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(54) **Siphon with double mounting**

Geruchsverschluss mit zwei Montagevorrichtungen

Siphon à double montage

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EP 2 365 142 B1

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Description

[0001] The invention relates to a siphon according to the preamble of claim 1. Such a siphon is known from WO 2007/111429.

[0002] Different couplings are known in the sanitary field. Outlet pipes are thus coupled by an adhesive sleeve which is adhered to both outlet pipes. If it is necessary to take expansion into account, both pipes can be provided with a sleeve comprising two sealing rings on the inside. An end of a pipe is inserted into each sealing ring so that a watertight connection is obtained, while allowing for possible length variations in the pipes as a result of expansion and contraction.

[0003] For the purpose of fixing a siphon or waste to a washbasin, bath or shower tray it is known to screw a cylindrical coupling part into the siphon or waste from above in the receptacle. Good sealing of the receptacle onto the siphon or waste is difficult here. It is usual to arrange a sealing ring between the receptacle and the siphon or waste, but there is a risk here of leakage occurring. This can be the result of the coupling part not being tightened sufficiently, or the result of expansion and contraction and setting of the sealing ring. Water then flows out of the receptacle round the outside of the coupling part and is not stopped by the usual sealing ring.

[0004] Shower trays and baths are further often rough on the underside because they are manufactured from sprayed polyester. Although the edge around the connection is then ground, it is considerably less smooth than the upper side of the receptacle. Also in the case of ceramic washbasins the underside is considerably rougher than the part visible during normal use.

[0005] Shower drains are in some cases provided on the underside with a tubular outflow. A siphon or a sleeve with sealing ring is usually pushed onto this tubular part, and an outlet pipe is then fixed to this sleeve.

[0006] It will be apparent from the above that a prior art pipe can be coupled by means of a slide connection or by means of a screw connection. The drawback of a screw connection is that it may possibly not be tightened sufficiently, whereby the connection will begin to leak.

[0007] The drawback of a plug-in sleeve with sealing ring is that the connection to a pipe is only kept in place as a result of the friction between the pipe and the sealing ring. The danger here is that the pipe can spring out of the plug-in sleeve, resulting in leakage.

[0008] It is now an object of the invention to provide a siphon wherein the above stated drawbacks are alleviated or even prevented.

[0009] This object is achieved with a siphon according to claim 1.

[0010] In the siphon according to the invention the advantages of the known prior art couplings are combined while the drawbacks are avoided. The seal on the cylindrical wall provides for a good seal in the case of coupling to for instance an outlet pipe. In addition, the coupling means on the second edge ensure that the coupling can-

not be pulled apart without warning. The seal is arranged in the wall. Since the dimensions of the wall are predetermined, the compression, and thereby the sealing force of the seal, can thus also be precalculated. The seal does not therefore depend on for instance a tightening force.

[0011] In an embodiment of a coupling piece according to the invention the coupling means comprise screw thread. The advantage of this embodiment is that parts usual in the prior art can be coupled to a coupling piece according to the invention. The screw connection then provides for a reliable coupling, while the seal provides for the watertightness of the coupling.

[0012] In another embodiment of the coupling piece according to the invention the coupling means comprise a bayonet coupling. As with a screw connection, a secure connection can be obtained with a bayonet coupling. In addition, a bayonet coupling provides the additional advantage that some play is present in the coupling, whereby changes in length resulting from contraction and expansion can be easily compensated.

[0013] In a highly preferred embodiment of the coupling piece the cylindrical wall is stepped such that a first cylindrical part and a second cylindrical part are formed, wherein the first part has a larger diameter than the second part. The coupling means are preferably arranged on the second part.

[0014] The advantage of this embodiment is that prior art coupling parts can also be used. A smooth pipe can thus be easily inserted over the first cylindrical part with the seal, while a screw part can for instance be easily screwed into the second part provided the second part is provided with a screw thread.

[0015] In addition, an inserted smooth pipe can be secured by screwing in from above an additional coupling part which engages the threaded part.

[0016] In yet another embodiment of the coupling piece according to the invention the cylindrical wall comprises a telescopic wall part. Owing to the telescopic wall part the part with the coupling means and the seal can extend and thus correct for height differences. A siphon is often cast into a concrete floor. Foam plates can then be arranged thereon as insulation. A shower drain or the like is often already arranged in such foam plates. When the siphon lies too deeply in the concrete floor and the shower drain is fixed to the siphon, there is a chance of the foam plate being deformed. It is possible with the telescopic part to compensate for such height differences.

[0017] In addition, this embodiment provides the option of compensating variations in length. A shower tray or bath will thus deform when a person steps into it. The telescopic wall part can slide in and out and thereby compensate the variations in length.

