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(54) **Transition device at floor drains**

Übergangsvorrichtung für Bodenablauf

Dispositif de transition pour bouche d'écoulement

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Description

[0001] The present invention relates to an inlet member and a transition means at floor drains.

[0002] In order to ensure that transition means at floor drains are correctly mounted, assembly is carried through at the factory. Thereby, three holes are made in upper parts of the floor drain and three corresponding holes in an outwardly directed flange portion of the transition means. When mounted, a sealing agent is located between the upper parts of the floor drain and the outwardly directed flange portion of the transition means, whereafter screw joints are inserted into the holes and tightened until the transition means is fixedly and sealingly attached to the floor drain.

[0003] A problem with these factory-mounted transition means is that the assembly work is extensive and expensive and that there is a risk for leakage through the holes made in the outwardly directed flange portion and the floor drain. Another problem is that the unit consisting of transition means and floor drain is very bulky, since the outwardly directed flange portion of the transition means has a very large diameter. This has a negative influence on the handling, transport and storage of the unit.

[0004] An inlet member and a transition means at floor drains according to the preamble of claim 1 is disclosed in the document US-A-1 731 617 and comprises two drain parts and an upper section with a grill. The two drain parts and the upper section can not be located in different laterally displaced positions relative to each other. This drain could therefore not be used if the hole in the floor and the drain parts are laterally displaced relative to each other.

[0005] The object of the present invention is to eliminate these problems, which according to the invention is achieved by providing the initially defined combination with the characterizing features of claim 1.

[0006] The inlet member and transition means with said characterizing features could be used either if the hole in the floor and the floor drain are concentrically positioned relative to each other but also if the hole in the floor and the floor drain are located in different laterally spaced positions relative to each other.

[0007] The combination with said characterizing features also permits separate handling and delivery of the transition means and the floor drain and easy mounting of the transition means on the floor drain at the site of mounting, so that secure connection and complete sealing is obtained between said members.

[0008] The invention will be further described below with reference to the accompanying drawings, wherein

figure 1 is a perspective view of the transition device together with a floor drain on which it shall be mounted and together with an inlet member for location on said transition means;

figure 2 is a section through a portion of the transition means of fig. 1 mounted on a floor drain;

figure 3 is another section through the transition means of fig. 1 mounted on a floor drain; and

figure 4 is a plan view of a portion of the transition device of fig. 1.

[0009] In the drawings, a floor drain 1 is illustrated which is mounted on a framing of joists 2 in a floor 3. The floor drain 1 can be of any suitable type and can e. g. have a side outlet or be of the bottom-dump type.

[0010] Furthermore, the floor drain 1 may have or may not have a water trap. The floor drain 1 has a through-flow hole 4 and the upper parts 5 thereof include a step 6 which is outwardly directed relative to said through-flow hole 4. The step 6 transcends into an upwardly directed part 7 which in turn, at the top, transcends into an outwardly directed flange 8.

[0011] The floor 3 comprises a sealing layer 9 of such a material that liquid is prevented from flowing down into the framing of joists 2. On top of this sealing layer 9 there is provided a layer 10 of set mortar and on top at that slabs or clinkers 11.

[0012] A transition means 12 is mounted to provide a waterproof transition between the sealing layer 9 and the floor drain 1. This transition means 12 includes an outwardly directed flange portion 13 with a central through-flow opening 14 and a downwardly directed collar 15 as well as an upwardly directed collar 16 which surround the through-flow opening 14. The downwardly directed collar 15 is designed to fit into the upper parts 5 of the floor drain 1 so that said collar 15 can be brought down into the upwardly directed part 7 of said floor drain until it engages the step 6.

[0013] The downwardly directed collar 15 has an outer groove 17 which is located therearound and into which a sealing ring 18 (so called O-ring) is inserted so that it protrudes a small distance therefrom. When the downwardly directed collar 15 is brought down into the upwardly directed part 7 of the floor drain 1, the sealing ring 18 will engage said upwardly directed part 7 so that said sealing ring provides for a liquid sealing between said downwardly directed collar 15 and said upwardly directed part 7. The sealing ring 18 may also be designed and located to that it contributes to the retention of the downwardly directed collar 15 at the upwardly directed part 7.

