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

Abdichtung für einen Abfluss, z.B. eine Duschablaufrinne

Dispositif d'étanchéité pour une bouche d'écoulement, notamment pour douches

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EP-A1- 2 248 956 **DE-A1-102010 016 816**

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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] Documents EP 2 248 956 A1 and DE 10 2010 016 816 A1 disclose a seal according to the preamble of claim 1 and a method for arranging a seal according to the preamble of claim 6.

[0013] It is now an object of the invention to reduce or even obviate the above stated drawbacks.

[0014] This object is achieved with a seal according to the invention, comprising:

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

[0015] The seal according to the invention also 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, fixed to the watertight layer, and overlap the zone with a second free part. At least the second part of the strips is provided with an adhesive layer. The adhesive layer can also be arranged on the drain.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] In 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.

[0021] In 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. 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.

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

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

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

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

Figure 5 is a cross-sectional view of a further example of a drain seal.

[0036] 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.

[0037] In order to prevent premature adhesion a protective foil 7 is arranged over adhesive layer zone 3 and the free parts 6.

[0038] Figures 2A-2C show the arranging of a drain 8, in particular a shower channel, with flanges 9.

[0039] 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).

[0040] 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.

[0041] 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.

[0042] 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.

[0043] Figures 3A and 3B show an alternative method of arranging a seal 20 according to the invention on a drain 21.

[0044] A flexible layer 23 is first arranged around flanges 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.

[0045] A second flexible layer 24 is then arranged on drain 21 with flexible layers 22. This second flexible layer 24 is provided with an adhesive layer which is adapted to the material of flexible layers 22 in order to guarantee an optimal adhesion.

[0046] 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.

[0047] 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.

[0048] 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.

[0049] 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.

[0050] 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.

[0051] 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.

[0052] Figure 5 shows an additional example 50 of a seal not forming part of this invention. Seal 50 is arranged on a drain tray 51 with horizontal flanges 52.

[0053] 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.

[0054] 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.

[0055] 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.

[0056] A foam layer can optionally be provided between rigid plate 56 and watertight layer 53 for the purpose of reducing contact noise.

Claims

1. Seal (1) for a drain (8), such as a shower channel, the seal (1) comprising:

   - a continuous watertight layer (2);
   - an adhesive zone (3) arranged on the watertight layer (2); and
   - strips (4, 5) which are arranged along the sides of the zone (3) and which are arranged on the watertight layer (2) with a first part outside the zone, fixed to the watertight layer, and overlap the zone with a second free part (6), wherein at least the second part (6) of the strips (4, 5) is provided with an adhesive layer, wherein protective foil (7) is arranged on the adhesive layer zone (3), **characterized in that** protective foil (7) is arranged also on the second parts (6) of the strips (4, 5).

2. Seal (1) as claimed in claim 1, wherein a protective foil part (7) extends at least over the adhesive layer zone (3) and a second part (6) of a strip (4, 5).

3. Seal (1) as claimed in claim 1, wherein a second adhesive layer zone is arranged on the watertight layer (2) on the opposite side of the adhesive layer zone (3).

4. Seal (1) as claimed in claim 3, wherein a rigid plate with a central opening is provided on the second adhesive layer zone.

5. Seal (1) as claimed in any of the foregoing claims, wherein a layer of fibres is arranged on the watertight layer outside the adhesive layer zone.

6. Method for arranging a seal (1) to a drain (8), the method comprising the steps of:

   - providing a seal (1) for a drain (8) according to any of the previous claims;
   - providing a drain (8) with flanges (9);
   - arranging the drain (8) with the flanges (9) on the adhesive zone (3) of the seal (1); and
   - arranging the strips (4, 5) with the second part (6) overlapping the adhesive zone (3) and the flanges (9) of the drain (8) after arranging the drain (8) on the adhesive zone (3), **characterized by**
   - removing the protective foil (7) prior to arranging the drain (8) with the flanges (9) on the adhesive zone of the seal (1).

