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(54) **SIPHON CONSTRUCTION**

SIPHONKONSTRUKTION

CONSTRUCTION D'UN SIPHON

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Description

[0001] The present invention relates in general to a gutter-shaped siphon construction, suitable to be used in the floor of for instance a bathroom, a shower room, etc., for receiving and draining water. Such gutter-shaped siphon is known in practice. An example of a gutter-shaped siphon is disclosed in WO-2007-004863.

[0002] A gutter-shaped siphon generally has a design as schematically shown in figures 1A and 1B. Figure 1A shows a schematic cross-section of a substantially U-shaped receiving gutter 10, with a bottom 11, walls 12, 13 and two flanges 14, 15 connecting to the upper end of the walls 12, 13 and directed outwards. At its upper side, the gutter is open: the space between the flanges 14, 15 defines an elongate entry opening 16. This gutter may for instance be bent as a whole from a plate, for instance a metal plate, but other embodiments are also possible. The flanges 14, 15 are at the same level as or somewhat lower than the bottom of for instance a shower cabin or shower tray, and can form a whole therewith. The bottom 11 may rest on a floor (not shown), for instance a concrete floor of a bathroom. The total height of the gutter 10 may for instance be about 5-6 cm. The receiving gutter 10 is connected to a drainpipe 20 directed substantially perpendicular to a side wall (the right hand side wall 12 in the figure), which drainpipe 20 may lie substantially horizontally on said floor and connect to drainpipes to a sewer or the like. At the location of the drainpipe 20, the corresponding side wall 12 is provided with a passage 17.

[0003] The function of the receiving gutter 10 is receiving the water that ends up on the bottom of the shower cabin or shower tray during use. Then, the water flows from this bottom via the receiving gutter towards the drainpipe. If there would be no further provisions, the receiving gutter 10 would empty when the supply of water stops, and there would be an open connection between the receiving gutter and the sewer, which will lead to stench annoyance in the bathroom concerned. In order to avoid this, the receiving gutter 10 is provided with a stench valve or stench lock according to the well-known gooseneck principle, assuring that the airway from the sewer to the entry opening 16 of the gutter is always closed by an amount of water. To that end, a collection tray 40 is arranged in the receiving gutter 10, having a closed bottom 41 and closed side walls 42, 43, 44, 45. The collection tray 40 may be open at its upper side, as shown, and has an opening 47 in a side wall 42 communicating with the drainpipe 20. In the example shown, the bottom 41 of the collecting tray 40 coincides with a part of the bottom 11 of the receiving gutter 10 and said side wall 42 of the collecting tray 40 coincides with a part of the side wall 12 of the receiving gutter 10. A cap 60 is arranged over the collecting tray 40, having a closed ceiling 61 and closed side walls 62, 63, 64. The lower edge of the side walls 62, 63, 64 of the cap 60, at least the highest point thereof, is at a lower level than the upper

edge of the side walls 42, 43, 44, 45 of the collecting tray 40, at least the lowest point thereof.

[0004] During use, water flows from the receiving gutter 10 under the cap 60 into the collecting tray 40, and from there towards the drainpipe 20. When the water supply stops, a layer of water W remains standing in the receiving gutter 10, of which, as shown in the figures, the height under normal circumstances is determined by the upper edge of the side walls 42, 43, 44, 45 of the collecting tray 40, at least the lowest point thereof. Air from the sewer via the drain pipe 20 can now not go beyond the space under the cap 60. In order to be able to escape from the receiving gutter, this air should have to pass under the lower edge of the side walls 62, 63, 64 of the cap 60, at least the highest point thereof, but this course is blocked by the water W.

[0005] An important problem in the case of known gutter-shaped siphon designs is cleaning thereof. After some time, all kinds of pollutions collect in the receiving gutter, such as hairs and soap rests, which are difficult to flush away via the receiving tray 40. It is true that it is possible to remove the cap 60, causing the gooseneck-shaped trajectory to be lifted, but still the upstanding side walls of the collecting tray 40 form a barrier. In the case of known gutter designs, it is further a disadvantage that parts are fixedly connected to the bottom 11 of the receiving gutter 10. As a consequence, such gutters must be cleaned by hand.

[0006] An important aim of the present invention is to provide a gutter-shaped siphon design in which the said disadvantages are eliminated or at least reduced without reducing the functionality described.

[0007] Another siphon system within a receiving drain, having the features of the preambles of claim 1 resp. claim 12, is known from EP1571269A. According to an important feature of the present invention, to this end a siphon system according to the present invention has the features of claim 1, and a drain system according to the present invention has the features of claim 12.

[0008] These and other aspects, features and advantages of the present invention will be further clarified by the following description with reference to the drawings, in which same reference numerals indicate same or similar parts, and in which:

figure 1A shows a schematic cross-section of a receiving gutter;
figure 1B shows a schematic longitudinal section of a part of the receiving gutter of figure 1A;
figure 2A shows a horizontal cross-section of a part of a gutter-shaped siphon system according to the present invention;
figure 2B on a larger scale shows a schematic cross-section of some parts of said siphon system;
figure 2C shows a cross-section comparable to figure 1A of a receiving gutter provided with a siphon system according to the present invention;
figure 3 shows a schematic transparent perspective

bottom view of a preferred embodiment of the siphon system according to the present invention;
figure 4 shows a schematic perspective view of a cap in the siphon system according to the present invention.

[0009] Figure 2A shows a horizontal cross-section of a part of a gutter-shaped siphon system 100 according to the present invention, and figure 2B on a larger scale shows a schematic cross-section of some parts of this siphon system 100, in disassembled condition. A disconnectable collecting tray is indicated by reference numeral 400. The disconnectable collecting tray 400 is connected to a mounting flange 213 associated with the passage opening 17 of the gutter 10. This mounting flange 213 may be fixedly connected to the wall 12 of the gutter 10, but preferably is a part of a pipe coupling piece 200 disconnectably attached to the wall 12, which will be the first to be discussed hereunder.

[0010] The pipe coupling piece 200 comprises a transfer tube segment 210 and a coupling sleeve 230. The transfer tube segment 210 comprises a cylindrical tube part 211 having an outer surface that is provided with an outer threading over at least a part of its length, and is at an entrance end 212 provided with a mounting flange 213 with radial dimensions larger than those of the said outer threading. On its side directed towards the pipe part 211, the mounting flange 213 has a pressing face 214 substantially perpendicular to the central axis of the pipe piece 211. The coupling sleeve 230 comprises a first cylindrical pipe piece 231 and a second cylindrical pipe piece 232, which are arranged aligned with each other and which can be made as a whole. The second cylindrical pipe piece 232 is shown with smaller radial dimensions than the first cylindrical pipe piece 231, the inner diameter of the second cylindrical pipe piece 232 being equal to the inner diameter of the cylindrical pipe piece 211 of the transfer pipe segment 210, which is preferred but not essential. The first cylindrical pipe piece 231 has an inner surface that is provided with an inner threading over at least a part of its length, matching the outer threading of the transfer pipe segment 210. On its end directed away from the second cylindrical pipe piece 232, the first cylindrical pipe piece 231 has an end face 234 substantially perpendicular to the central axis of the pipe piece 231.