[0014] In order to permit stable anchoring of the transition means 12 to the floor drain 1 simply by pressing down the downwardly directed collar 15 into the upwardly directed part 7 of the floor drain 1, said downwardly directed collar 15 and/or said upwardly directed part 7 include(s) anchor members 19, 20.

[0015] An anchor member 19 on the downwardly directed collar 15 may be designed as a snap-in portion 19a and an anchor member 20 on the upwardly directed

part 7 as a snap-in portion 20a. While one or both snap-in portions 19a, 20a is/are resilient or located on resilient portions of the downwardly directed collar 15 and/or of the upwardly directed part 7, one or both snap-in portions 19a, 20a can spring aside when the downwardly directed collar 15 is pressed down into said upwardly directed part 7. Hereby, the snap-in portion 19a of the downwardly directed collar 15 can be moved down past the snap-in portion 20a on the upwardly directed part 7 and thereafter, the snap-in portion or portions 19a, 20a spring back to its or their original shapes or positions, whereby the snap-in portion 19a on the downwardly directed collar 15 snaps in under the snap-in portion 20a of the upwardly directed part 7. While the downwardly directed collar 15 thereby engages the step 6 of the floor drain 1, the transition portion 12, after provision of said snap-in connection, will be fixedly secured to the floor drain 1.

[0016] The snap-in portion 19a on the downwardly directed collar 15 may comprise an outwardly directed point 19b and the snap-in portion 20a on the upwardly directed part 7 an inwardly directed tongue 20b, beneath which said point 19b can engage and cooperate with said upwardly directed part 7.

[0017] Mounting of the transition means 12 at the floor drain 1 can be done, after application of the floor drain 1 on the framing of joists 2, by pressing down the downwardly directed collar 15 into the floor drain 1 until said collar is snapped in position and thereby engaging the step 6. This mounting or assembly is easy to carry through and the anchor members 19, 20, eventually with support from the sealing ring 18, thereafter retain the transition means 12 in a firm grip at the floor drain 1, whereby an adequate and permanent or durable connection and liquid sealing has been obtained between the transition means 12 and the floor drain 1.

[0018] As mentioned previously, the transition means 12 comprises an upwardly directed collar 16. This collar 16 extends upwardly from the outwardly directed flange portion 13 and is adapted to position a downwardly directed pipe member 21 on an inlet member 22 with an inlet hole 23. The pipe member 21 is located on a step 24 in the transition means 12 and its outer diameter is substantially less than the inner diameter of the upwardly directed collar 16, whereby said pipe member 21 and thereby, the inlet member 22, can be located in different laterally displaced positions relative to the transition means 12.

[0019] The step 24 can be formed where the inner side of the downwardly directed collar 15 transcends into the inner side of the upwardly directed collar 16, which has a larger inner diameter than said downwardly directed collar.

[0020] At the step 24 and on the inner side of the downwardly directed collar 15, there may be located a suitable number and in a suitable manner around the inlet hole 23 distributed support means 25, which are provided to prevent the downwardly directed pipe mem-

ber 21 and thereby, the inlet member 22, from being set obliquely relative to the transition means 12.

[0021] In order to render it possible for liquid to flow from the sealing layer down into the floor drain 1 without obstruction from the upwardly directed collar 16, said upwardly directed collar 16 is provided with through-flow openings 26 which preferably are uniformly distributed around the inlet hole 23. In order not to obstruct the flow of liquid with the downwardly directed pipe member 21 standing on the step 24, said step 24 has grooves 27 which preferably are connected directly with the through-flow openings 26.

[0022] The outwardly directed flange portion 13 may consist of or include plastic material, e.g. ABS, which can be glued to permit gluing or sizing of the sealing layer 9 onto the upper side thereof. To facilitate said sizing, said upper side may be blasted.

[0023] It should also be mentioned that the outwardly directed flange portion 13, closest to the upwardly directed collar 16, may include an inwardly/downwardly inclined member 28 for facilitating flow of liquid from the sealing layer 9 down into the floor drain 1.

[0024] The inlet member 22 may comprise a step 29 for an apertured plate 30 and said member may be rectangular to fit in with rectangular slabs or clinkers 11.

