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(54) **A FLUSHING SYSTEM FOR A TOILET**

(57) A flushing system for a toilet is provided. The flushing system comprises a water cistern (10) with a single water outlet (11) for discharging flushing water enclosed within said cistern (10) into an associated WC bowl. The water cistern (10) is divided into at least two partitions (10a, 10b, 10c) enclosing a primary volume

and a secondary volume respectively. The partitions (10a, 10b, 10c) are in fluid connection with each other by means of at least one non-return valve (15, 15a, 15b) which during a flush allows water to flow from the at least one secondary volume partitions (10b, 10c) into the primary volume partition (10a).

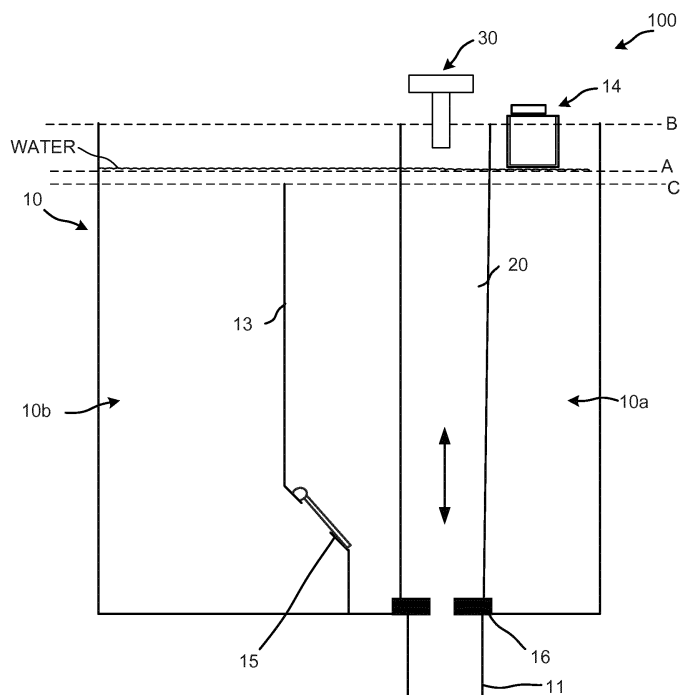


Fig. 1

Description

Technical Field

[0001] The present invention relates to a flushing system for a toilet. More particularly, the present invention relates to a flushing system reducing the waiting time between a first and a subsequent flush.

Background

[0002] Many different types of flushing systems to be used in toilets are available on the market. The flushing system may e.g. be designed to allow flushing water to enter the bowl by gravity by arranging a flushing cistern at a level vertically above a water outlet connected to the WC bowl. In such a system, the flushing cistern contains a certain volume of flushing water, which is at least partially emptied when a user initiates a flush.

[0003] Another type of flush system for toilets is the so-called dual flush toilet, having two actuators for releasing water; one for a small volume flush and one for a large volume flush. The small volume flush is designed for liquid waste, whereas the large volume flush is designed for solid waste. The main advantage in this design is its ability to save water.

[0004] A common problem associated with prior art flushing systems is that one single flush may not make the toilet sufficiently clean. For example, the flush may have failed to remove everything in the toilet bowl, e.g. leaving residual toilet paper, and there is thus a need for a subsequent re-flush. Another example is the situation when the user, after a first flush, is using a toilet brush in the bowl and subsequently wants to flush away the remains with a second flush. A third example of this problem might occur when a user is visiting a public toilet, where it is common to put toilet paper on the toilet seat before sitting down. The protective toilet seat paper is often put into the toilet bowl after the first flush, thus requiring a second flush to remove the toilet paper that was used as a seat protection.

[0005] A solution to this problem is to simply press the flush button twice. Although such "double flush" method makes it possible to flush the toilet twice, a number of disadvantages will affect the overall flushing operation negatively. The efficiency of the second flush may depend on the waiting time, where poor or no flushing might occur if the user does not wait until the water content inside the water cistern is sufficiently. This "waiting time" varies between different toilets due to the different tank volumes, flush volumes, incoming water pressure and the different water pipe dimensions, thus making it impossible for the user to know how long time he or she needs to wait before making a second successful flush.

[0006] There is thus a need for a flushing system that is fast while still being efficient and reliable.

Summary

[0007] Accordingly, the present invention preferably seeks to mitigate or eliminate one or more of the above-identified deficiencies in the art singly or in any combination and solves at least the above mentioned problems by providing a flushing system with a water cistern divided into at least two partitions enclosing a primary volume and a secondary volume respectively.