[0011] Before use, a receiving gutter 10 is provided with a circular passage opening 17 in a longitudinal wall 12 (see figure 1A), with a diameter slightly larger than the outer diameter of the outer threading of the transfer pipe segment 210. This transfer pipe segment 210 is placed in the receiving gutter 10, and its cylindrical pipe piece 211 is pushed through the passage opening 17 from the inside. Subsequently, at the outside of the receiving gutter 10, the first cylindrical pipe part 231 of the coupling sleeve 230 is screwed onto the cylindrical pipe piece 211 of the transfer pipe segment 210, wherein the wall 12 of the receiving gutter 10 (shown in dotted lines

in figure 2) is clamped between on the one hand the pressing face 214 of the mounting flange 213 of the transfer pipe segment 210 and on the other hand the end face 234 of the first cylindrical pipe part 231 of the coupling sleeve 230.

[0012] In principle, a sufficient sealing will be achieved here with respect to the wall 12 of the receiving gutter 10, it being noted that the water to be drained from a shower tray is not under a high pressure. Preferably however, and as shown, a circular groove 235 is arranged in the said end face 234 for accommodating an O-ring (not shown for sake of simplicity). This O-ring assures an even better water-tight sealing with respect to the outer side of the receiving gutter wall 12. Alternatively, or additionally, such O-ring accommodating groove might also be arranged in the said pressing face 214 of the transfer pipe segment 210.

[0013] Now, the receiving gutter 10 with the pipe coupling piece 200 attached thereto can be mounted on its destined position, and a drain pipe can be connected to the second cylindrical pipe part 232, for instance by gluing. After placing the receiving gutter and for instance a shower tray, or the application of a shower floor or the like, the coupling sleeve 230 is no longer accessible from outside.

[0014] The design described is particularly useful for providing a gutter with a pipe coupling piece with which a drain pipe can be coupled to the gutter. However, there are also other ways to achieve this. For instance, a pipe coupling piece may be glued to the gutter. In the context of the present invention, it is important that a mounting flange 213, extending around the drain opening of the gutter, is present at the inner side of the gutter.

[0015] According to a further aspect of the present invention, the mounting flange 213 has, at its side directed away from the pipe part 211, a coupling face 215 substantially perpendicular to the central axis of the pipe part 211, as well as two substantially vertically directed guide members 216 with a substantially L-shaped cross-section at opposite sides of said coupling face 215. Each guide member 216 has a body part 217 directed substantially perpendicular to the coupling face 215 and, at the end thereof directed away from the coupling face 215, a leg part 218 directed substantially parallel to the coupling face 215, the leg parts 218 being directed towards each other.

[0016] A collecting tray 400 implemented according to this aspect of the present invention preferably has a substantially elongate shape and has a passage opening 407 with a connection flange 410 in one of its longitudinal side walls 402. At its side directed away from the tray 400, the connection flange 410 has a coupling face 415.

[0017] The collecting tray 400 may have a horizontal bottom and vertical walls, but figure 3 illustrates that the tray 400 preferably has a contour of half a circle. The connection flange 410 preferably has vertical side edges, and may as a whole have a square or rectangular contour. The dimensions of this connection flange 410 match

those of the said guide members 216. The collection tray 400 can be mounted by placing its connection flange 410 from the top into the guide members 216 and to move it downwards. A correct vertical position is achieved by a stop. This stop may for instance be formed at the lower end of the guide members 216; then, the collection tray 400 achieves its correct vertical position when the connection flange 410 abuts this stop. This stop may for instance also be formed at the upper end of the connection flange 410, as illustrated by a dotted line 411; then, the collection tray 400 achieves its correct vertical position when a guide member 216 abuts this stop.

[0018] In the correct vertical position (operational position) of the collecting tray 400, its passage opening 407 is aligned with the pipe part 211 of the pipe coupling piece 200, the coupling face 415 of the connection flange 410 of the collecting tray 400 lying flush against the coupling face 215 of the mounting flange 213 of the pipe coupling piece 200. Water reaching the collecting tray 400 thus flows away via the transfer pipe segment 210 and the coupling sleeve 230 towards the sewer. In the case of a good dimensioning of the connection flange 410 and the guide members 216, a sufficient sealing will be achieved in principle between the coupling faces 215 and 415 in this case, it being noted that the water to be drained in the collecting tray is not under a high pressure. Preferably however, and as shown, a circular groove 416 is arranged in the coupling face 415 of the connection flange 410 of the collecting tray 400, for accommodating an O-ring (not shown for sake of simplicity). This O-ring assures an even better water-tight sealing between the coupling faces 215 and 415. Alternatively, such O-ring accommodating groove might also be arranged in the coupling face 215 of the transfer pipe segment 210.

[0019] Figure 4 shows a schematic perspective view of the preferred embodiment of the cap 600 according to the present invention illustrated in figure 3, of which the function is comparable to the cap 60 discussed in the introduction. The cap 600 has a substantially rectangular contour, with an upper wall 601, a front wall 602, a rear wall 603 and side walls 604. The cap 600 is open at its lower side. In its front wall 602, the cap 600 is provided with a substantially recess 610, connected to the lower edge 605 of the front wall 602, and confined by vertical edges 612 and a horizontal upper edge 611. Also the cap 600 is carried by the pipe coupling piece 200. To this end, the mounting flange 213 of the pipe coupling piece 200 has a step-shaped recess 260 adjacent the pressing face 214. This step-shaped recess 260 comprises wall parts 261 directed substantially parallel to the central axis of the pipe coupling piece 200, connecting to the pressing face 214, and a wall 262 directed substantially perpendicular to the central axis of the pipe coupling piece 200, connecting to said wall part 261. The longitudinal dimensions of said wall parts 261 correspond to the thickness of the front wall 602 of the cap 600, and the mutual distance between said wall parts 261 corresponds to the mutual distance between the edges 612 of the cap recess

610. The cap 600 is placed over the tray 400 with a vertical movement directed downwards, wherein the pipe coupling piece extends through the cap recess 610, and wherein the cap front wall 602 fits closely around the step-shaped recess 260 of the mounting flange 213 and is confined closely between the wall 12 of the gutter 10 and the wall 262 of the mounting flange 213. This fitting is sufficient sealing to counteract escaping air and to thus counteract stench annoyance.

[0020] Before normal use, an ornamental grille (not shown) may be arranged over the gutter 10.

[0021] When it is desired to clean the receiving gutter 10, the possible ornamental grille is removed, and then the cap 600 can be removed by a sliding movement directed upwards. After that, the collecting tray 400 can be removed, also by a sliding movement directed upwards, wherein the mounting flange 410 of the cap slides in the vertical guide members 216. Now, the entire receiving gutter 10 is free, and can easily be flushed clean, wherein dirt parts can flow away with the flushing water directly through the transfer pipe segment 210. After that, the collecting tray 400 and the cap 600 can, after also being flushed clean if desired, be placed again by a sliding movement directed downwards, and after placing the possible ornamental grille the device is again ready for use.

[0022] Thus the present invention provides a gutter-shaped siphon design of which the interior components are completely dismountable in a particularly simple manner to be able to clean the gutter well.

[0023] It is noted that the present invention is particularly applicable in the case of elongate gutter designs, wherein the elongate side walls of the gutter are planar, but, with some obvious modifications, the present invention can also be applied in embodiments where the outer wall of the receiving gutter (or receiving tray) is curved.

[0024] It is further noted that the present invention is also embodied in a siphon system for a receiving gutter (or receiving tray), comprising the collecting tray 400, the cap 600, and the pipe coupling piece 200, which siphon system is indicated by the reference numeral 100. A receiving gutter (or receiving tray) provided with such siphon system 100 is indicated as drain system 700.