[0025] The invention is not limited to the embodiment described above, but may vary within the scope of the following claims. As examples of not described alternatives can be mentioned that the sealing device 18 may be another device than a sealing ring and if it is a sealing ring it can be lubricated so that it slides more easily against the floor drain 1 when the downwardly directed collar 15 is brought or moved down into said floor drain 1. The through-flow opening 26 may be at least one upwards open slit in the upwardly directed collar 16, but it may also have another shape and location.

Claims

1. Inlet member and transition means at floor drains, wherein the floor drain (1) is located in a floor (3), preferably a floor of slabs or clinkers (11), including a sealing layer (9),

wherein the transition means (12) is provided to form a fluid tight transition between the sealing layer (9) and the floor drain (1),

wherein the transition means (12) comprises an upwardly directed collar (16) which extends upwards relative to an outwardly directed flange portion (13), said upwardly directed collar (16) positioning or locating a downwardly directed pipe member (21) of the inlet member (22), and

wherein the upwardly directed collar (16) on the transition means (12) has at least one through-

flow opening (26) which is adapted to permit liquid to flow from the sealing layer (9) down into the floor drain (1),

characterized in that

the transition means (12) comprises a step (24) on which the downwardly directed pipe member (21) of the inlet member (22) is to be positioned and which transition means (12) comprises a downwardly directed collar (15) which can be inserted or moved down into the floor drain (1) and which is adapted to permit mounting of the transition means (12) thereto,

wherein the downwardly directed collar (15) and/or the floor drain (1) include(s) anchor members (19, 20) which permit anchoring or attachment of the downwardly directed collar (15) to the floor drain (1) by inserting and snapping said downwardly directed collar (15) thereto,

wherein at least one sealing means (18), preferably a sealing ring located on the downwardly directed collar (15), is mounted to provide a liquid sealing between the downwardly directed collar (15) and the floor drain (1) when said downwardly directed collar (15) is anchored or attached thereto, that the sealing layer is to be applied onto the outwardly directed flange portion (13) of the transition means, and

that the inner diameter of the upwardly directed collar (16) is substantially larger than the outer diameter of the downwardly directed pipe member (21) so that this pipe member (21) and thereby, the inlet member (22), can be located in different laterally displaced positions relative to the transition means (12).

2. Inlet member and transition means according to claim 1, **characterized in** that the step (24) is located where the inner side of the downwardly directed collar (15) transcends into the inner side of the upwardly directed collar (16).
3. Inlet member and transition means according to any preceding claim, **characterized in** that a groove (27) in the step (24) connects with at least one through-flow opening (26) in the upwardly directed collar (16), said groove (27) being adapted to facilitate for liquid to flow into an inlet hole (23) in the transition means (12) without obstruction from the downwardly directed pipe member (21) of the inlet member (22).
4. Inlet member and transition means according to claim 2 or 3, **characterized in** that on the transition

means (12) there are provided a number of support means (25) which extend into an inlet hole (23) and which are adapted to prevent that the downwardly directed pipe member (21) and thus, the inlet member (22), is set obliquely relative to the transition means (12).

5. Inlet member and transition means according to any preceding claim, **characterized in** that an outwardly directed flange portion (13), forming part of the transition means (12), has a blasted upper side to facilitate sizing or gluing of the sealing layer (9) thereonto.
6. Inlet member and transition means according to any preceding claim, **characterized in** that an outwardly directed flange portion (13), forming part of the transition means (12), consists of plastic material which can be glued to permit sizing or gluing of the sealing layer (9) onto the upper side thereof.
7. Inlet member and transition means according to any preceding claim, **characterized in** that an outwardly directed flange portion (13), forming part of the transition means (12), comprises, closest to the in relation to said outwardly directed flange portion (13) upwardly directed collar (16), an inwardly/downwardly inclined portion (28) for facilitating the flow of liquid from the sealing layer (9) down into the floor drain (1).