[0008] An idea of the present invention is to provide a quick re-flushing system by dividing the water cistern into at least two partitions, wherein the inlet valve is in fluid connection with one of the partitions. Hence one partition will be filled in a fast manner due to its smaller size. The water pressure between the at least two partitions, which will vary during the flush sequence, will open and close a non-return valve between the at least two partitions such that water contained in the other of said at least two partitions also will be discharged into the WC bowl.

[0009] Since the water level in the cistern will define the water pressure, a raised water level will increase the available impact force of the water. If the water level is allowed to rise up to a specific level inside the cistern, the complete bowl will be allowed to be cleaned by the flush. The present invention is thus based on the understanding that a sufficient flush may be realized with a less amount of water, as long as the water level prior to the flush is sufficiently high.

[0010] According to a first aspect, a flushing system for a toilet is provided. The system comprises a water cistern with a single outlet for discharging flushing water enclosed within said cistern, wherein the water cistern is divided into at least two partitions enclosing a primary volume and a secondary volume respectively. The system is characterized in that the partitions are in fluid connection with each other by means of a non-return valve, which during flushing allows water to flow from the secondary volume partition into the primary volume partition.

[0011] The flushing system may further comprise an outlet which is arranged in the primary volume partition.

[0012] The partitions may be separated from each other by means of partition wall, and the non-return valve may comprise a flap sealing off a through hole of said wall. The flap may be hingedly attached to the wall, and it may preferably be formed by a material having a density being higher than the density of water.

[0013] The flushing system may further comprise an inlet valve for filling said water cistern with flushing water, wherein said inlet valve is arranged at the primary volume partition. The flushing system may further comprise an outlet valve for closing the outlet, and wherein said outlet valve is controllable for achieving a large volume flush and a small volume flush.

[0014] According to a further aspect, a toilet is provided. The toilet comprises a flushing system.

Brief Description of the Drawings

[0015] Further objects, features and advantages will appear from the following detailed description, with reference being made to the accompanying drawings, in which:

Fig. 1 is a cross-sectional view of a flushing system according to a first embodiment before a flush has been initiated;

Fig. 2 is a cross-sectional view of a flushing system according to a second embodiment before a flush has been initiated;

Fig. 3 is a cross-sectional view of a flushing system according to a first embodiment directly after a flush has been initiated;

Fig. 4 is a cross-sectional view of a flushing system according to a first embodiment after a full flush;

Fig. 5 is a cross-sectional view of a flushing system according to a second embodiment after a partial flush;

Fig. 6 is a cross-sectional view of a flushing system according to a first embodiment when the water cistern is being filled with water;

Fig. 7 is a cross-sectional view of a flushing system according to a first embodiment when the water cistern is being filled with water up to a certain level;

Fig. 8 is a cross-sectional view of a flushing system according to a second embodiment when the water cistern is being filled with water;

Fig. 9a-b are isometric views of a non-return valve according to an embodiment.

Fig. 10a-c are top views of the geometry of a flushing system according to further embodiments;

Fig. 11a-d are top views of the geometry of a flushing system according to yet further embodiments; and

Figs. 12a-d shows a small volume flush sequence using a flushing system according to an embodiment.

Detailed Description

[0016] The following description focuses on embodiments of the present invention applicable to a flushing system for a toilet.

[0017] In a first embodiment according to Fig. 1, a flushing system 100 for flushing water into a WC bowl of a WC suit is shown. The flushing system 100 is constructed to allow a user of the associated WC suit to flush the toilet after use, and for this purpose the flushing system 100 comprises a water cistern 10 and a flushing mechanism 30. The water cistern 10 is capable of storing water between flushes and is in fluid communication with the WC bowl by means of an outlet 11 being controlled to open by means of the flushing mechanism 30.

[0018] The flushing mechanism 30 is constructed to open and close the outlet 11 when the user operates a flush initiation means, such as a push button arranged

at the flushing mechanism 30. When pressing the flush button, the outlet 11 will be open, i.e. in fluid communication with the water cistern 10, to allow the water enclosed within the water cistern 10 to drain out from the outlet 11 and into the WC bowl (not shown). One example is shown in Fig. 1, in which the flushing mechanism 30 is connected to a hollow overflow pipe 20 sealing the outlet 11 by means of a circular gasket 16. Upon flushing the overflow pipe will raise vertically, whereby water enclosed inside the cistern 10 is allowed to drain through the outlet 11.

[0019] The flushing mechanism 30 is well known in the art and will not be described in further detail herein.