[0025] By way of example, it has been mentioned in the above that the receiving gutter 10 may be made of for instance a metal plate. In such case, the wall thickness of the gutter 10 will be some millimetres only. However, it is also possible that the receiving gutter is made from a thicker material, for instance plastic or marble. The length of the cylindrical pipe part 211 provided with threading of the transfer pipe segment 210 is large enough, typically some centimetres, to accommodate such differences in thickness.

[0026] It will be clear for a person skilled in the art that the invention is not limited to the exemplary embodiments discussed in the above, but that several variations and modifications are possible within the protective scope of the invention as defined in the attached claims. Features

which are only described for a certain embodiment can also be applied in other embodiments described, as long as falling within the scope as defined by the claims. Features of different embodiments may be combined to achieve another embodiment, as long as falling within the scope as defined by the claims. Features which have not been explicitly described as being essential may also be omitted.

[0027] It is for instance possible that the collecting tray 400 is provided with vertically directed guide member with a substantially L-shaped cross-section, engaging around the mounting flange 213.

[0028] It is further possible that the upper wall 601 of the cap 600 is provided with venting holes.

Claims

1. Siphon system (100) for mounting in a receiving gutter (10), comprising;
 - a pipe coupling piece (200) comprising a transfer pipe segment (210) with an entrance end (212) and a pipe part (211), wherein the transfer pipe segment (210) at the entrance end (212) is provided with a mounting flange (213) having a coupling face (215) at its side directed away from the pipe part (211);
 - a collecting tray (400) intended for placement in a receiving gutter, with a passage opening (407) formed in one of its side walls (402) and provided with a connection flange (410) having a coupling face (415) at its side directed away from the tray (400);
 - coupling means (216) designed for coupling the connection flange (410) of the collecting tray (400) to the mounting flange (213) of the transfer pipe segment (210), which coupling means (216) allow a vertical displacement of the collecting tray (400) with respect to the mounting flange (213) of the transfer pipe segment (210);
 - and wherein the collecting tray (400) from a disconnected position can be brought, by means of a sliding movement directed downwards, to a position coupled to the mounting flange (213) in which the passage opening (407) communicates with the transfer pipe segment (210) and in which the coupling faces (215, 415) are connected to each other in a substantially water-tight manner;
 - characterized in that** the coupling means (216) comprise two guide members (216) directed substantially vertically and having a substantially L-shaped cross-section.
2. Siphon system according to claim 1, wherein the guide members (216) are arranged at opposite sides of the coupling face (215) of the mounting flange (213) and engage the connecting flange (410) of the collecting tray (400).
3. Siphon system according to claim 1, wherein the

guide members are arranged on opposite sides of the coupling face (415) of the connecting flange (410) of the collecting tray (400) and engage around the mounting flange (213).

4. Siphon system according to claim 2 or 3, wherein a circular groove (416) accommodating a sealing ring is arranged in the coupling face (215) of the mounting flange (213) and/or in the coupling face (415) of the connection flange (410).
5. Siphon system according to any of the previous claims, further comprising a cap (600) to be placed over the collecting tray (400), with an upper wall (601), a front wall (602), a rear wall (603) and side walls (604);
 - wherein the front wall (602) is provided with a substantially rectangular recess (16) bordered by vertical edges (612) and a horizontal upper edge (611);
 - wherein the mounting flange (213) has a step-shaped recess (260) bordering its side directed towards the pipe part (211), corresponding to the dimensions of the rectangular recess (16) in the front wall (602) of the cap (600);
 - wherein the cap (600), by means of a sliding movement directed downwards, can be brought from a decoupled position to a position coupled with the mounting flange (213), in which coupled position the cap (600) extends over the collecting tray (400).
6. Siphon system according to any of the previous claims,
 - wherein an outer surface of the pipe part (211) of the transfer pipe segment (210) is provided with an outer threading over at least a part of its length;
 - and wherein the pipe coupling piece (200) further comprises a coupling sleeve (230) of which a first cylindrical pipe part (231) has an inner surface that, over at least a part of its length, is provided with an inner threading matching the outer threading of the pipe part (211) of the transfer pipe segment (210), and of which a second cylindrical pipe part (232) is designed for connection to a drain pipe (20).
7. Siphon system according to any of the previous claims,
 - wherein the mounting flange (213) has a pressing face (214) at its side directed towards the pipe part (211);
 - wherein the first cylindrical pipe part (231) of the coupling sleeve (230) has an end face (234) at its end directed towards the mounting flange (213);
 - and wherein said pressing face (214) and said end face (234) are designed to clamp a wall (12) of a gutter (10) between them.
8. Siphon system according to claim 5, wherein a circular groove (235) accommodating a sealing ring is

arranged in said pressing face (214) and/or in said end face (234).

9. Drain system (700), comprising a receiving gutter or receiving tray provided with at least one siphon system according to any of the previous claims.

10. Drain system according to claim 9, wherein the gutter has a side wall (12) with an opening (17), wherein the transfer pipe segment (210) extends through the opening (17), wherein the mounting flange (213) abuts the inner surface of the gutter wall (12).

11. Drain system according to claim 10, wherein an outer surface of the pipe part (211) of the transfer pipe segment (210) is provided with an outer threading over at least a part of its length; wherein a coupling sleeve (230) with an inner threading is screwed onto the transfer pipe segment (210), and wherein the mounting flange (213) and the coupling sleeve (230) clamp the wall (12) between them.

12. Drain system, comprising:

a receiving gutter or receiving tray having a side wall (12) with a passage opening (17) and a mounting flange (213) associated with said passage opening (17), wherein said mounting flange (213) has a coupling face (215); and a siphon system (100) for mounting in said receiving gutter or receiving tray; wherein said siphon system comprises:

a collecting tray (400) intended for placement in said receiving gutter or receiving tray, with a passage opening (407) formed in one of its side walls (402) and provided with a connection flange (410) having a coupling face (415) at its side directed away from the tray (400); coupling means (216) designed for coupling the connection flange (410) of the collecting tray (400) to said mounting flange (213), which coupling means (216) allow a vertical displacement of the collecting tray (400) with respect to the mounting flange (213);

wherein the collecting tray (400) from a disconnected position can be brought, by means of a sliding movement directed downwards, to a position coupled to the mounting flange (213) in which said passage openings (407; 17) communicate with each other and in which the coupling faces (215, 415) are connected to each other in a substantially water-tight manner;

characterized in that the coupling means (216) comprise two guide members (216) directed substantially vertically and having a substantial-

ly L-shaped cross-section.

13. Drain system according to claim 12, wherein the guide members (216) are arranged at opposite sides of the coupling face (215) of the mounting flange (213) and engage the connecting flange (410) of the collecting tray (400).

14. Drain system according to claim 12, wherein the guide members are arranged on opposite sides of the coupling face (415) of the connecting flange (410) of the collecting tray (400) and engage around the mounting flange (213).

15. Drain system according to claim 13 or 14, wherein a circular groove (416) accommodating a sealing ring is arranged in the coupling face (215) of the mounting flange (213) and/or in the coupling face (415) of the connection flange (410).