Patentansprüche

1. Einlaßorgan und Übergangseinrichtung für Bodenablauf, wobei der Bodenablauf (1) in einem Fußboden (3), vorzugsweise einem Fußboden aus Platten oder Klinkern (11) angeordnet ist und eine Abdichtschicht (9) enthält,

die Übergangseinrichtung (12) vorgesehen ist, um einen flüssigkeitsdichten Übergang zwischen der Abdichtschicht (9) und dem Bodenablauf (1) zu bilden,
die Übergangseinrichtung (12) einen nach oben stehenden Kragen (16) aufweist, der bezüglich eines nach außen stehenden Flanschteils (13) nach oben steht und der nach oben gerichtete Kragen (16) einen nach unten gerichteten Rohrteil (21) des Einlaßorgans (22) positioniert oder anordnet, und
wobei der nach oben gerichtete Kragen (16) an der Übergangseinrichtung (12) wenigstens eine Durchflußöffnung (26) aufweist, die geeignet ist, Flüssigkeit von der Abdichtschicht (9) nach unten in den Bodenablauf (1) fließen zu lassen,

dadurch gekennzeichnet, daß

die Übergangseinrichtung (12) eine Stufe (24) aufweist, auf der der nach unten gerichtete Rohrteil (21) des Einlaßorgans (22) anzuordnen ist und die Übergangseinrichtung (12) einen nach unten gerichteten Kragen (15) aufweist, der in den Bodenablauf (1) eingesetzt oder nach unten geschoben werden kann und der geeignet ist, eine Anbringung der Übergangseinrichtung (12) an demselben zu ermöglichen, wobei der nach unten gerichtete Kragen (15) und/oder der Bodenablauf (1) Verankerungsorgane (19,20) aufweist, welche eine Verankerung oder Befestigung des nach unten gerichteten Kragens (15) am Bodenablauf (1) durch Einsetzen und Einschnappen des nach unten gerichteten Kragens (15) in denselben ermöglichen, wenigstens eine Abdichteinrichtung (18), vorzugsweise ein auf dem nach unten gerichteten Kragen (15) angeordneter Dichtring, so angebracht ist, daß er eine Flüssigkeitsdichtung zwischen dem nach unten gerichteten Kragen (15) und dem Bodenablauf (1) bildet, wenn der nach unten gerichtete Kragen (15) daran verankert oder befestigt ist, daß die Abdichtschicht an dem nach außen gerichteten Flanschteil (13) der Übergangseinrichtung anzubringen ist, und der Innendurchmesser des nach oben gerichteten Kragens (16) wesentlich größer ist als der Außendurchmesser des nach unten gerichteten Rohrteils (21), so daß dieser Rohrteil (21) und dadurch das Einlaßorgan (22) in verschiedenen seitlich verschobenen Stellungen bezüglich der Übergangseinrichtung (12) angeordnet werden kann.

2. Einlaßorgan und Übergangseinrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Stufe (24) da angeordnet ist, wo die Innenseite des nach unten gerichteten Kragens (15) in die Innenseite des nach oben gerichteten Kragens (16) übergeht.
3. Einlaßorgan und Übergangseinrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß eine Rille (27) in der Stufe (24) mit wenigstens einer Durchflußöffnung (26) in dem nach oben gerichteten Kragen (16) in Verbindung steht, wobei die Rille (27) geeignet ist, das Strömen von Flüssigkeit in ein Einlaßloch (23) in der Übergangseinrichtung (12) ohne Behinderung durch den nach unten gerichteten Rohrteil (21) des Einlaßorgans (22) zu erleichtern.
4. Einlaßorgan und Übergangseinrichtung nach An-

spruch 2 oder 3, dadurch gekennzeichnet, daß an der Übergangseinrichtung (12) eine Anzahl von Stützeinrichtungen (25) vorgesehen ist, die sich in ein Einlaßloch (23) erstrecken und geeignet sind, ein schräges Einsetzen des nach unten gerichteten Rohrteils (21) und somit des Einlaßorgans (22) bezüglich der Übergangseinrichtung (12) zu verhindern.

5. Einlaßorgan und Übergangseinrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß ein nach außen gerichteter Flanschteil (13), der einen Teil der Übergangseinrichtung (12) bildet, eine abgestrahlte Oberseite aufweist, um ein Anleimen oder Ankleben der Abdichtschicht (9) an demselben zu erleichtern.
6. Einlaßorgan und Übergangseinrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß ein nach außen gerichteter Flanschteil (13), der einen Teil der Übergangseinrichtung (12) bildet, aus Kunststoff besteht, der geklebt werden kann, um ein Anleimen oder Ankleben der Abdichtschicht (9) auf dessen Oberseite zu ermöglichen.
7. Einlaßorgan und Übergangseinrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß ein nach außen gerichteter Flanschteil (13), der einen Teil der Übergangseinrichtung (12) bildet, sehr eng an dem bezüglich des nach außen gerichteten Flanschteils (13) nach oben gerichteten Kragens (16) einen nach innen/unten geneigten Teil (28) aufweist, um das Fließen von Flüssigkeit von der Abdichtschicht (9) nach unten in den Bodenablauf (1) zu erleichtern.