Patentansprüche

1. Dichtung (1) für einen Abfluss (8), wie einen Dusch-

kanal, wobei die Dichtung (1) Folgendes umfasst:

- eine kontinuierliche wasserdichte Schicht (2);
- eine Klebezone (3), die auf der wasserdichten Schicht (2) angeordnet ist; und
- Streifen (4, 5), die entlang den Seiten der Zone (3) angeordnet sind und die auf der wasserdichten Schicht (2) mit einem ersten Teil außerhalb der Zone angeordnet sind, der an der wasserdichten Schicht fixiert ist, und mit einem zweiten, freien Teil (6) die Zone überlappen, wobei zumindest der zweite Teil (6) der Streifen (4, 5) mit einer Klebeschicht versehen ist, wobei

Schutzfolie (7) auf der Klebeschichtzone (3) angeordnet ist, **dadurch gekennzeichnet, dass** auch auf den zweiten Teilen (6) der Streifen (4, 5) Schutzfolie (7) angeordnet ist.

2. Dichtung (1) nach Anspruch 1, wobei ein Schutzfolienteil (7) sich zumindest über der Klebeschichtzone (3) und einen zweiten Teil (6) eines Streifens (4, 5) erstreckt.

3. Dichtung (1) nach Anspruch 1, wobei auf der wasserdichten Schicht (2) auf der Seite gegenüber der Klebeschichtzone (3) eine zweite Klebeschichtzone angeordnet ist.

4. Dichtung (1) nach Anspruch 3, wobei eine starre Platte mit einer zentralen Öffnung auf der zweiten Klebeschichtzone vorgesehen ist.

5. Dichtung (1) nach einem der vorstehenden Ansprüche, wobei eine Faserschicht auf der wasserdichten Schicht außerhalb der Klebeschichtzone angeordnet ist.

6. Verfahren zum Anordnen einer Dichtung (1) für einen Abfluss (8), wobei das Verfahren die folgenden Schritte umfasst:

- Bereitstellen einer Dichtung (1) für einen Abfluss (8) nach einem der vorstehenden Ansprüche;
- Versehen eines Abflusses (8) mit Flanschen (9);
- Anordnen des Abflusses (8) mit den Flanschen (9) auf der Klebezone (3) der Dichtung (1); und
- Anordnen der Streifen (4, 5), sodass der zweite Teil (6) die Klebezone (3) und die Flansche (9) des Abflusses (8) überlappt, nach dem Anordnen des Abflusses (8) auf der Klebezone (3), **gekennzeichnet durch:**
- Entfernen der Schutzfolie (7) vor dem Anordnen des Abflusses (8) mit den Flanschen (9) auf der Klebezone der Dichtung (1).

Revendications

1. Dispositif d'étanchéité (1) pour une bouche d'écoulement (8), telle qu'un caniveau de douche, le dispositif d'étanchéité (1) comprenant :

- une couche continue étanche à l'eau (2) ;
- une zone adhésive (3) agencée sur la couche étanche à l'eau (2) ; et
- des bandes (4, 5) qui sont agencées le long des côtés de la zone (3) et qui sont agencées sur la couche étanche à l'eau (2) avec une première partie à l'extérieur de la zone, fixée à la couche étanche à l'eau, et qui chevauchent la zone avec une seconde partie libre (6), dans lequel au moins la seconde partie (6) des bandes (4, 5) est dotée d'une couche adhésive, dans lequel

un film de protection (7) est agencé sur la zone de couche adhésive (3), **caractérisé en ce que** le film de protection (7) est également agencé sur les secondes parties (6) des bandes (4, 5).

2. Dispositif d'étanchéité (1) selon la revendication 1, dans lequel une partie du film de protection (7) s'étend au moins sur la zone de couche adhésive (3) et une seconde partie (6) d'une bande (4, 5).