Patentansprüche

1. Siphonsystem (100) zur Montage in einer Aufnahmerinne (10), umfassend;
ein Rohrverbindungsstück (200), das ein Transferrohrsegment (210) mit einem Eingangsende (212) und einem Rohrteil (211) umfasst, wobei das Transferrohrsegment (210) an dem Eingangsende (212) mit einem Montageflansch (213) versehen ist, der an seiner von dem Rohrteil (211) weggerichteten Seite eine Kopplungsfläche (215) aufweist;
eine Sammelchale (400), die zur Anordnung in einer Aufnahmerinne bestimmt ist, mit einer Durchgangsöffnung (407), die in einer ihrer Seitenwände (402) ausgebildet und mit einem Anschlussflansch (410) versehen ist, der eine Kopplungsfläche (415) an seiner von der Schale (400) abgewandten Seite aufweist;
Kopplungsmittel (216), die zum Koppeln des Anschlussflansches (410) der Sammelchale (400) mit dem Montageflansch (213) des Transferrohrsegments (210) ausgelegt sind, wobei die Kopplungsmittel (216) eine vertikale Verschiebung der Sammelchale (400) in Bezug auf den Montageflansch (213) des Transferrohrsegments (210) ermöglichen; und wobei die Sammelchale (400) aus einer abgetrennten Position mittels einer nach unten gerichteten Gleitbewegung in eine mit dem Montageflansch (213) gekoppelte Position gebracht werden kann, in der die Durchgangsöffnung (407) mit dem Transferrohrsegment (210) in Verbindung steht und in der die Kopplungsflächen (215, 415) im Wesentlichen wasserdicht miteinander verbunden sind;
dadurch gekennzeichnet, dass die Kopplungsmittel (216) zwei Führungselemente (216) umfassen, die im Wesentlichen vertikal ausgerichtet sind und einen im Wesentlichen L-förmigen Querschnitt auf-

weisen.

2. Siphonsystem nach Anspruch 1, wobei die Führungselemente (216) an gegenüberliegenden Seiten der Kopplungsfläche (215) des Montageflansches (213) angeordnet sind und in den Anschlussflansch (410) der Sammelchale (400) eingreifen. 5
3. Siphonsystem nach Anspruch 1, wobei die Führungselemente auf gegenüberliegenden Seiten der Kopplungsfläche (415) des Anschlussflansches (410) der Sammelchale (400) angeordnet sind und um den Montageflansch (213) greifen. 10
4. Siphonsystem nach Anspruch 2 oder 3, wobei in der Kopplungsfläche (215) des Montageflansches (213) und/oder in der Kopplungsfläche (415) des Anschlussflansches (410) eine kreisförmige Nut (416) angeordnet ist, die einen Dichtring aufnimmt. 15
5. Siphonsystem nach einem der vorhergehenden Ansprüche, ferner umfassend eine Kappe (600), die über der Sammelchale (400) zu platzieren ist, mit einer oberen Wand (601), einer Vorderwand (602), einer Rückwand (603) und Seitenwänden (604); wobei die Vorderwand (602) mit einer im Wesentlichen rechteckigen Aussparung (16) versehen ist, die durch vertikale Kanten (612) und eine horizontale Oberkante (611) begrenzt ist; wobei der Montageflansch (213) eine stufenförmige Aussparung (260) aufweist, die seine Seite begrenzt, die auf das Rohrteil (211) gerichtet ist, entsprechend den Abmessungen der rechteckigen Aussparung (16) in der Vorderwand (602) der Kappe (600); wobei die Kappe (600) mittels einer nach unten gerichteten Gleitbewegung aus einer entkoppelten Position in eine mit dem Montageflansch (213) gekoppelte Position gebracht werden kann, in der sich die Kappe (600) über die Sammelchale (400) erstreckt. 20 25 30 35 40
6. Siphonsystem nach einem der vorhergehenden Ansprüche, wobei eine Außenfläche des Rohrteils (211) des Transferrohrsegments (210) mit einem Außengewinde über mindestens einen Teil seiner Länge versehen ist; und wobei das Rohrverbindungsstück (200) ferner eine Kopplungsmuffe (230) umfasst, von der ein erster zylindrischer Rohrteil (231) eine Innenfläche aufweist, die über mindestens einen Teil ihrer Länge mit einem Innengewinde versehen ist, das mit dem Außengewinde des Rohrteils (211) des Transferrohrsegments (210) zusammenpasst, und von der ein zweiter zylindrischer Rohrteil (232) zur Verbindung mit einem Abflussrohr (20) ausgebildet ist. 45 50 55
7. Siphonsystem nach einem der vorhergehenden Ansprüche, wobei der Montageflansch (213) an seiner

dem Rohrteil (211) zugewandten Seite eine Pressfläche (214) aufweist;

wobei der erste zylindrische Rohrteil (231) der Kopplungsmuffe (230) an seinem auf den Montageflansch (213) gerichteten Ende eine Stirnfläche (234) aufweist;

und wobei die Pressfläche (214) und die Endfläche (234) dazu ausgelegt sind, eine Wand (12) einer Rinne (10) zwischen sich zu klemmen.

8. Siphonsystem nach Anspruch 5, wobei in der Pressfläche (214) und/oder in der Stirnfläche (234) eine kreisförmige Nut (235) angeordnet ist, die einen Dichtring aufnimmt.

9. Abflusssystem (700), umfassend eine Aufnahmerinne oder Sammelchale, die mit mindestens einem Siphonsystem gemäß einem der vorherigen Ansprüche versehen ist.

10. Abflusssystem nach Anspruch 9, wobei die Rinne eine Seitenwand (12) mit einer Öffnung (17) aufweist, wobei sich das Transferrohrsegment (210) durch die Öffnung (17) erstreckt, wobei der Montageflansch (213) an der Innenfläche der Rinnenwand (12) anliegt.

11. Abflusssystem nach Anspruch 10, wobei eine Außenfläche des Rohrteils (211) des Transferrohrsegments (210) mit einem Außengewinde über mindestens einen Teil seiner Länge versehen ist; wobei eine Kopplungsmuffe (230) mit einem Innengewinde auf das Transferrohrsegment (210) geschraubt ist, und wobei der Montageflansch (213) und die Kopplungsmuffe (230) die Wand (12) zwischen sich klemmen.

12. Abflusssystem, umfassend:

eine Aufnahmerinne oder Aufnahmeschale mit einer Seitenwand (12) mit einer Durchgangsöffnung (17) und einem der Durchgangsöffnung (17) zugeordneten Montageflansch (213), wobei der Montageflansch (213) eine Kopplungsfläche (215) aufweist; und ein Siphonsystem (100) zur Montage in der Aufnahmerinne oder der Aufnahmeschale; wobei das Siphonsystem umfasst:

eine Sammelchale (400), die zum Platzieren in der Aufnahmerinne oder der Aufnahmeschale bestimmt ist, mit einer Durchgangsöffnung (407), die in einer ihrer Seitenwände (402) ausgebildet und mit einem Verbindungsflansch (410) versehen ist, der eine Kopplungsfläche (415) an seiner Seite aufweist, die von der Schale (400) weg gerichtet ist;

Kopplungsmittel (216), die zum Koppeln des Anschlussflansches (410) der Sammelschale (400) mit dem Montageflansch (213) ausgelegt sind, wobei die Kopplungsmittel (216) eine vertikale Verschiebung der Sammelschale (400) in Bezug auf den Montageflansch (213) ermöglichen; wobei die Sammelschale (400) aus einer abgetrennten Position mittels einer nach unten gerichteten Gleitbewegung in eine Position gebracht werden kann, die mit dem Montageflansch (213) gekoppelt ist, in der die Durchgangsöffnungen (407; 17) miteinander in Verbindung stehen und in der die Kopplungsflächen (215, 415) im Wesentlichen wasserdicht miteinander verbunden sind;

dadurch gekennzeichnet, dass die Kopplungsmittel (216) zwei Führungselemente (216) umfassen, die im Wesentlichen vertikal ausgerichtet sind und einen im Wesentlichen L-förmigen Querschnitt aufweisen.