[0020] In a first embodiment according to Fig. 1, the water cistern 10 is divided into two partitions 10a, 10b, enclosing a primary volume and a secondary volume respectively. The partitions 10a, 10b are in fluid connection with each other by means of a flap 15 forming a non-return valve, which during flushing allows water to flow from the secondary volume partition 10b into the primary volume partition 10a and subsequently through the outlet 11. Although some leakage through the flap 15 may occur, the flap 15 substantially prevents water from flowing from the primary volume partition 10a to the secondary volume partition 10b. The partitions 10a, 10b are separated from each other by means of partition wall 13. The flap 15 seals off a through hole of the partition wall 13, wherein the flap is hingedly attached to the wall 13. The flap is preferably made of plastic material having a density being greater than the density of water. Preferably, the plastic material is polyoxymethylene (POM). Detailed views of the flap 15 are shown in Figs. 9a-b.

[0021] The water cistern 10 has a single outlet 11 for discharging flushing water enclosed within the cistern 10. The outlet 11 is arranged at the primary volume partition 10a. The outlet 11 is in fluid communication with the secondary volume of the water cistern 10, i.e. the secondary volume partition 10b by means of the flap 15. Thus, the solitary outlet 11 is used to flush the water out of the water cistern 10.

[0022] The outlet valve 16, formed by the overflow pipe 20 and the gasket 16, is configured to close the outlet 11. The outlet valve 16 may be controllable for achieving a large volume flush and a small volume flush, which for example may be realized by allowing the overflow pipe 20, and hence the outlet valve 16, to move according to different sequences depending on which button of the flushing mechanism 30 is being depressed.

[0023] The flushing system 100 further comprises an inlet valve 14 for filling the water cistern 10 with flushing water. The inlet valve 14, which may be a float controlled fill valve, is arranged at the primary volume partition 10a such that water flowing out from the inlet valve 14 is flowing into the primary partition 10a.

[0024] When a user has flushed the toilet, leaving the primary volume partition 10a and the secondary volume partition 10b substantially empty, the inlet valve 14 will open and start to refill the water cistern 10. Due to the

location of the inlet valve 14 the primary volume partition 10a will first start to fill, leading to an increased water level in the primary volume partition 10a. As the water level inside the primary volume partition 10a will rise much faster than if there was only one partition in the cistern 10, a second flush shortly after the first flush will flush out the water of the primary volume partition 10a. For example, if the primary partition volume 10a, to which the inlet valve 14 and the outlet 11 is connected, has a volume of 2 litres and the secondary partition volume 10b has a volume of 4 litres, the repeated flush will use up to 2 litres if the flush is initiated when water is filling up in the primary volume partition 10a only. Hence, the proposed flushing system is a water saving construction since a repeated flush usually doesn't require more water than is generated by a small flush (i.e. normally 2 litres) to clean out the remaining dirt. Now returning to the embodiment shown in Fig. 1, a flushing system 100 filled with water is shown. After a flush the water cistern 10 is continuously filled with water, as will be described according to Fig. 4 and 5, until the water level in the cistern 10 has reached a nominal level A. The nominal level A is vertically below the overflow level B. An intermediate level C is also shown as will be described more in relation to Fig. 7. When the nominal level A is reached, the inlet valve 14 is closed automatically, e.g. by means of the float valve, and the water cistern 10 is considered to be fully filled. As can be seen in Fig. 1, the water level in the primary volume partition 10a is equal to the water level in the secondary volume partition 10b. This is realized by means of the partition wall 13, having a height being close to nominal water level A so that sufficient water pressure is achieved after the intermediate level C is reached. The height of the intermediate level C and the partition wall 13 is approximately 1-3 cm below the nominal water level A. If the water level would rise above the nominal level A up to the overflow level B the water will drain out through the overflow pipe 20, and further into the WC bowl via the outlet 11. This may be the case when the inlet valve 14 for some reason is damaged.

[0025] In other embodiments, the water cistern 10 is divided into three or more partitions, thus enclosing at least three volumes of water inside the water cistern. In Fig. 2 a second embodiment of a flushing system 200 is shown. The flushing system 200 according to this embodiment has essentially the same functions and features as been described above according the first embodiment, with the following exceptions. The water cistern 10 is divided into three partitions 10a, 10b, 10c enclosing a primary volume and two secondary volumes respectively. The partitions 10a, 10b, 10c are separated from each other by means of partition walls 13a, 13b. The three partitions 10a, 10b, 10c are in fluid connection with each other by means of flaps 15a, 15b forming two non-return valves arranged at each partition wall 13a, 13b. The flaps 15a, 15b, when in use and during flushing, allows water to flow from the secondary volume partitions 10b, 10c into the primary volume partition 10a.