3. Dispositif d'étanchéité (1) selon la revendication 1, dans lequel une seconde zone de couche adhésive est agencée sur la couche étanche à l'eau (2) du côté opposé de la zone de couche adhésive (3).

4. Dispositif d'étanchéité (1) selon la revendication 3, dans lequel une plaque rigide présentant une ouverture centrale est disposée sur la seconde zone de couche adhésive.

5. Dispositif d'étanchéité (1) selon l'une quelconque des revendications précédentes, dans lequel une couche de fibres est agencée sur la couche étanche à l'eau à l'extérieur de la zone de couche adhésive.

6. Procédé d'agencement d'un dispositif d'étanchéité (1) sur une bouche d'écoulement (8), le procédé comprenant les étapes de :

- fourniture d'un dispositif d'étanchéité (1) pour une bouche d'écoulement (8) selon l'une quelconque des revendications précédentes ;
- fourniture d'une bouche d'écoulement (8) présentant des bords (9) ;
- agencement de la bouche d'écoulement (8) avec les bords (9) sur la zone adhésive (3) du dispositif d'étanchéité (1) ; et
- agencement des bandes (4, 5) avec la seconde partie (6) chevauchant la zone adhésive (3) et

les bords (9) de la bouche d'écoulement (8) après agencement de la bouche d'écoulement (8) sur la zone adhésive (3), **caractérisé par**

- le retrait du film de protection (7) avant l'agencement de la bouche d'écoulement (8) avec les bords (9) sur la zone adhésive du dispositif d'étanchéité (1).