13. Abflusssystem nach Anspruch 12, wobei die Führungselemente (216) an gegenüberliegenden Seiten der Kopplungsfläche (215) des Montageflansches (213) angeordnet sind und in den Anschlussflansch (410) der Sammelschale (400) eingreifen.
14. Abflusssystem nach Anspruch 12, wobei die Führungselemente auf gegenüberliegenden Seiten der Kopplungsfläche (415) des Anschlussflansches (410) der Sammelschale (400) angeordnet sind und um den Montageflansch (213) greifen.
15. Abflusssystem nach Anspruch 13 oder 14, wobei in der Kopplungsfläche (215) des Montageflansches (213) und/oder in der Kopplungsfläche (415) des Anschlussflansches (410) eine kreisförmige Nut (416) angeordnet ist, die einen Dichtring aufnimmt.

Revendications

1. Système de siphon (100) pour monter dans une gouttière de réception (10), comprenant ; une pièce de couplage de tuyau (200) comprenant un segment de tuyau de transfert (210) avec une extrémité d'entrée (212) et une partie de tuyau (211), dans lequel le segment de tuyau de transfert (210) au niveau de l'extrémité d'entrée (212) est pourvu d'un rebord de montage (213) comportant une face de couplage (215) de son côté dirigé à l'opposé de la partie de tuyau (211) ; un bac de collecte (400) destiné à être placé dans une gouttière de réception, avec une ouverture de passage (407) formée dans l'une de ses parois de côté (402) et pourvu d'un rebord de liaison (410)

ayant une face de couplage (415) de son côté dirigé à l'opposé du bac (400) ;

des moyens de couplage (216) conçus pour coupler le rebord de liaison (410) du bac de collecte (400) au rebord de montage (213) du segment de tuyau de transfert (210), lesquels moyens de couplage (216) permettent un déplacement vertical du bac de collecte (400) par rapport au rebord de montage (213) du segment de tuyau de transfert (210) ;

et dans lequel le bac de collecte (400) depuis un position déconnectée peut être amené, au moyen d'un mouvement coulissant dirigé vers le bas, vers une position couplée au rebord de montage (213) dans laquelle l'ouverture de passage (407) communique avec le segment de tuyau de transfert (210) et dans laquelle les faces de couplage (215, 415) sont connectées ensemble d'une manière sensiblement étanche à l'eau ;

caractérisé en ce que les moyens de couplage (216) comprennent deux éléments de guidage (216) dirigés sensiblement verticalement et ayant une section transversale sensiblement en forme de L.

2. Système de siphon selon la revendication 1, dans lequel les éléments de couplage (216) sont agencés sur des côtés opposés de la face de couplage (215) du rebord de montage (213) et viennent en prise avec le rebord de liaison (410) du bac de collecte (400).
3. Système de siphon selon la revendication 1, dans lequel les éléments de guidage sont agencés sur des côtés opposés de la face de couplage (415) du rebord de liaison (410) du bac de collecte (400) et viennent en prise autour du rebord de montage (213).
4. Système de siphon selon la revendication 2 ou 3, dans lequel une rainure circulaire (416) logeant une bague d'étanchéité est agencée dans la face de couplage (215) du rebord de montage (213) et/ou dans la face de couplage (415) du rebord de liaison (410).
5. Système de siphon selon l'une quelconque des revendications précédentes, comprenant en outre un couvercle (600) destiné à être placé sur le bac de collecte (400), avec une paroi supérieure (601), une paroi avant (602), une paroi arrière (603) et des parois latérales (604) ; dans lequel la paroi avant (602) est pourvue d'un évidement sensiblement rectangulaire (16) bordé par des bords verticaux (612) et un bord supérieur horizontal (611) ; dans lequel le rebord de montage (213) comporte un évidement en forme de degré (260) bordant son côté dirigé vers la partie de tuyau (211), correspondant aux dimensions de l'évidement rectangulaire (16) dans la paroi avant (602) du couvercle (600) ;

dans lequel le couvercle (600), au moyen d'un mouvement de coulissement dirigé vers le bas, peut être amené depuis une position découplée vers une position couplée au rebord de montage (213), dans lequel la position couplée du couvercle (600) s'étend au-dessus du bac de collecte (400).

6. Système de siphon selon l'une quelconque des revendications précédentes, dans lequel une surface extérieure de la partie de tuyau (211) du segment de tuyau de transfert (210) est pourvue d'un filetage extérieur sur au moins une partie de sa longueur ; et dans lequel la pièce de couplage de tuyau (200) comprend en outre un manchon de couplage (230) dont une première partie de tuyau cylindrique (231) a une surface intérieure qui, sur au moins une partie de sa longueur, est pourvue d'un filetage intérieur s'accouplant avec le filetage extérieur de la partie de tuyau (211) du segment de tuyau de transfert (210), et dont une seconde partie de tuyau cylindrique (232) est conçue pour connexion à un tuyau d'évacuation (20).
7. Système de siphon selon l'une quelconque des revendications précédentes, dans lequel le rebord de montage (213) comporte une face de pression (214) au niveau de son côté dirigé vers la partie de tuyau (211) ; dans lequel la première partie de tuyau cylindrique (231) du manchon de couplage (230) a une face d'extrémité (234) à son extrémité dirigée vers le rebord de montage (213) ; et dans lequel ladite face de pression (214) et ladite face d'extrémité (234) sont conçues pour pincer une paroi (12) d'une gouttière (10) entre elles.
8. Système de siphon selon la revendication 5, dans lequel une rainure circulaire (235) logeant une bague d'étanchéité est agencée dans ladite face de pression (214) et/ou dans ladite face d'extrémité (234).
9. Système de drain (700), comprenant une gouttière de réception ou un bac de réception pourvu d'au moins un système de siphon selon l'une quelconque des revendications précédentes.
10. Système de drain selon la revendication 9, dans lequel la gouttière comprend une paroi latérale (12) avec une ouverture (17), dans lequel le segment de tuyau de transfert (210) s'étend à travers l'ouverture (17), dans lequel le rebord de montage (213) vient en butée contre la surface intérieure de la paroi de gouttière (12).
11. Système de drain selon la revendication 10, dans lequel une surface extérieure de la partie de tuyau (211) du segment de tuyau de transfert (210) est pourvue d'un filetage extérieur sur au moins une par-

tie de sa longueur ; dans lequel un manchon de couplage (230) avec un filetage intérieur est vissé sur le segment de tuyau de transfert (210), et dans lequel le rebord de montage (213) et le manchon de couplage (230) pincement la paroi (12) entre eux.