[0018] The invention further relates to a combination of a coupling piece according to the invention and a cylindrical coupling part arranged in the cylindrical wall, wherein the coupling part comprises coupling means on one side for coupling to the coupling means of the coupling piece, and wherein the coupling part comprises a

flat peripheral part on the opposite side for connection to the seal of the coupling piece.

[0019] Because the coupling part is provided with a flat peripheral part which co-acts with the seal and is provided with a part which co-acts with the coupling means of the coupling piece. The two functions are thus separate of each other and the reliability of both the coupling and the seal is guaranteed.

[0020] An outlet pipe can be arranged on the coupling part.

[0021] An additional advantage of the coupling part is that, once the various parts have been fitted, the coupling part can be removed, whereby the seal is accessible and can be easily replaced. This is because the seal is arranged on the inner side of the cylindrical wall. In a prior art siphon the seal is provided for instance between the housing and for instance a shower tray, and is therefore difficult to replace or not possible to replace.

[0022] The invention further comprises a siphon comprising a housing with an inflow opening and an outflow opening and a stench trap arranged between the inflow opening and the outflow opening, wherein a coupling piece according to the invention is arranged in the inflow opening.

[0023] With a siphon according to the invention a multifunctional siphon is obtained which can be coupled in known ways as well as in the manner according to the invention, wherein seal and coupling function separately of each other.

[0024] In a preferred embodiment of the siphon according to the invention the seal extends over the inflow opening and outside the housing. Such a seal provides for an additional sealing, particularly when the siphon is mounted against for instance a washbasin.

[0025] These and other features of the invention are further elucidated with reference to the accompanying drawings.

Figure 1 shows a perspective view of an embodiment of a siphon according to the invention.

Figure 2 shows a cross-sectional view of an embodiment of a combination according to the invention.

Figure 3 shows a cross-sectional view of an embodiment of a coupling piece according to the invention.

Figure 4 shows a perspective view of the second embodiment of a siphon according to the invention.

Figure 5 shows a third embodiment of a combination according to the invention.

[0026] Figure 1 shows an embodiment of a siphon 1 according to the invention. Siphon 1 has a housing with an upper surface 2, a peripheral wall 3 and a bottom surface 4. An inflow opening 5 is arranged in upper surface 2. Arranged in peripheral wall 3 is an outflow opening 6 on which a pipe end 7 is arranged.

[0027] A wall 8 rising from bottom surface 4 is arranged in the housing. Upper edge 9 of standing wall 8 forms an elongate overflow edge which forms a part of the stench

trap.

[0028] A coupling piece 10 according to the invention is arranged on inflow opening 5. This coupling piece 10 has a first cylindrical part 11 and a second cylindrical part 12. Provided in cylindrical part 11 is a groove 13 in which a sealing ring can be arranged. Screw thread is provided on the inner surface of cylindrical part 12.

[0029] Siphon 1 can be coupled by screwing a suitable bush into the inflow opening, the bush being provided on the underside with a screw thread and on the upper side with a smooth surface for lying against a sealing ring arranged in groove 13.

[0030] Figure 2 shows a coupling piece 15 similar to coupling piece 10 of figure 1. Coupling piece 15 is cylindrical, stepped and has a first cylindrical part 16 and a second cylindrical part 17. The first cylindrical part 16 is provided with a groove 18 in which a sealing ring 19 is arranged.

[0031] Sealing ring 19 is provided with a flexible flange 20 which runs round the outlet opening of a washbasin 21. A bush 22 is arranged from above in the outlet opening of washbasin 21. This bush is provided on the underside with a screw thread 23 which can engage screw thread 24 in the second cylindrical part 17.

[0032] Flexible flange 20 can optionally protrude once bush 22 has been arranged.

[0033] Bush 22 is provided on the top side with a flange 25 which lies against flexible flange 20 and presses it against washbasin 21. Because flexible flange 20 lies against the smooth, often glazed part of the washbasin, a reliable seal is provided. A second sealing ring can optionally be provided instead of flexible flange 20 in flange 25.

[0034] In a prior art siphon a sealing ring is provided between the housing of the siphon and for instance the washbasin. In the invention this sealing ring can now be omitted. An additional advantage is that there are fewer resilient parts present in the mounting. As a result there is less chance that, due to setting of the resilient parts, too much play occurs and leakage results.

[0035] Figure 3 shows an embodiment of a coupling piece 30. This coupling piece 30 has a cylindrical housing 31 with a stepped inner wall consisting of a cylindrical central part 32 and cylindrical parts 33 connecting on either side. Arranged in each cylindrical part 33 is a groove 34 in which a sealing ring 35 is placed.

[0036] Two bayonet slots 36 are arranged in central part 32.