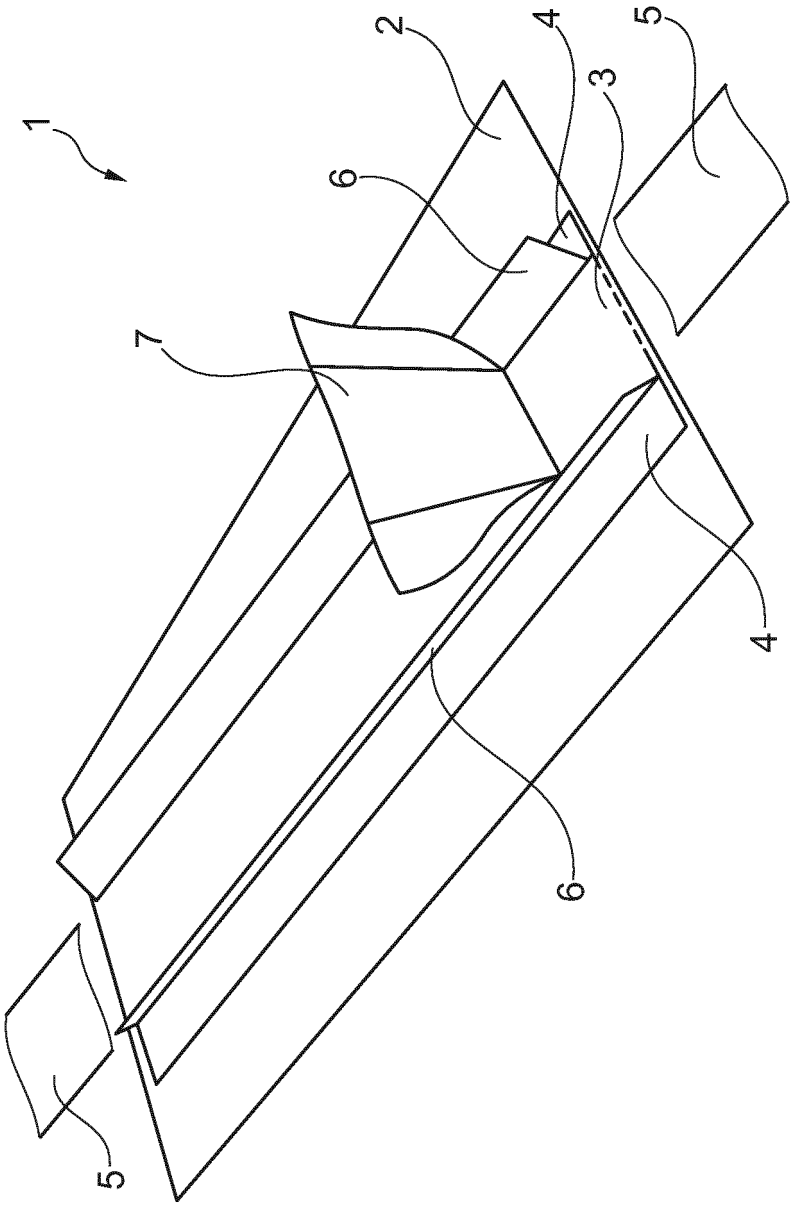


Fig. 1

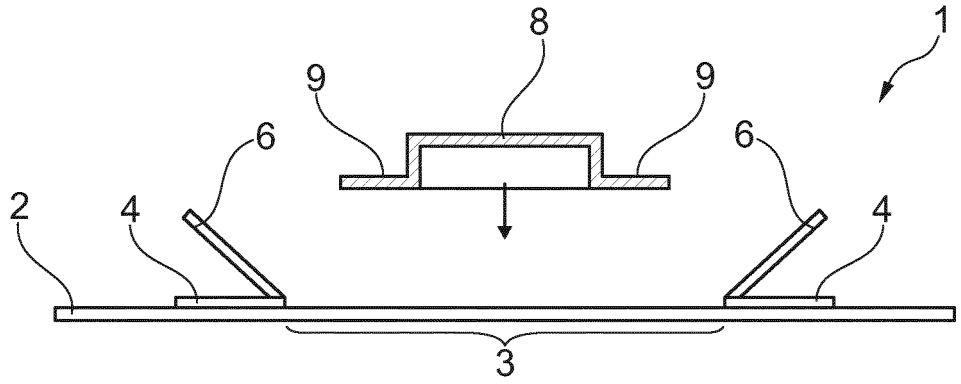


Fig. 2A

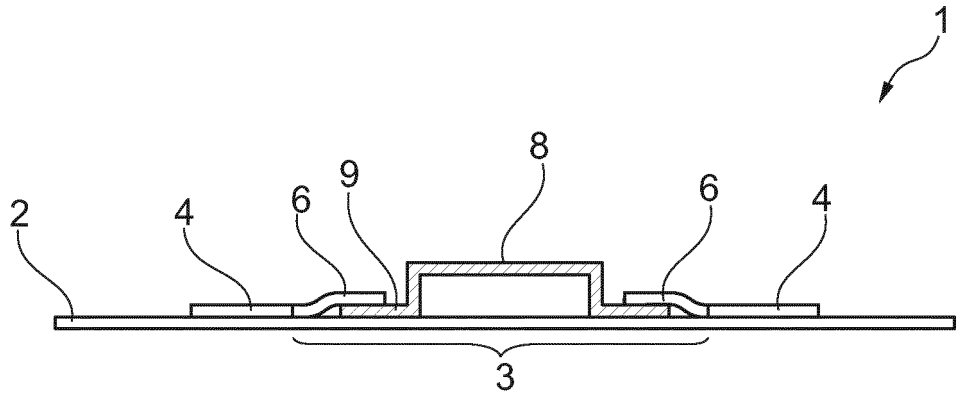


Fig. 2B

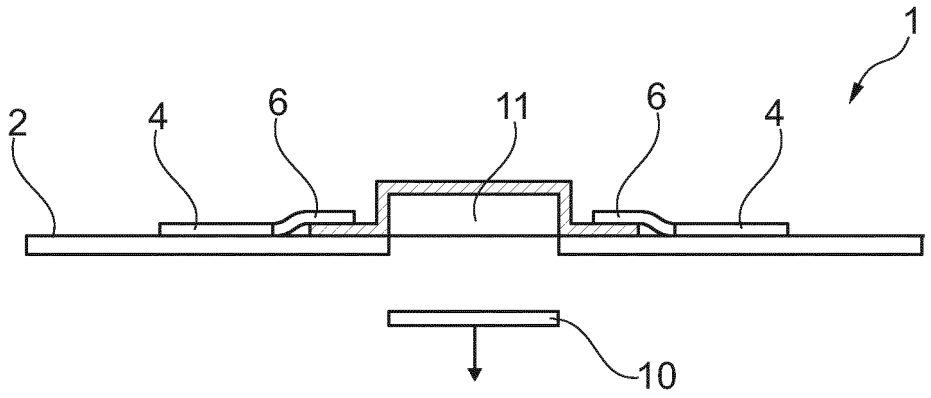


