly between the flange of the collecting tray and the rigid plate, or at least that tear forces are distributed more evenly.

[0030] The rigid plate can consist of one part, optionally with a central opening, or be assembled from separate strips arranged along a side of the lower tray. The separate strips can be provided here with a rib running over the length, whereby a strip acquires a better stiffness.

[0031] In another preferred embodiment of the seal according to the invention, a layer of fibres is arranged on the watertight layer outside the adhesive layer zone.

[0032] This layer of fibres provides an adhesive layer which adheres well to, among other materials, mortar and tile adhesive. In addition, the strips themselves can also be provided on a side with a layer of fibres. Following mounting of a drain in the seal, both the underside and the upper side of the seal will thus be wholly covered with the layer of fibres.

[0033] Arranging the layer of fibres outside the adhesive layer zone guarantees a watertight adhesion of the adhesive layer to for instance a flange of a drain. If a layer of fibres were to be arranged between the watertight layer and the adhesive layer, there would then be a chance of leakage through capillary action.

[0034] Another rough layer with a certain texture can

also be provided instead of a layer of fibres in order to improve the adhesion with glue or mortar.

[0035] These and other features of the invention are further elucidated with reference to the accompanying drawings.

[0036] Figure 1 shows an embodiment of a seal according to the invention.

[0037] Figures 2A-2C show the arranging of a drain on a seal according to figure 1.

[0038] Figures 3A and 3B show an alternative method of arranging a seal according to the invention.

[0039] Figure 4 is a cross-sectional view of a third embodiment according to the invention.

[0040] Figure 5 is a cross-sectional view of a fourth embodiment according to the invention.

[0041] Figure 1 shows an embodiment 1 of a seal according to the invention. This seal 1 has a continuous watertight layer 2 with an adhesive layer zone 3. Strips 4 are arranged around adhesive layer zone 3. These strips 4 have a free part 6 which is likewise provided with an adhesive layer. Provided separately hereof are strips 5 for the end surfaces. It is hereby possible to supply watertight layer 2 with adhesive layer zone 3 and strips 4 on a roll so that the seal can be cut to a desired length.

Depending on the type of drain used, a matching opening can optionally already be cut out using an additionally supplied cutting template.

[0042] In order to prevent premature adhesion a protective foil 7 is arranged over adhesive layer zone 3 and the free parts 6.

[0043] Figures 2A-2C show the arranging of a drain 8, in particular a shower channel, with flanges 9.

[0044] Following removal of protective foil 7 the adhesive layer zone 3 is clear and the adhesive layer on free parts 6 of strips 4 is clear. Drain 8 is then placed with flanges 9 on adhesive layer zone 3, and free parts 6 are adhered over flanges 9 (see figure 2B).

[0045] As is apparent from figure 2B, a part of the free parts 6 will adhere to adhesive layer zone 3, while the remaining part lies on flanges 9. The width of drain 8 can thus vary while a good connection of the seal to drain 8 is still obtained.

[0046] Finally, as shown in figure 2C, a part 10 is cut out of watertight layer 2 so that inflow opening 11 of drain 8 is left clear. This cutting out will usually take place only at the last possible moment in order to prevent soiling and damage of the drain.

[0047] The cutting out of part 10 can be facilitated by a cutting template (not shown). This cutting template can in terms of dimensions be specific to the chosen drain. In addition, centering points can be arranged in the cutting template which are placed through the watertight layer and support against the side walls of the drain. Part 10 can then be cut out easily and without shifting.

[0048] Figures 3A and 3B show an alternative method of arranging a seal 20 according to the invention on a drain 21.

[0049] A flexible layer 23 is first arranged around flang-

es 22 of drain 21. Flexible layer 23 is shown here in two parts, although it can also consist of a part folded double. Flexible layer 23 provides for a good adhesive layer on flanges 22.

[0050] A second flexible layer 24 is then arranged on drain 21 with flexible layers 22. This second flexible layer 24 is preferably provided with an adhesive layer which is adapted to the material of flexible layers 22 in order to guarantee an optimal adhesion.

[0051] After the second flexible layer 24 has been arranged on flexible layers 22, a part 25 can be cut out at a desired moment to provide access to drain 21.

[0052] The advantage of this embodiment is that drain 21 can be arranged in the floor and that flexible layer 23 can be arranged at a later moment. Flange 22 can hereby be used for the purpose of skimming off the floor, after which flexible layer 24 can be arranged.