Revendications

1. Élément d'entrée et moyen de transition pour des siphons de sols, dans lesquels le siphon de sol (1) est disposé dans un sol (3), de préférence un sol de dalles ou de briques dures (11), englobant une couche d'étanchéisation (9),

dans lesquels le moyen de transition (12) est prévu pour former une transition étanche aux fluides entre la couche d'étanchéisation (9) et le siphon de sol (1),

dans lesquels le moyen de transition (12) comprend une bague (16) orientée vers le haut qui s'étend vers le haut par rapport à une portion de bride (13) orientée vers l'extérieur, ladite bague (16) orientée vers le haut positionnant ou disposant un élément de tuyau (21) orienté vers le bas de l'élément d'entrée (22), et dans lesquels la bague (16) orientée vers le

haut sur le moyen de transition (12) possède au moins une ouverture de passage (26) qui est conçue pour permettre à du liquide de s'écouler depuis la couche d'étanchéisation (9) vers le bas dans le siphon de sol (1),

caractérisé en ce que le moyen de transition (12) comprend un gradin (24) sur lequel doit venir se positionner l'élément de tuyau (21) de l'élément d'entrée (22) orienté vers le bas et ledit moyen de transition (12) comprend une bague (15) orientée vers le bas qui peut venir s'insérer ou se déplacer vers le bas pour pénétrer dans le siphon de sol (1) et qui est conçue pour permettre d'y monter le moyen de transition (12),

dans lesquels la bague (15) orientée vers le bas et/ou le siphon de sol (1) englobent des éléments d'ancrage (19, 20) qui permettent d'ancrer ou de fixer la bague (15) orientée vers le bas au siphon de sol (1) par insertion et encliquetage dans ce dernier de ladite bague (15) orientée vers le bas,

dans lesquels au moins un moyen d'étanchéisation (18), de préférence un anneau d'étanchéisation disposé sur la bague (15) orientée vers le bas est montée pour procurer une étanchéisation aux liquides entre la bague (15) orientée vers le bas et le siphon de sol (1) lorsque ladite bague (15) orientée vers le bas est ancrée ou fixée à ce dernier,