[0037] A pipe 37 can be inserted on either side of coupling piece 30, wherein the end of pipe 37 is provided with a bayonet pin 38 which engages in one of the bayonet slots 36. The associated sealing ring 35 provides for the desired seal on the outer wall of pipe 37.

[0038] Figure 4 shows a second embodiment of a siphon 40 according to the invention. Siphon 40 has a housing with an upper surface 42 in which an inflow opening 41 is arranged. An outflow opening 44 is present in peripheral wall 43 of the housing.

[0039] A depending wall 45 is arranged on inflow opening 41. This depending wall 45 has an elliptical cross-section and is provided with a peripheral groove 46 in which a sealing ring 47 is arranged.

[0040] Arranged in depending wall 45 is an elliptical part 48 in which a cylindrical wall 49 is provided. The lower part of cylindrical wall 49 is provided with screw thread 50. Arranged on the upper side of cylindrical wall 49 is a groove 51 in which a sealing ring can be placed.

[0041] Siphon 40 according to figure 4 is largely similar to siphon 1 according to figure 1. Cylindrical wall 49 is arranged in elliptical part 48, whereby it can slide up and downward relative to the housing in order to thus compensate for height differences.

[0042] In order to prevent elliptical part 48 sliding out of the housing, there is provided in depending wall 45 a groove 53 into which extends a protrusion 52 of part 48.

[0043] Shown in figure 5 is combination 60 according to the invention. A coupling piece 61 is cylindrical, stepped and has a first cylindrical part 62 and a second cylindrical part 63. The first cylindrical part 62 is provided with a groove 64 in which a sealing ring 65 is arranged.

[0044] Sealing ring 65 is provided with a flange 66 which runs on the top side of coupling piece 61 between washbasin 67 and coupling piece 61.

[0045] A bush 68 is arranged from above in the outlet opening of washbasin 67. This bush is provided on the underside with a screw thread 69 which can engage the screw thread in the second cylindrical part 63.

[0046] Bush 68 is provided on the top side with a flange 70. In this flange 70 is arranged a groove in which an O-ring 71 is arranged. When bush 68 is screwed into coupling piece 61 the O-ring 71 lies against washbasin 67. A first seal is hereby obtained.

Claims

1. Siphon (1; 40) comprising a housing (2, 3, 4; 42) with an inflow opening (5; 41) and an outflow opening (6; 44) and a stench trap (8, 9) arranged between the inflow opening (5; 41) and the outflow opening (6; 44), wherein a coupling piece (10; 15; 49) is arranged in the inflow opening (5; 41) for coupling the siphon (1; 40) to a washbasin (21), bath or shower tray, which coupling piece (10; 15; 30; 49; 61) comprises a cylindrical wall (11, 12; 16, 17; 32, 33; 49; 62, 63), wherein a seal (19; 35; 65) is arranged close to a first edge of the cylindrical wall (11, 12; 16, 17; 49; 62, 63) and wherein coupling means are arranged on the opposite second edge, wherein the coupling means (24; 36; 50) are arranged on the inner surface of the cylindrical wall (11, 12; 16, 17; 32, 33; 49; 62, 63), **characterized in that** a groove (13; 18; 34; 51; 64) is arranged on the inner surface in the cylindrical wall (11, 12; 16, 17; 32, 33; 49; 62, 63) and wherein the seal (19; 35; 65) is arranged in the groove (13; 18; 34; 51; 64).

2. Siphon (1; 40) as claimed in claim 1, wherein the coupling means comprise screw thread (24; 50; 63).
3. Siphon (1; 40) as claimed in claim 1 or 2, wherein the coupling means comprise a bayonet coupling (36).
4. Siphon (1; 40) as claimed in any of the foregoing claims, wherein the cylindrical wall (11, 12; 16, 17; 49; 62, 63) is stepped such that a first cylindrical part (11; 16; 62) and a second cylindrical part (12; 17; 63) are formed, wherein the first part (11; 16; 62) has a larger diameter than the second part (12; 17; 63).
5. Siphon (1; 40) as claimed in claim 4, wherein the coupling means (24; 50; 63) are arranged on the second part (12; 17; 63).
6. Siphon (1; 40) as claimed in any of the foregoing claims, wherein the cylindrical wall (49) comprises a telescopic wall part (45).
7. Siphon (1; 40) as claimed in any of the preceding claims, wherein the seal (19) extends over the inflow opening and outside the housing.
8. Combination of a siphon (1; 40) as claimed in any of the foregoing claims and a cylindrical coupling part (22; 68) which is arranged in the cylindrical wall (11, 12; 16, 17; 49), wherein the coupling part (22; 68) comprises coupling means (23; 69) on one side for coupling to the coupling means (24; 50; 63) of the coupling piece (10; 15; 49), and wherein the coupling part (22; 68) comprises a flat peripheral part (25; 70) on the opposite side for connection to the seal of the coupling piece (10; 15; 49).
9. Combination as claimed in claim 8, wherein an outlet pipe is arranged on the coupling part.