Fig. 2C

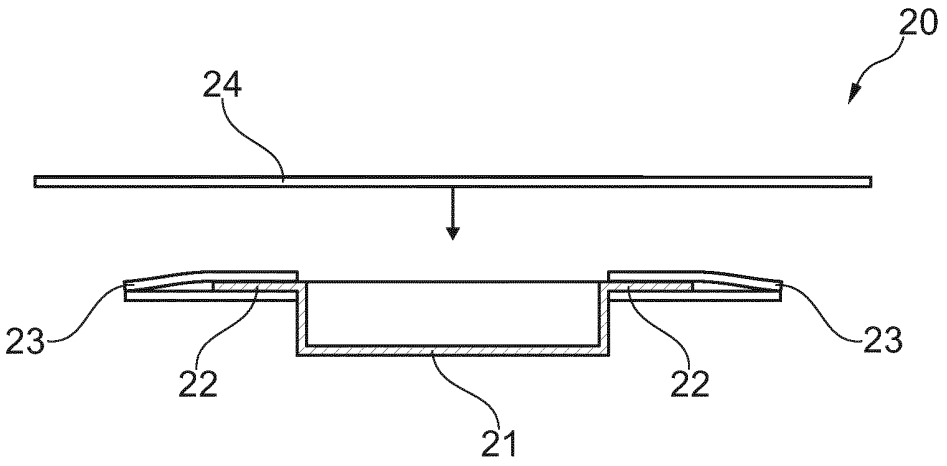


Fig. 3A

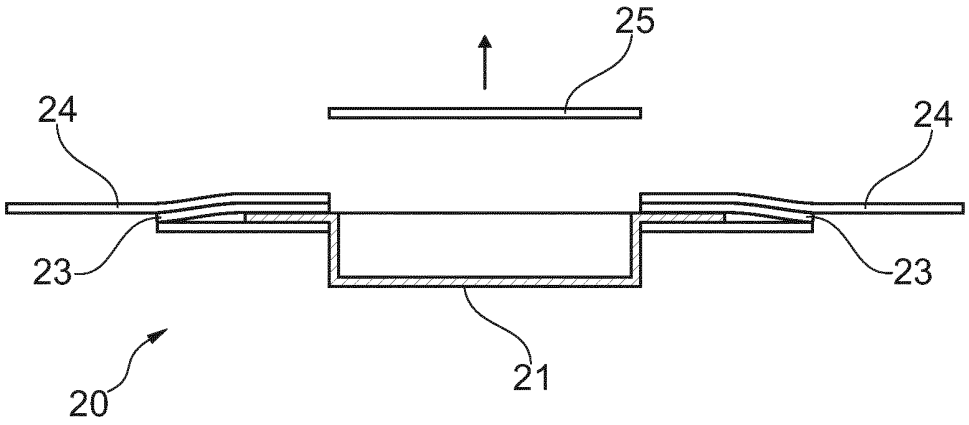


Fig. 3B

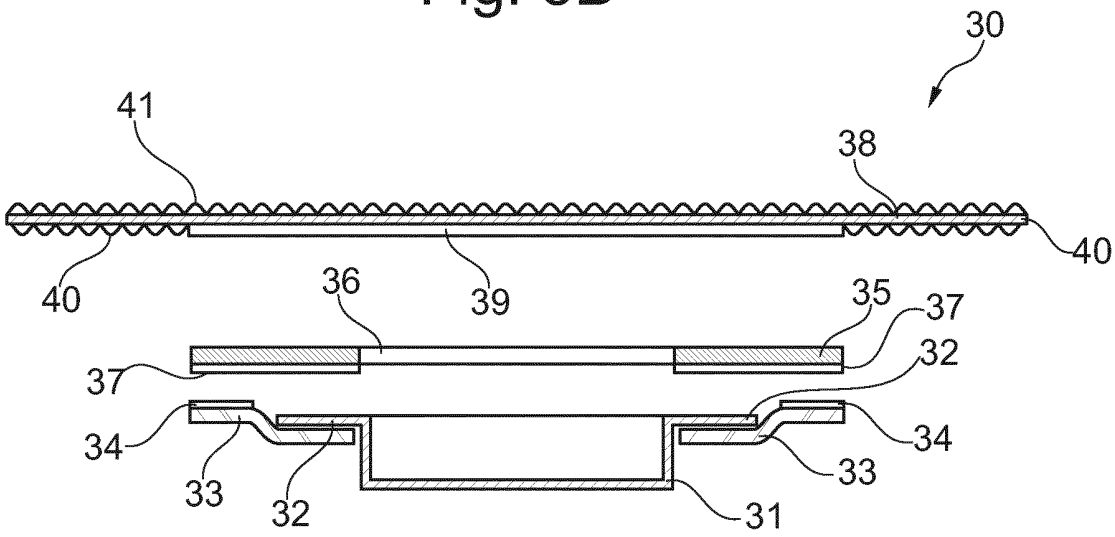


Fig. 4