[0053] Figure 4 shows a third embodiment of a seal 30 according to the invention. This seal 30 can be arranged in parts by the user him/herself.

[0054] The lower tray or drain 31 is provided with horizontal flanges 32 on which a strip of flexible material 33 is arranged. An adhesive layer 34 is provided on the protruding parts of the strip of flexible material 33.

[0055] If it is found after a poured floor has been arranged that drain 31 lies too deeply in the floor, a filler plate 35 can be arranged. This filler plate 35 has a central opening 36 and an adhesive layer 37 all around for adhesion to the flexible strips 33.

[0056] A watertight layer 38 having an adhesive layer 39 in the centre is then arranged thereon. Layers of fibres 40, 41 are arranged around adhesive layer 39 and on the other side of watertight layer 38 for a good adhesion to for instance a tile adhesive.

[0057] Figure 5 shows a fourth embodiment 50 of a seal according to the invention. Seal 50 is arranged on a drain tray 51 with horizontal flanges 52.

[0058] Seal 50 has a watertight layer 53 provided with a first adhesive layer zone 54. Seal 50 is adhered to flanges 52 with this first adhesive layer zone 54.

[0059] A second adhesive layer zone 55 is provided on the opposite side. A rigid plate 56 with a central opening 57 is arranged hereon. This rigid plate 56 ensures that watertight layer 53 can be easily arranged on drain tray 51. In addition, central opening 57 can be used as cutting template for the purpose of cutting out watertight layer 53 at the position of drain tray 51.

[0060] A membrane layer 58 is arranged on either side of the remaining part of watertight layer 53 for a good adhesion to for instance tile adhesive.

[0061] A foam layer can optionally be provided between rigid plate 56 and watertight layer 53 for the purpose of reducing contact noise.

comprising:

- a continuous watertight layer;
- an adhesive zone arranged on the watertight layer.

2. Seal as claimed in claim 1, further comprising:

- strips which are arranged along the sides of the zone and which are arranged on the watertight layer with a first part outside the zone and overlap the zone with a second free part, wherein at least the second part of the strips is provided with an adhesive layer.

3. Seal as claimed in claim 2, wherein protective foil is arranged on the adhesive layer zone and the second parts of the strips.

4. Seal as claimed in claim 3, wherein a protective foil part extends at least over the adhesive layer zone and a second part of a strip.

5. Seal as claimed in claim 1, wherein a second adhesive layer zone is arranged on the watertight layer on the opposite side of the adhesive layer zone.

6. Seal as claimed in claim 5, wherein a rigid plate with a central opening is provided on the second adhesive layer zone.

7. Seal as claimed in any of the foregoing claims, wherein a layer of fibres is arranged on the watertight layer outside the adhesive layer zone.