Patentansprüche

1. Siphon (1; 40), umfassend ein Gehäuse (2, 3, 4; 42) mit einer Einströmöffnung (5; 41) und einer Ausströmöffnung (6; 44) und einem Geruchsverschluss (8, 9), der zwischen der Einströmöffnung (5; 41) und der Ausströmöffnung (6; 44) angeordnet ist, wobei ein Kupplungsstück (10; 15; 49) in der Einströmöffnung (5; 41) zum Kuppeln des Siphons (1; 40) mit einem Waschbecken (21), einer Badewanne oder einer Duschwanne angeordnet ist, wobei das Kupplungsstück (10; 15; 30; 49; 61) eine zylindrische Wand (11, 12; 16, 17; 32, 33; 49; 62, 63) umfasst, wobei eine Dichtung (19; 35; 65) nahe einer ersten Kante der zylindrischen Wand (11, 12; 16, 17; 49; 62, 63) angeordnet ist und wobei Kupplungsmittel an der gegenüberliegenden zweiten Kante angeord-

net sind, wobei die Kupplungsmittel (24; 36; 50) an einer inneren Oberfläche der zylindrischen Wand (11, 12; 16, 17; 32, 33; 49; 62, 63) angeordnet sind, **dadurch gekennzeichnet, dass** eine Nut (13; 18; 34; 51; 64) an der inneren Oberfläche der zylindrischen Wand (11, 12; 16, 17; 32, 33; 49; 62, 63) angeordnet ist und wobei eine Dichtung (19; 35; 65) in der Nut (13; 18; 34; 51; 64) angeordnet ist.

2. Siphon (1; 40) nach Anspruch 1, wobei die Kupplungsmittel Schraubengewinde (24; 50; 63) umfassen. 10
3. Siphon (1; 40) nach Anspruch 1 oder 2, wobei die Kupplungsmittel eine Bajonettkupplung (36) umfassen. 15
4. Siphon (1; 40) nach einem der vorstehenden Ansprüche, wobei die zylindrische Wand (11, 12; 16, 17; 49; 62, 63) derart abgestuft ist, dass ein erster zylindrischer Teil (11; 16; 62) und ein zweiter zylindrischer Teil (12; 17; 63) gebildet sind, wobei der erste Teil (11; 16; 62) einen größeren Durchmesser als der zweite Teil (12; 17; 63) aufweist. 20
5. Siphon (1; 40) nach Anspruch 4, wobei die Kupplungsmittel (24; 50; 63) an dem zweiten Teil (12; 17; 63) angeordnet sind. 25
6. Siphon (1; 40) nach einem der vorstehenden Ansprüche, wobei die zylindrische Wand (49) einen teleskopischen Wandteil (45) umfasst. 30
7. Siphon (1; 40) nach einem der vorstehenden Ansprüche, wobei die Dichtung (19) sich über die Einströmöffnung und eine Außenseite des Gehäuses erstreckt. 35
8. Kombination von einem Siphon (1; 40) nach einem der vorstehenden Ansprüche und einem zylindrischen Kupplungsteil (22; 68), das in der zylindrischen Wand (11, 12; 16, 17; 49) angeordnet ist, wobei das Kupplungsteil (22; 68) Kupplungsmittel (23; 69) auf einer Seite zum Kuppeln mit den Kupplungsmitteln (24; 50; 63) des Kupplungsteils (10; 15; 49) umfasst und wobei das Kupplungsteil (22; 68) einen flachen Umfangsteil (25; 70) auf der gegenüberliegenden Seite zur Verbindung mit der Dichtung des Kupplungsstücks (10; 15; 49) umfasst. 40
9. Kombination nach Anspruch 8, wobei ein Auslassrohr an dem Kupplungsteil angeordnet ist. 50