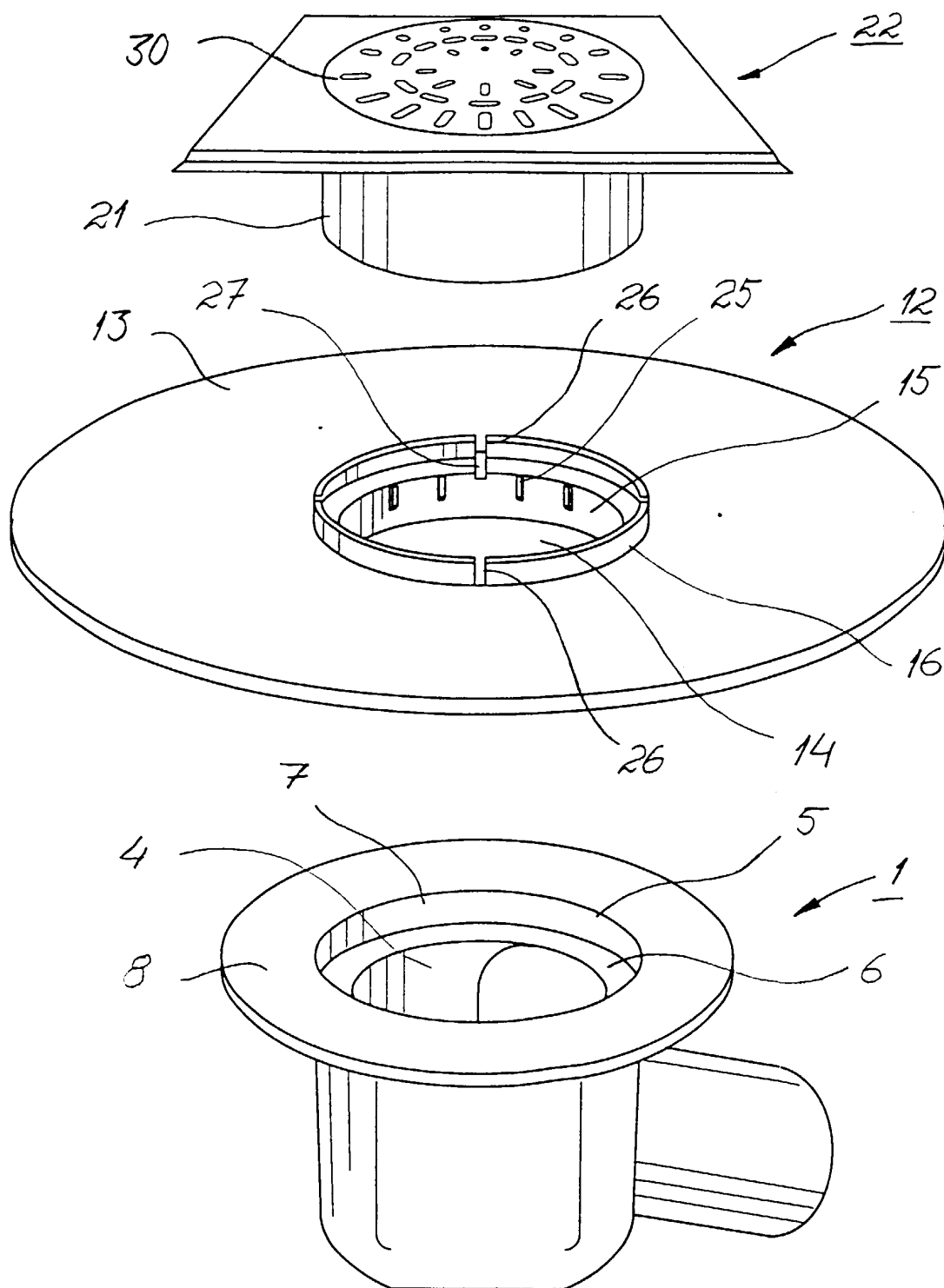
en ce que la couche d'étanchéisation doit venir s'appliquer sur la portion de bride (13) du moyen de transition orientée vers l'extérieur, et en ce que le diamètre interne de la bague (16) orientée vers le haut est essentiellement supérieur au diamètre externe de l'élément de tuyau (21) orienté vers le bas, si bien que cet élément de tuyau (21), partant l'élément d'entrée (22) peuvent venir se disposer dans différentes positions décalées latéralement par rapport au moyen de transition (12).