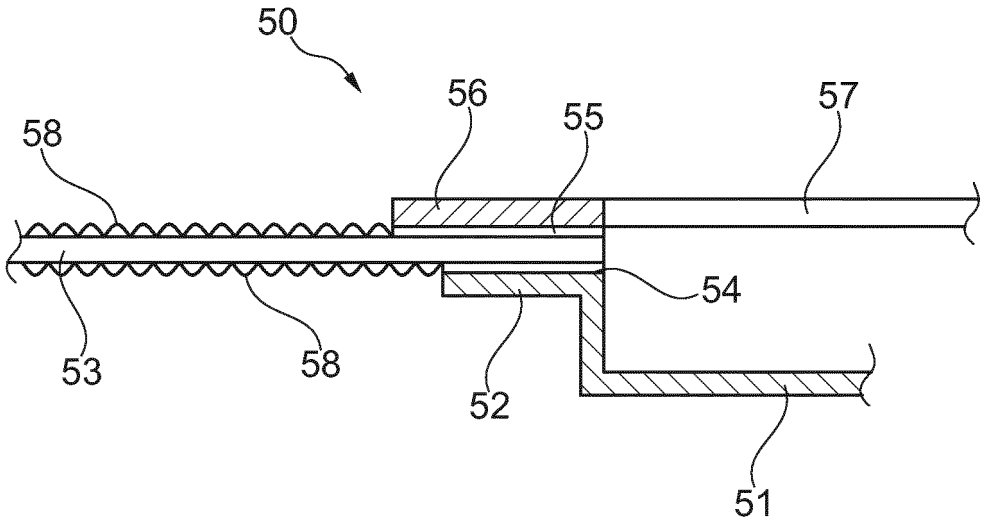


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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- DE 102010016816 A1 **[0012]**