Revendications

1. Siphon (1 ; 40) comprenant un boîtier (2, 3, 4 ; 42) avec une ouverture d'entrée de flux (5 ; 41) et une

ouverture de sortie de flux (6 ; 44) et un piège à odeurs (8, 9) ménagé entre l'ouverture d'entrée de flux (5 ; 41) et l'ouverture de sortie de flux (6 ; 44), dans lequel une pièce de couplage (10 ; 15 ; 49) est ménagée dans l'ouverture d'entrée de flux (5 ; 41) pour coupler le siphon (1 ; 40) à une vasque (21), une baignoire ou un bac à douche, ladite pièce de couplage (10 ; 15 ; 30 ; 49 ; 61) comprend une paroi cylindrique (11, 12 ; 16, 17 ; 32, 33 ; 49 ; 62, 63), dans lequel un joint d'étanchéité (19, 35 ; 65) est disposé à proximité d'un premier bord de la paroi cylindrique (11, 12 ; 16, 17 ; 49 ; 62, 63) et dans lequel des moyens de couplage sont ménagés sur le second bord opposé, dans lequel les moyens de couplage (24 ; 36 ; 50) sont ménagés sur la surface intérieure de la paroi cylindrique (11, 12 ; 16, 17 ; 32, 33 ; 49 ; 62, 63), **caractérisé en ce qu'une rainure** (13 ; 18 ; 34 ; 51 ; 64) est ménagée sur la surface intérieure dans la paroi cylindrique (11, 12 ; 16, 17 ; 32, 33 ; 49 ; 62, 63) et dans lequel le joint d'étanchéité (19 ; 35 ; 65) est ménagé dans la rainure (13 ; 18 ; 34 ; 51 ; 64).

2. Siphon (1 ; 40) selon la revendication 1, dans lequel les moyens de couplage comprennent un filetage (24 ; 50 ; 63). 25
3. Siphon (1 ; 40) selon la revendication 1 ou 2, dans lequel les moyens de couplage comprennent un couplage à baïonnette (36). 30
4. Siphon (1 ; 40) selon l'une quelconque des revendications précédentes, dans lequel la paroi cylindrique (11, 12 ; 16, 17 ; 49 ; 62, 63) comprend un épaulement de sorte qu'une première partie cylindrique (11 ; 16 ; 62) et une seconde partie cylindrique (12 ; 17 ; 63) sont formées, dans lequel la première partie (11 ; 16 ; 62) a un diamètre plus grand que la seconde partie (12 ; 17 ; 63). 35
5. Siphon (1 ; 40) selon la revendication 4, dans lequel les moyens de couplage (24 ; 50 ; 63) sont ménagés sur la seconde partie (12 ; 17 ; 63). 40
6. Siphon (1 ; 40) selon l'une quelconque des revendications précédentes, dans lequel la paroi cylindrique (49) comprend une partie de paroi télescopique (45). 45
7. Siphon (1 ; 40) selon l'une quelconque des revendications précédentes, dans lequel le joint d'étanchéité (19) s'étend sur l'ouverture d'entrée de flux et à l'extérieur du boîtier. 50
8. Combinaison d'un siphon (1 ; 40) selon l'une quelconque des revendications précédentes et d'une partie de couplage cylindrique (22 ; 68) qui est ménagée dans la paroi cylindrique (11, 12 ; 16, 17 ; 49), dans laquelle la partie de couplage (22 ; 68) com-

prend des moyens de couplage (23 ; 69) d'un côté pour un couplage avec les moyens de couplage (24 ; 50 ; 63) de la pièce de couplage (10 ; 15 ; 49), et dans laquelle la partie de couplage (22 ; 68) comprend une partie périphérique plane (25 ; 70) du côté opposé pour un raccordement avec le joint d'étanchéité de la pièce de couplage (10 ; 15 ; 49). 5