Claims

1. Seal for a drain, such as a shower channel, the seal

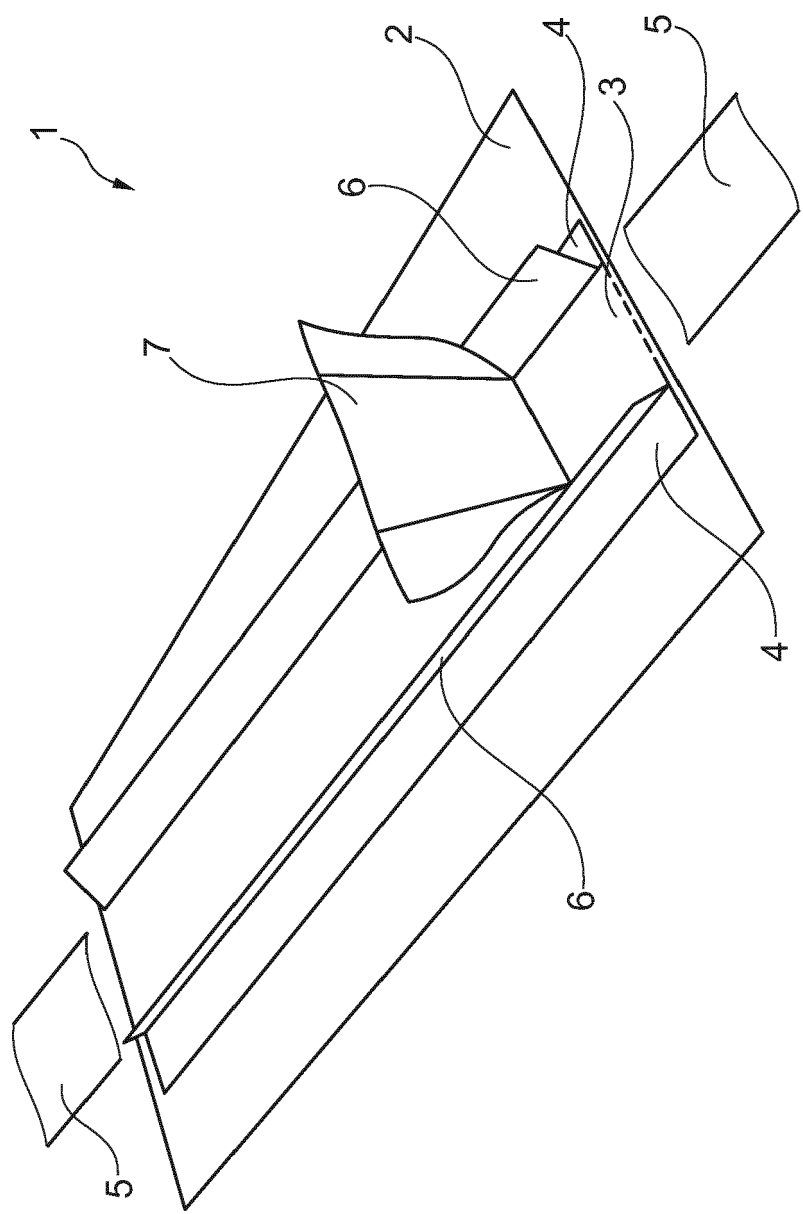


Fig. 1

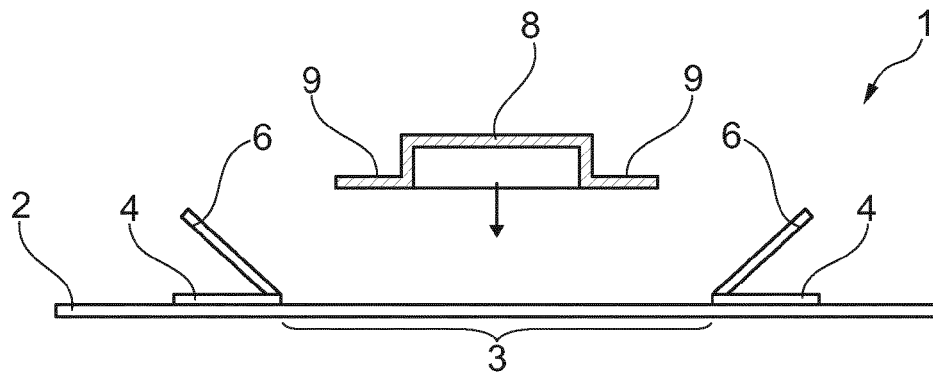


Fig. 2A

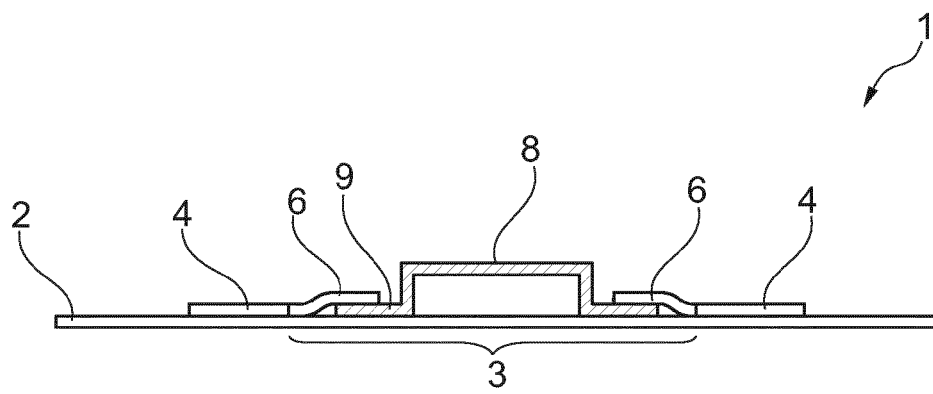


Fig. 2B

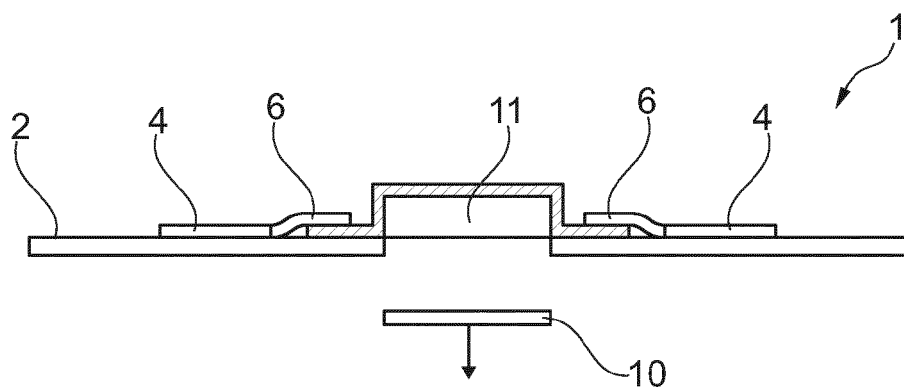


Fig. 2C

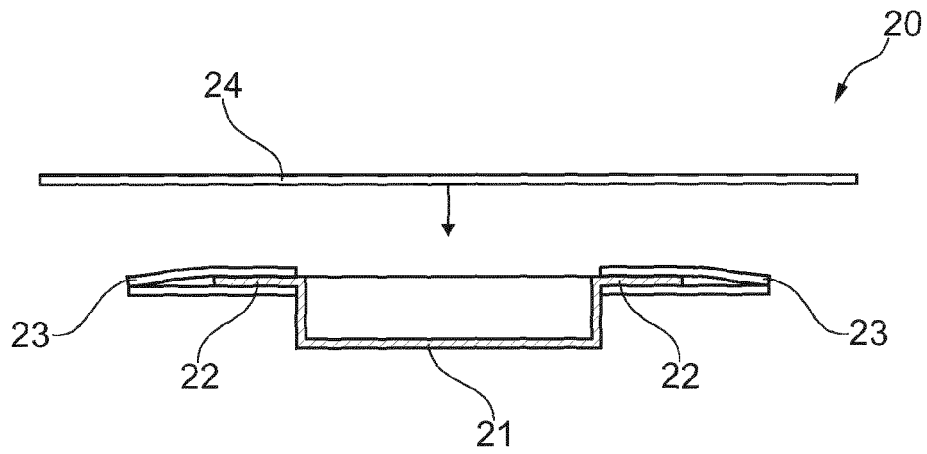


Fig. 3A

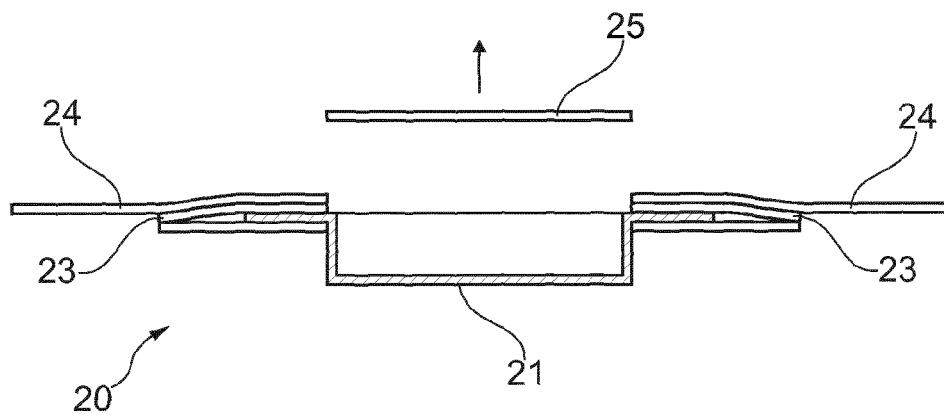


Fig. 3B

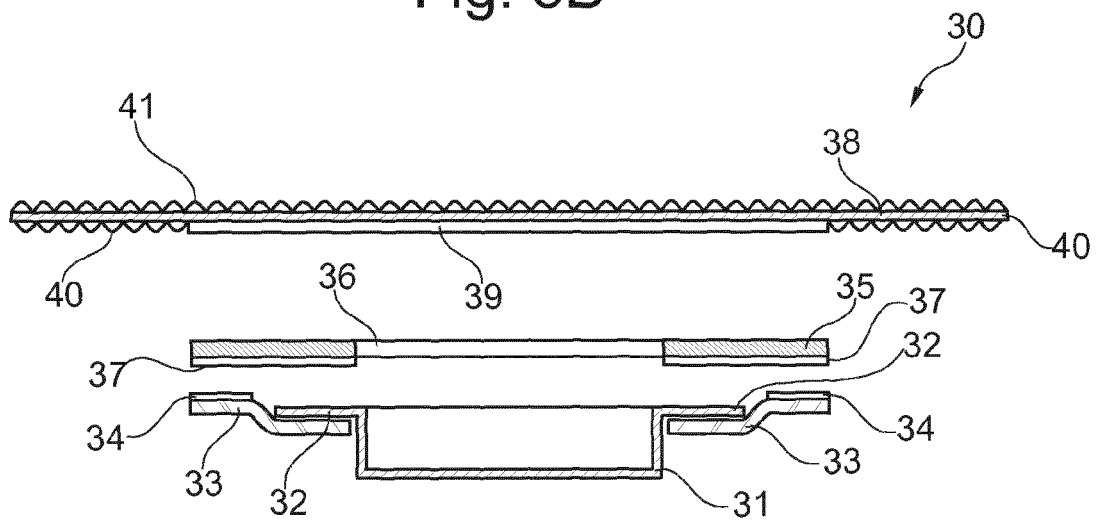


Fig. 4

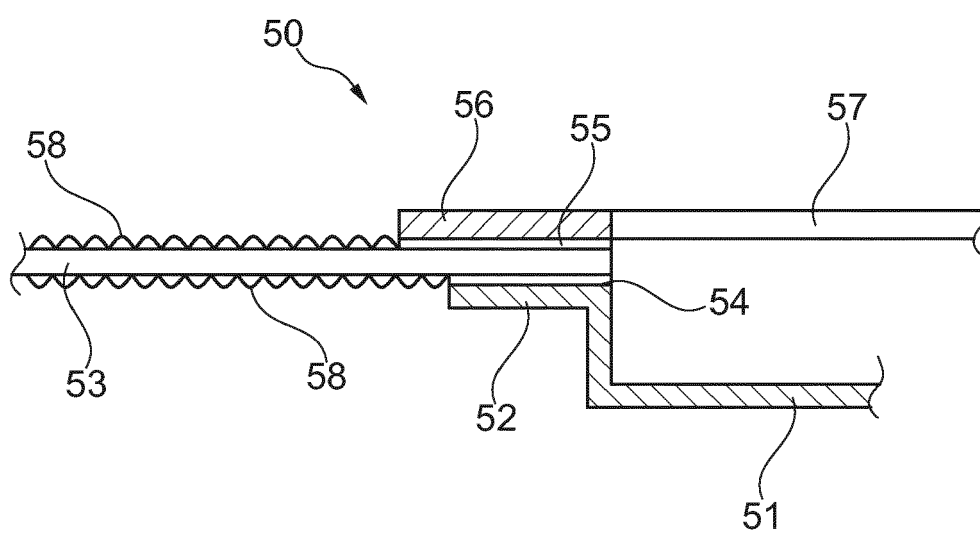


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 13 15 5156

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	EP 2 248 956 A1 (EASY SANITAIRY SOLUTIONS BV [NL]) 10 November 2010 (2010-11-10)	1-6	INV. E03F5/04
A	* paragraphs [0011], [0012], [0013], [0030], [0032], [0038], [0057] * * figures 1,4,5,12 *	7	
X	DE 10 2010 016816 A1 (HYDROPHON KUNSTSTOFFTECHNIK GM [DE]) 2 December 2010 (2010-12-02)	1,5-7	
A	* paragraph [0031] * * paragraphs [0036], [0038], [0039], [0041] * * pages 3,4,5,7 *	3,4	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E03F
Place of search		Date of completion of the search	Examiner
The Hague		21 June 2013	Urbahn, Stephanie
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			

3
EPO FORM 1503 03.82 (P04C01)

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

EP 13 15 5156

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.

21-06-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2248956 A1	10-11-2010	NONE	
DE 102010016816 A1	02-12-2010	DE 102010016816 A1	02-12-2010
		DE 202009006564 U1	27-02-2012

EPO FORM P0459

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