12. Système de drain, comprenant :

une gouttière de réception ou bac de réception ayant une paroi latérale (12) avec une ouverture de passage (17) et un rebord de montage (213) associé à ladite ouverture de passage (17), dans lequel ledit rebord de montage (213) comporte une face de couplage (215) ; et un système de siphon (100) pour monter dans ladite gouttière de réception ou ledit bac de réception ; dans lequel ledit système de siphon comprend :

un bac de collecte (400) destiné à être placé dans ladite gouttière de réception ou ledit bac de réception, avec une ouverture de passage (407) formée dans l'une de ses parois de côté (402) et pourvu d'un rebord de liaison (410) ayant une face de couplage (415) de son côté dirigé à l'opposé du bac (400) ; des moyens de couplage (216) conçus pour coupler le rebord de liaison (410) du bac de collecte (400) audit rebord de montage (213), lesquels moyens de couplage (216) permettent un déplacement vertical du bac de collecte (400) par rapport au rebord de montage (213) ; dans lequel le bac de collecte (400) depuis une position déconnectée peut être amené, au moyen d'un mouvement coulissant dirigé vers le bas, vers une position couplée au rebord de montage (213) dans laquelle lesdites ouvertures de passage (407; 17) communiquent ensemble et dans laquelle les faces de couplage (215, 415) sont connectées ensemble d'une manière sensiblement étanche à l'eau ; **caractérisé en ce que** les moyens de couplage (216) comprennent deux éléments de guidage (216) dirigés sensiblement verticalement et ayant une section transversale sensiblement en forme de L.

13. Système de drain selon la revendication 12, dans lequel les éléments de guidage (216) sont agencés au niveau de bords opposés de la face de couplage (215) du rebord de montage (213) et viennent en prise avec le rebord de liaison (410) du bac de collecte (400).

14. Système de drain selon la revendication 12, dans lequel les éléments de guidage sont agencés sur des côtés opposés de la face de couplage (415) du rebord de liaison (410) du bac de collecte (400) et viennent en prise autour du rebord de montage (213). 5
15. Système de drain selon la revendication 13 ou 14, dans lequel une rainure circulaire (416) logeant une bague d'étanchéité est agencée dans la face de couplage (215) du rebord de montage (213) et/ou dans la face de couplage (415) du rebord de liaison (410). 10

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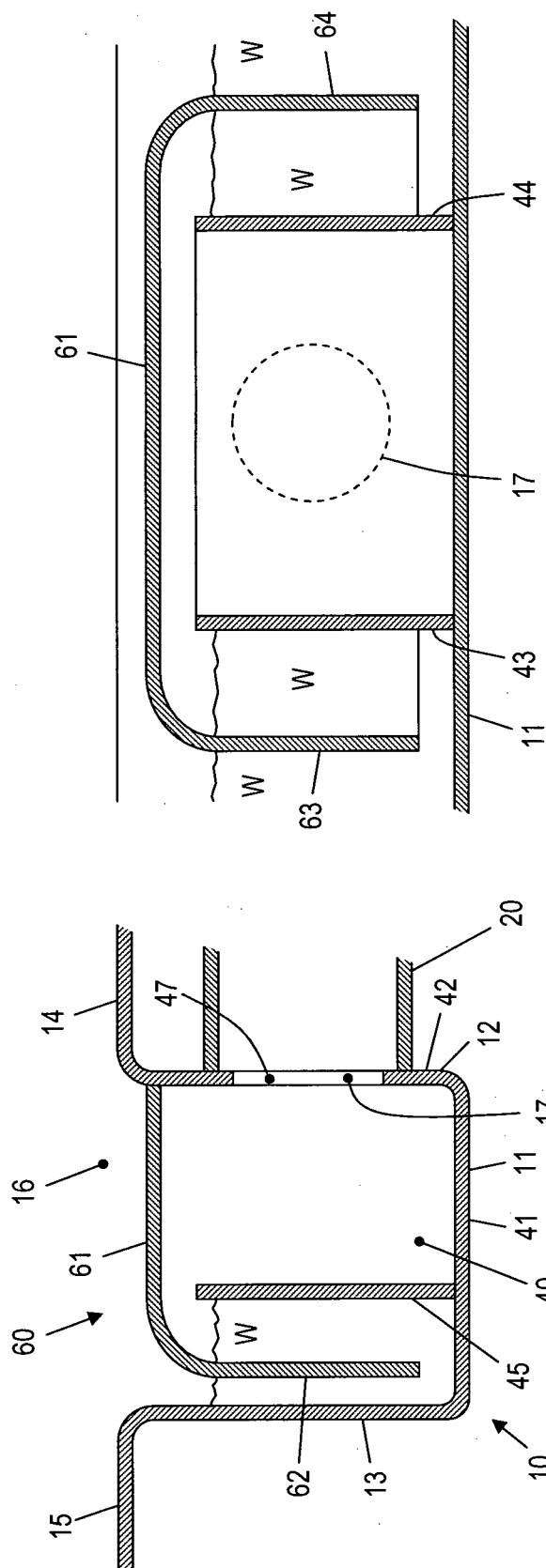