9. Combinaison selon la revendication 8, dans laquelle un tuyau de sortie est disposé sur la partie de couplage. 10

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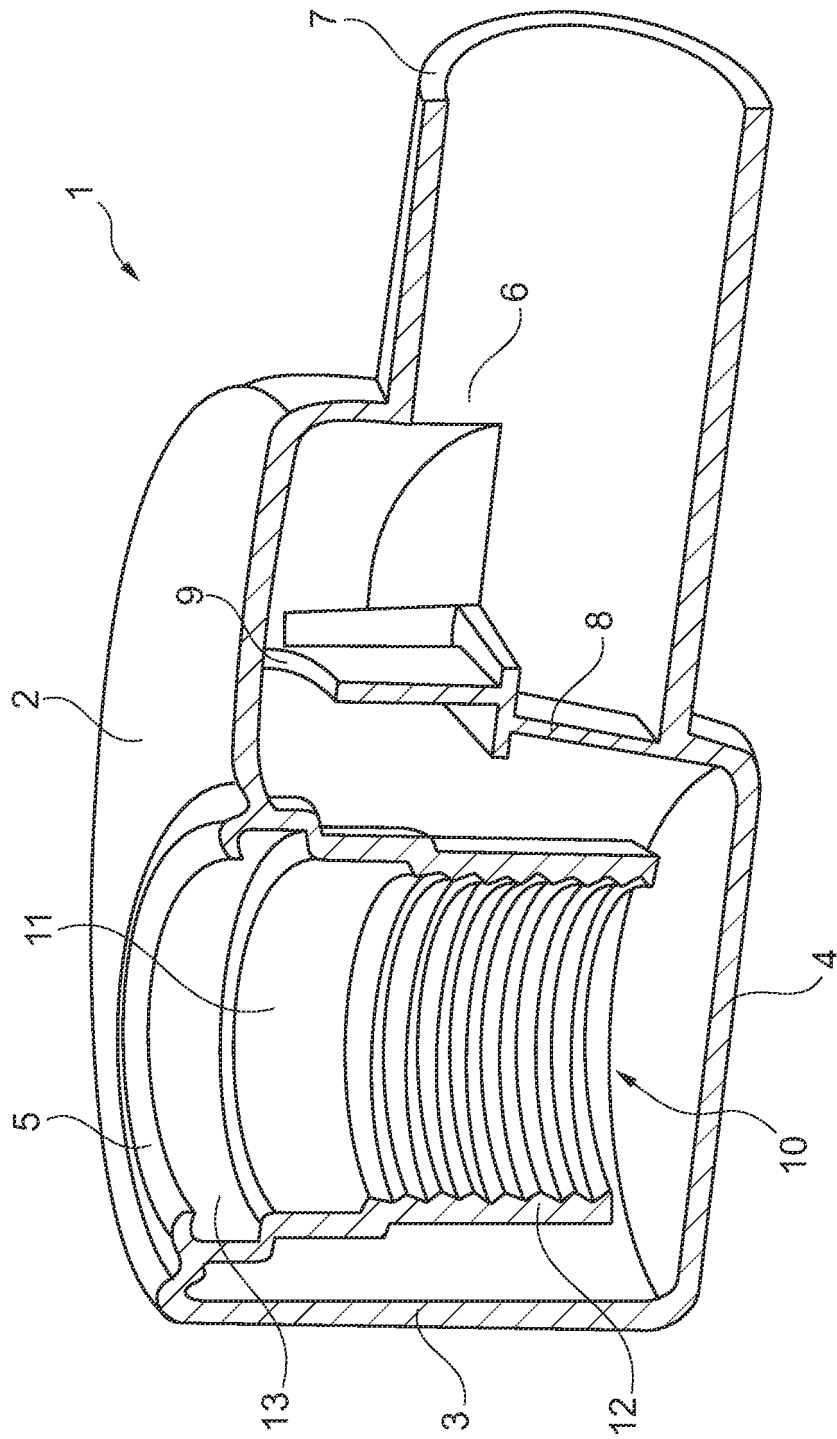