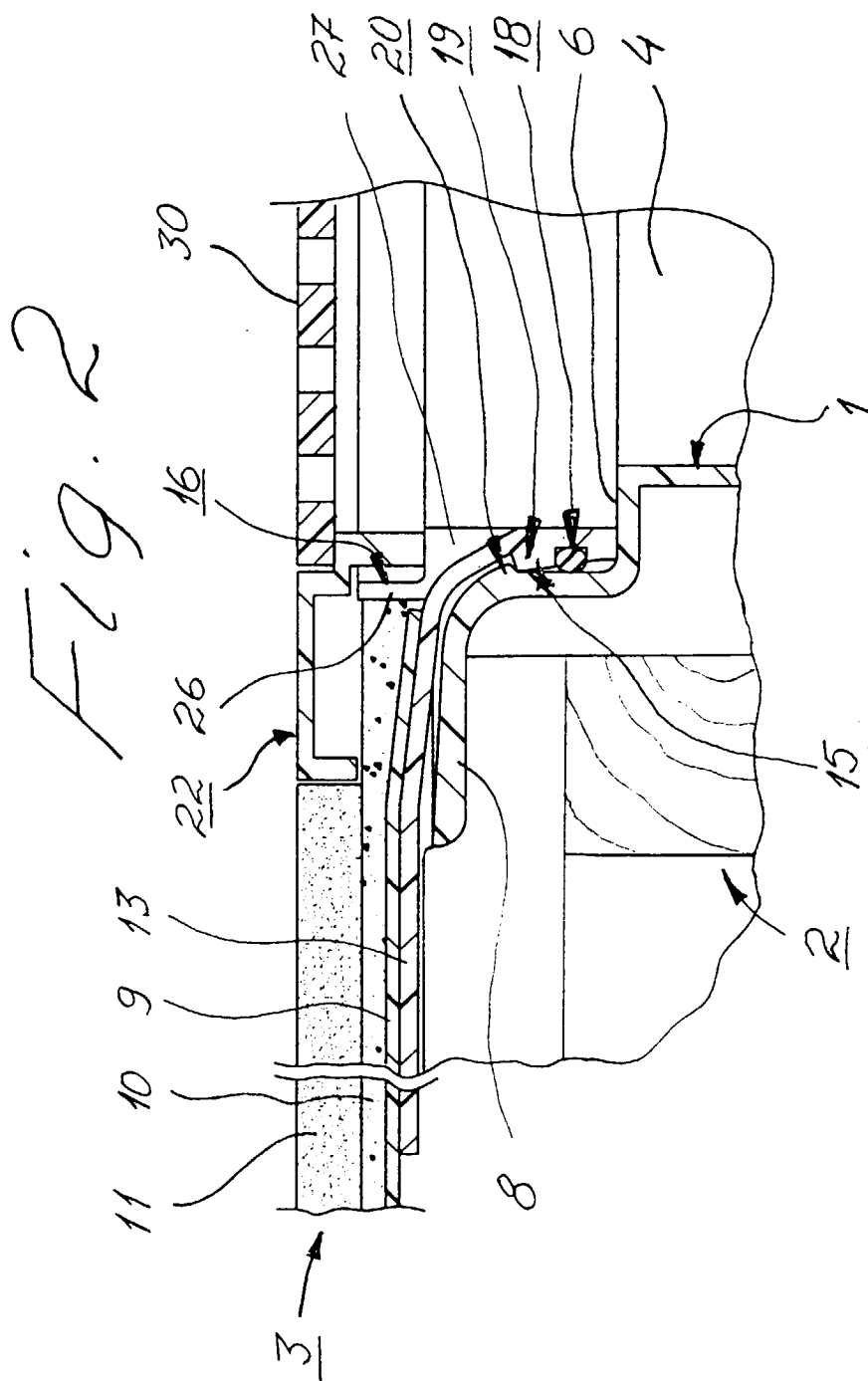
2. Elément d'entrée et moyen de transition selon la revendication 1, caractérisés en ce que l'épaulement (24) est disposé à l'endroit où le côté interne de la bague (15) orienté vers le bas se transforme en côté interne de la bague (16) orienté vers le haut.
3. Elément d'entrée et moyen de transition selon l'une quelconque des revendications précédentes, caractérisés en ce qu'une rainure (27) pratiquée dans l'épaulement (24) est reliée à au moins une ouverture de passage (26) dans la bague (16) orientée vers le haut, ladite rainure (27) étant conçue pour faciliter l'écoulement de liquide dans un trou d'entrée (23) dans le moyen de transition (12) sans être gêné par l'élément de tuyau (21) de l'élément d'en-

trée (22), orienté vers le bas.

4. Elément d'entrée et moyen de transition selon la revendication 2 ou 3, caractérisés en ce qu'on prévoit sur le moyen de transition (12) plusieurs moyens de support (25) qui s'étendent dans un trou d'entrée (23) et qui sont conçus pour empêcher le placement de l'élément de tuyau (21) orienté vers le bas partant de l'élément d'entrée (22) en oblique par rapport au moyen de transition (12).
5. Elément d'entrée et moyen de transition selon une quelconque des revendications précédentes, caractérisés en ce qu'une portion de bride (13) orientée vers l'extérieur faisant partie du moyen de transition (12) possède un côté supérieur soumis à un grenailage pour faciliter l'adhérence ou le collage de la couche d'étanchéisation (9).
6. Elément d'entrée et moyen de transition selon une quelconque des revendications précédentes, caractérisés en ce qu'une portion de bride (13) orientée vers l'extérieur et faisant partie du moyen de transition (12) est constituée d'une matière plastique qui peut être collée pour permettre l'adhérence ou le collage de la couche d'étanchéisation (9) sur son côté supérieur.
7. Elément d'entrée et moyen de transition selon la revendication 1, caractérisés en ce qu'une portion de bride (13) orientée vers l'extérieur, faisant partie du moyen de transition (12) comprend, à proximité étroite de la bague (16) orientée vers le haut en relation avec ladite portion de bride (13) orientée vers l'extérieur, une portion (28) inclinée vers l'intérieur/vers le bas pour faciliter l'écoulement de liquide depuis la couche d'étanchéisation (9) vers le bas dans le siphon de sol (1).