FIG. 1A

FIG. 1B

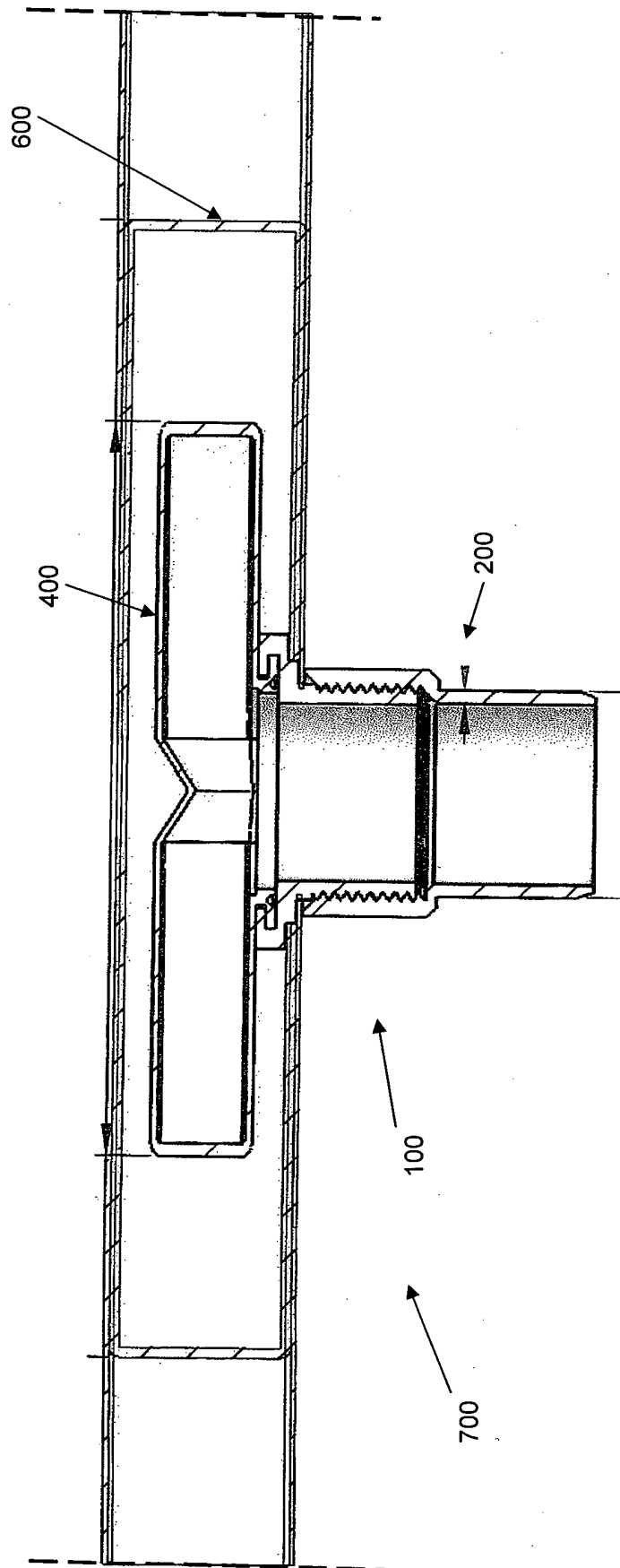


FIG. 2A

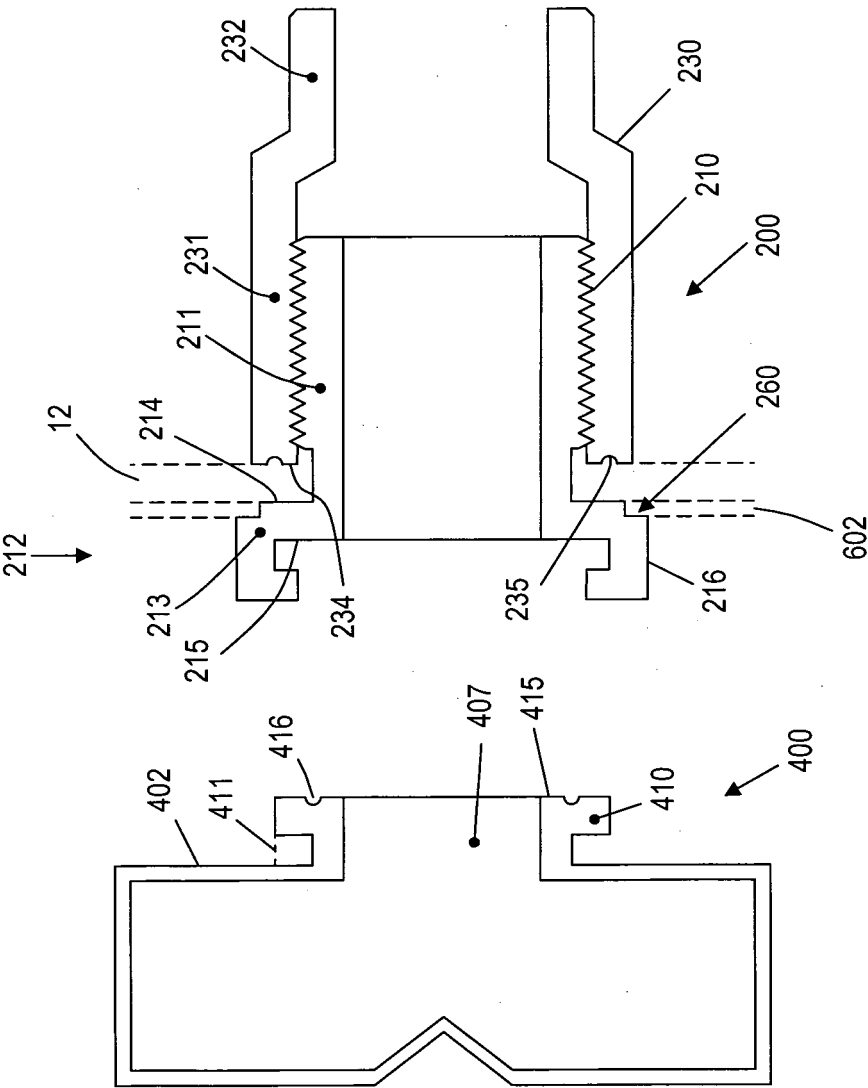


FIG. 2B

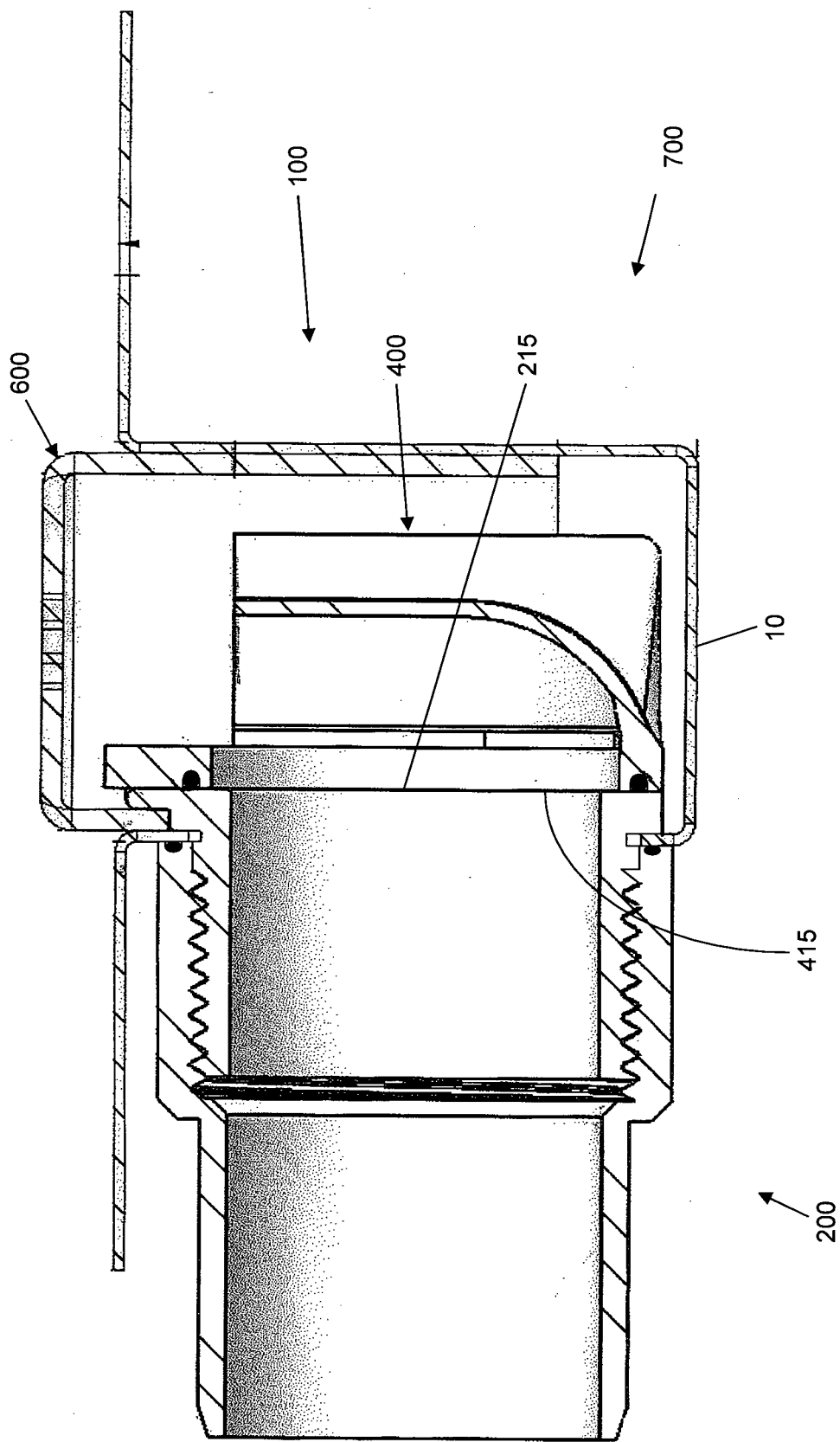


FIG. 2C