Fig. 1

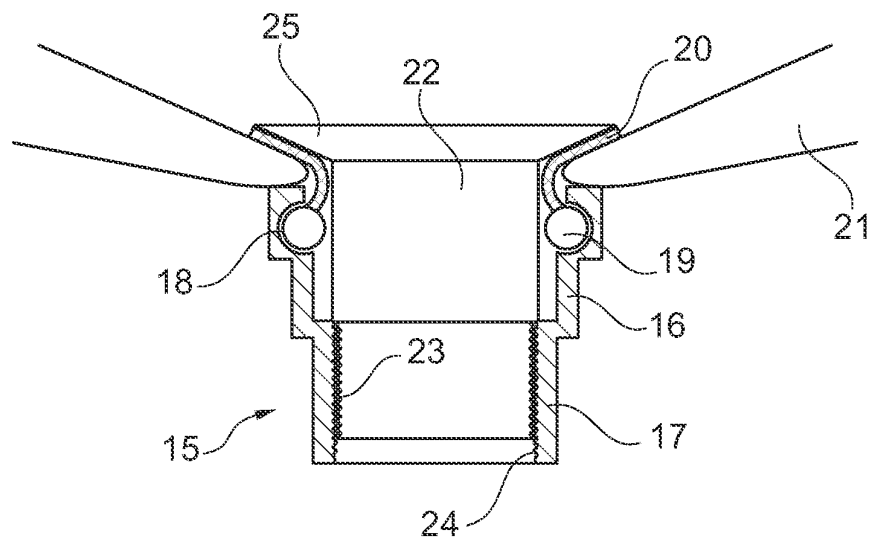


Fig. 2

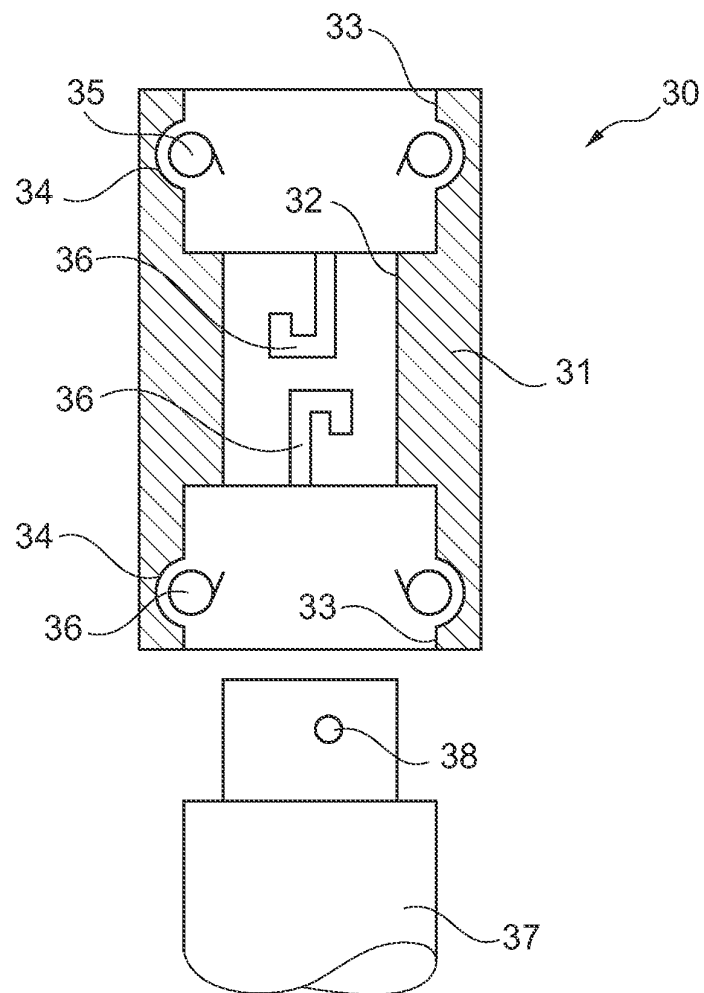


Fig. 3

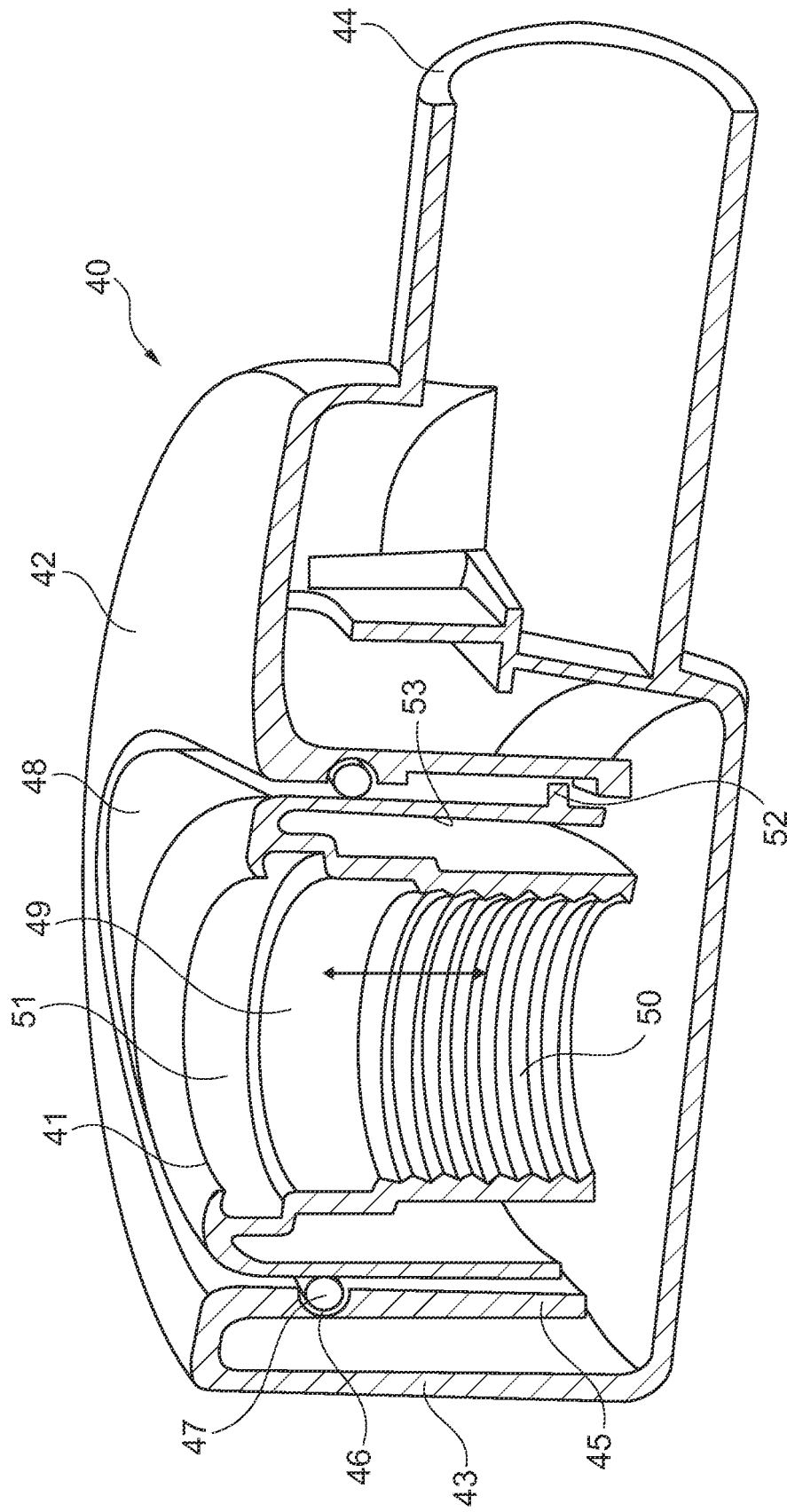