Fig. 1





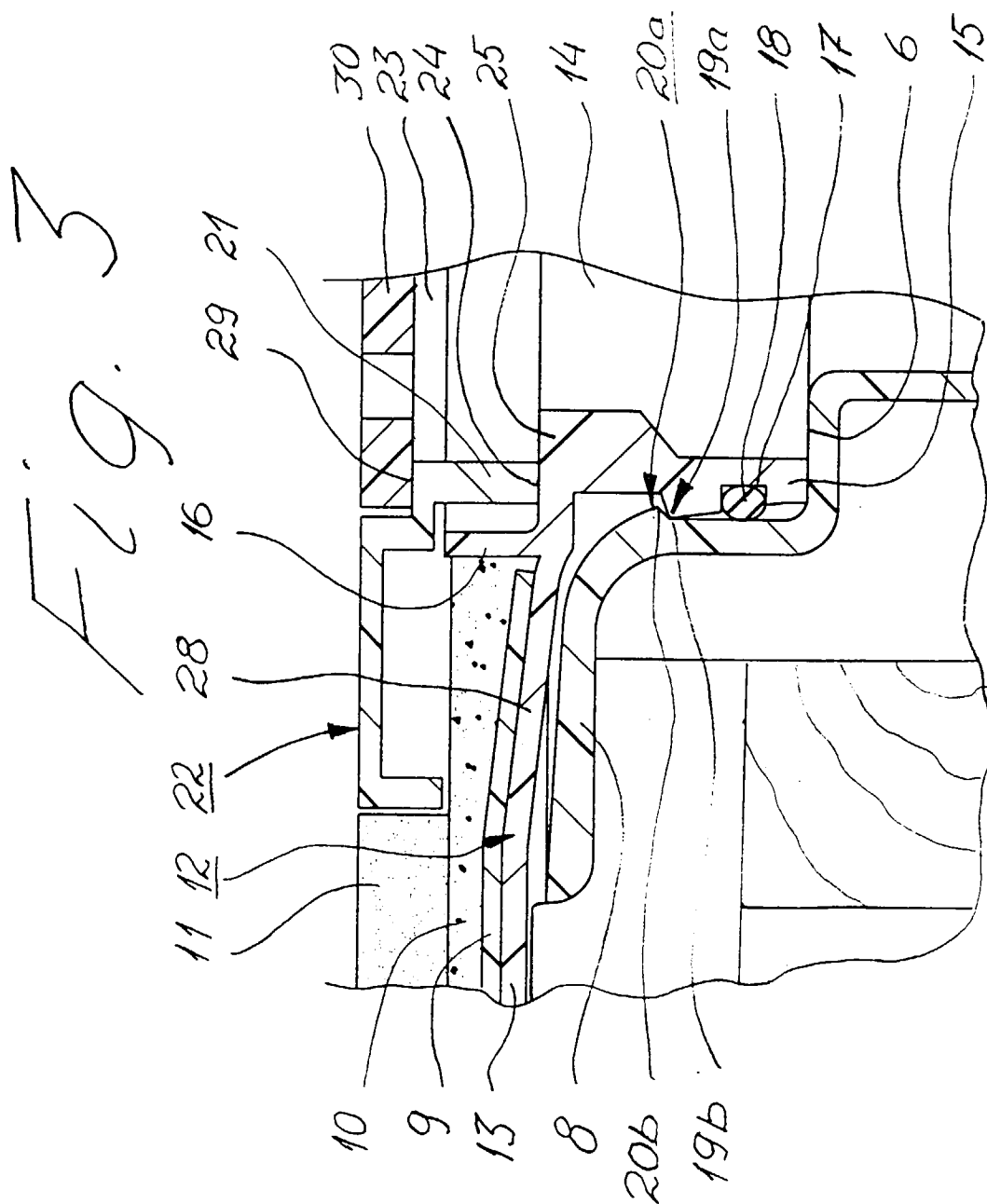


Fig. 4