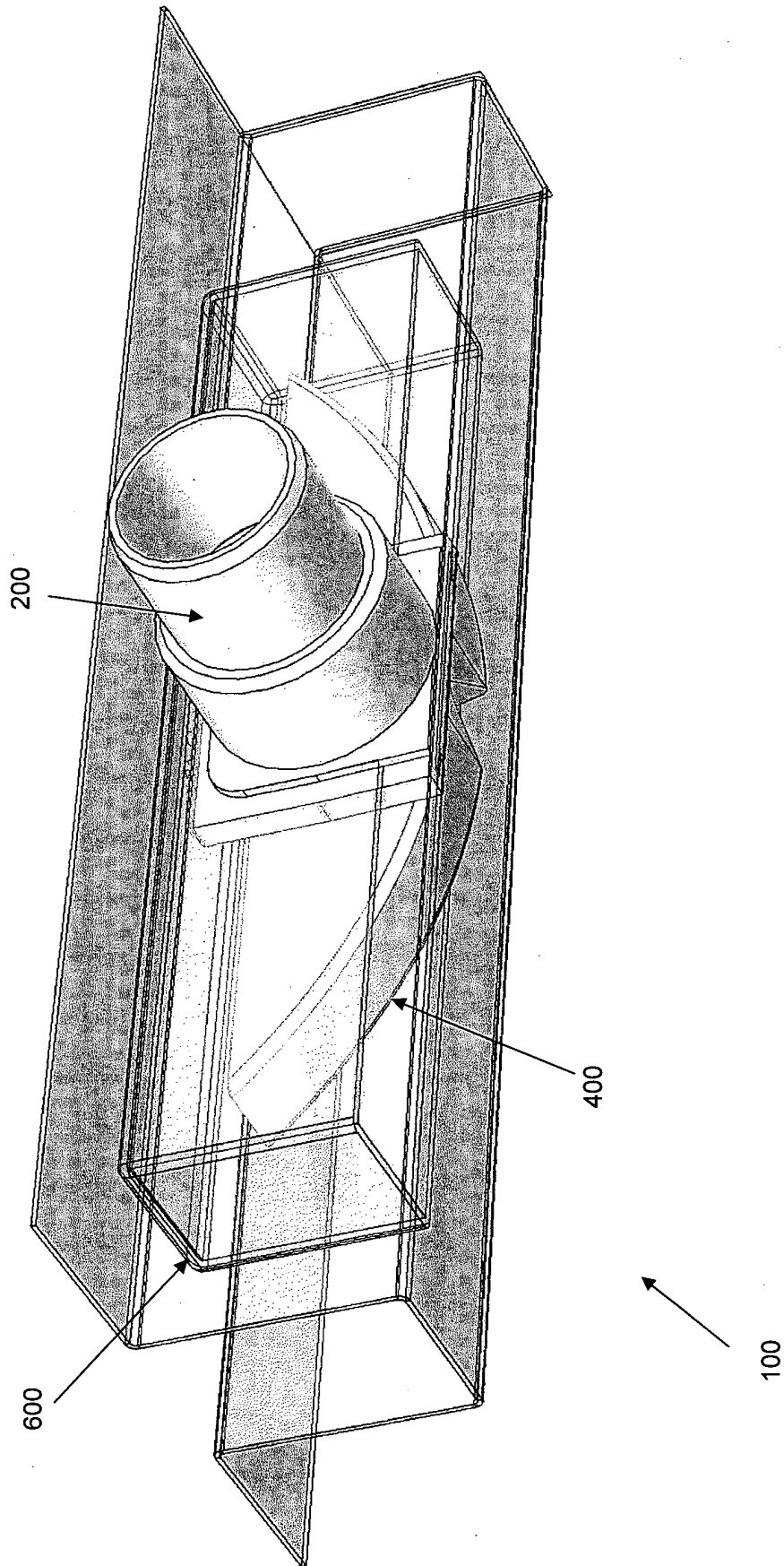
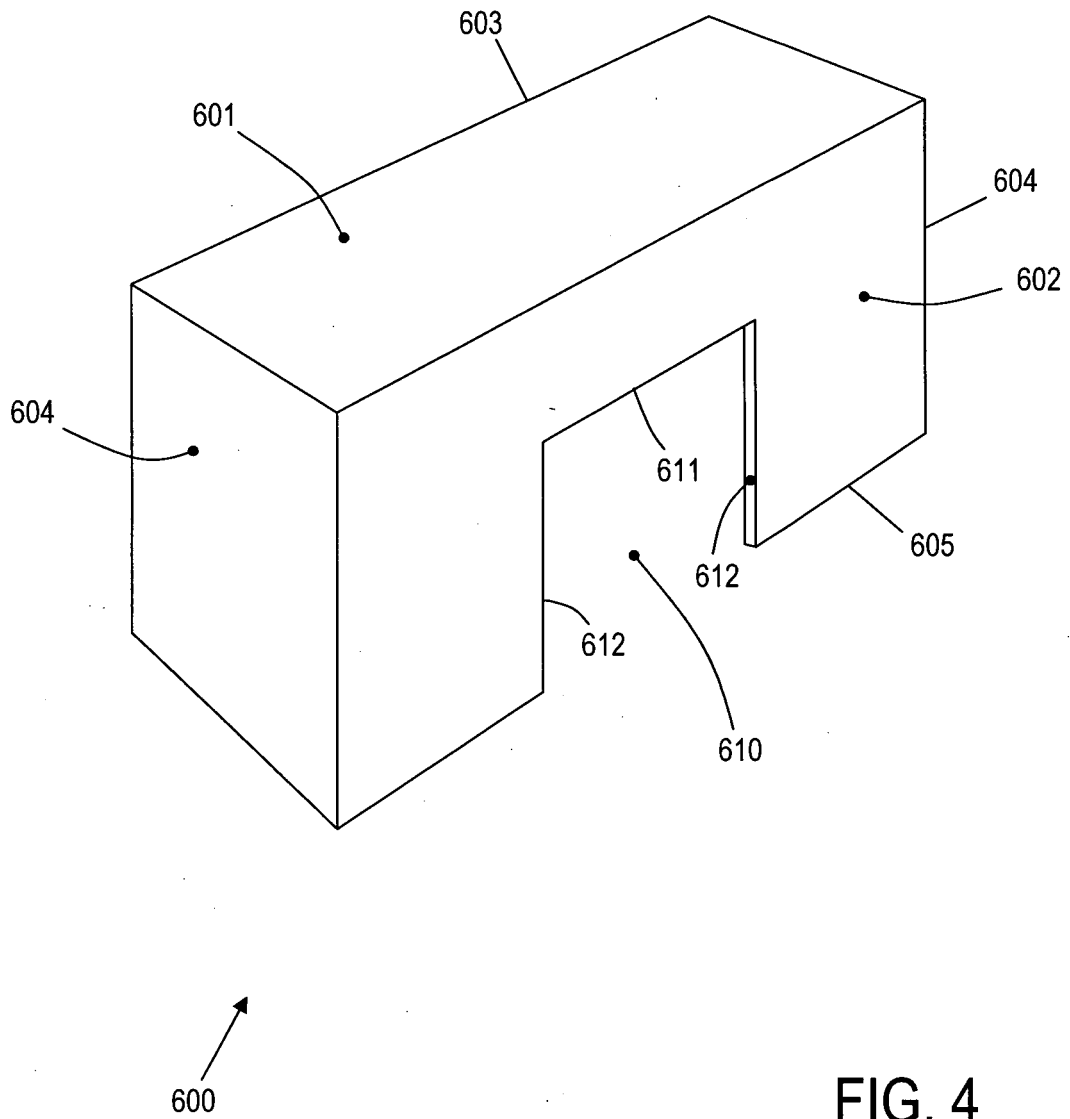


FIG. 3



REFERENCES CITED IN THE DESCRIPTION

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