Fig. 4

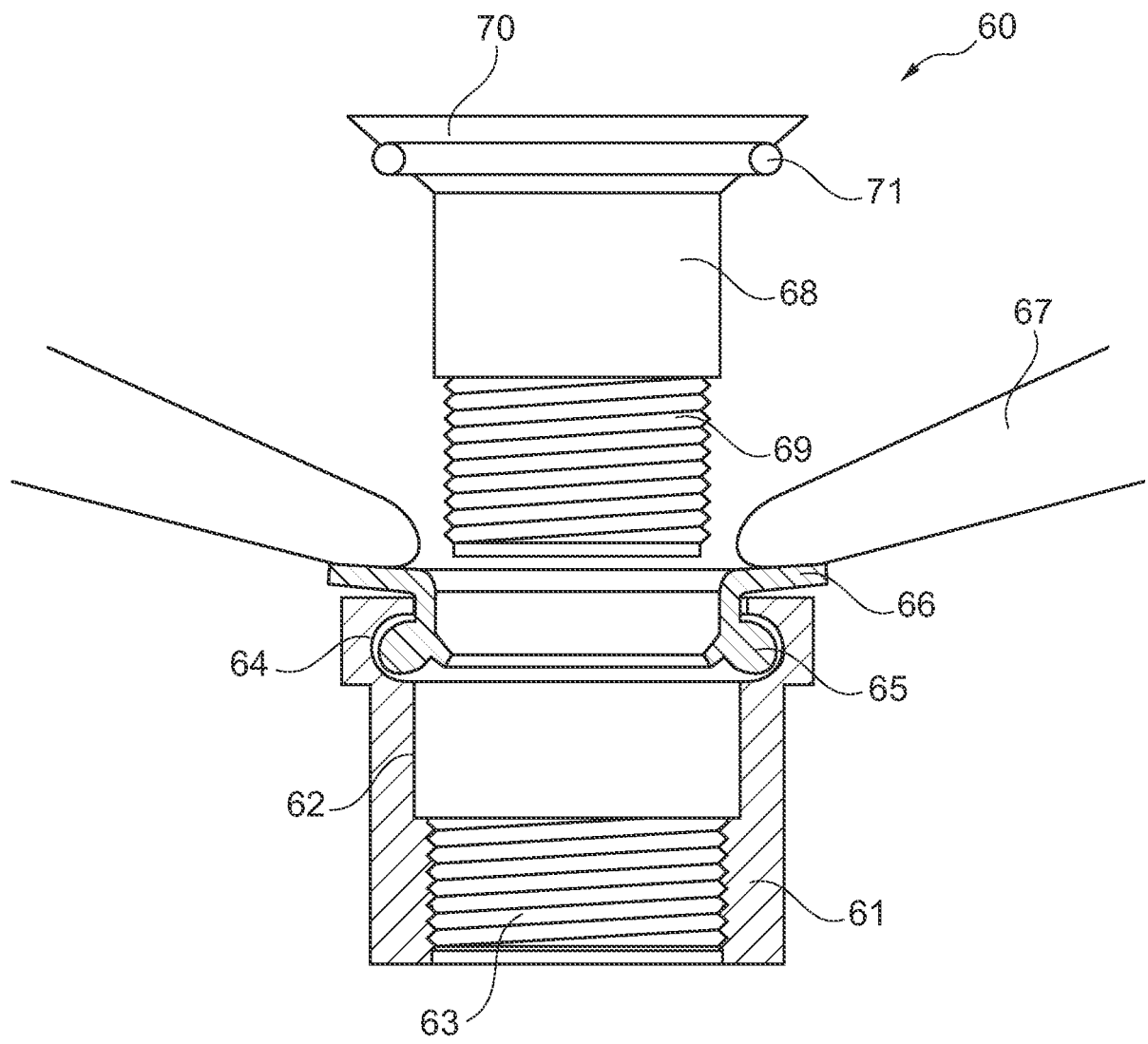


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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