[0026] The function of a flushing system 100, 200 will now be described with reference to Figs. 3 to 8. A flushing system 100, after a flush has been initiated, is shown in Fig. 3. When flushing the toilet the outlet valve 16 is opened, whereby water is starting to drain from the primary volume partition 10a out through the outlet valve 16 into the WC bowl (not shown). Thus, the water level in the primary volume partition 10a will decrease. The decrease in water level in the primary volume partition 10a creates a pressure difference between the two partitions 10a, 10b in the water cistern 10, where the pressure is higher in the secondary volume partition 10b due to the higher water level. The higher hydrostatic pressure in the secondary volume partition creates a force that opens the flap 15 by a pushing force, allowing the water from the secondary volume partition 10b to flow out through the outlet 11, via the primary water partition 10a, into the WC bowl. Hence, the flap 15 is opened due to the fact that the pressure difference, i.e. the difference in water level, between the primary volume partition 10a and the secondary volume partition 10b is greater than the weight difference between the flap 15 and the water. The flap 15 remains open until the cistern 10 is emptied.

[0027] During filling of the cistern 10 water will first flow into the primary volume partition 10a, as described already above for allowing for a repeated flush. When the water level inside the primary volume partition 10a reaches level C water will flow from the primary volume partition 10a over the partition wall 13 into the secondary volume partition 10b, as will be described more in relation to Fig. 7. Thus, more or less the whole water cistern 10, i.e. both the primary water volume partition 10a and the secondary water volume partition 10b, will be used simultaneously when flushing out water from a completely filled cistern 10.

[0028] For the flushing system 200 shown in Fig. 2, the decrease in water level in the primary volume partition 10a generates a pressure difference in relation to the two other volume partitions 10b, 10c. The pressure difference creates a force that opens the two flaps 15a, 15b, allowing the water from the secondary volume partitions 10b, 10c to flow out through the outlet 11, via the primary volume partition 10a, into the WC bowl.

[0029] Fig. 4 shows a schematic view of the flushing system 100 directly after a full flush, i.e. when the water level in primary volume partition 10a is below the flap 15. Directly after a full flush, the outlet valve 20 is closed and both the primary volume partition 10a and the secondary volume partition 10b of the water cistern 10 are substantially emptied.

[0030] For the flushing system 200, the same situation is shown in Fig. 5. All three partitions 10a, 10b, 10c are emptied after a full flush and the flaps 15a, 15b are closed.

[0031] Figs. 6 and 7 show schematic views of the flushing system 100 while being filled with water after a full flush. Firstly, the primary volume partition 10a in the water cistern 10 is filled by means of the inlet valve 14 as is shown in Fig. 6. Due to the pressure of the water, and

the difference in density between water and the flap 15, the flap 15 will be closed. Secondly, when the primary volume partition 10a in the water cistern 10 is filled up to an intermediate level C, the water starts to overflow into the secondary volume partition 10b. This is shown in Fig. 7. The intermediate level C should be placed as close to level A as possible to ensure an effective flush. However, the intermediate level C should not be placed too close to level A due to the risk of closing the inlet valve 14 before the secondary volume partition 10b is fully filled. Both the primary volume partition 10a and the secondary volume partition 10b should be at the same nominal level A before closing the inlet valve 14. Thus, the secondary volume partition 10b is filled indirectly by means of the inlet valve 14. The flushing system 100 is then filled with water up to a nominal level A as described according to Fig. 1 before the inlet valve 14 is closed, preferably by means of a float controlled valve functionality.

[0032] Fig. 8 shows filling of the flushing system 200. The water cistern 10 is firstly filled by the inlet valve arranged in the primary volume partition 10a. Secondly, when the primary volume partition 10a is filled up to an intermediate level C, the water starts to overflow into the secondary volume partitions 10b, 10c. As long as there is a difference in water height, the flap 15 remains closed due to the water pressure caused by the height difference. When the same water level is reached, the flap 15 remains closed due to the density difference between the water and the flap 15.

[0033] One embodiment of a flap forming a non-return valve 15 is shown in Figs. 9a-b. Preferably, the flap comprises means for hingedly attaching the flap to the partition wall 13, 23, so that it may be opened or closed. Moreover, the flap may form a housing for enclosing a certain volume of water, thus increasing the weight of the flap. The flap is preferably made of plastic material having a density being greater than the density of water. This is advantageous in that the flap will provide a faster response, thus closing more rapidly. Additionally, the flap may have a sealing surface that is used to seal against the partition wall 13, 23.

[0034] In Fig. 10a-c different embodiments of the width-length ratio of the water cistern 10 is shown from a top view perspective. In Fig. 10a an embodiment of the water cistern 10 is shown, where the primary volume partition 10a is greater than the secondary volume partition 10b. The secondary volume partition 10b has a greater height than width, this width to length ratio increases the speed to which the water level can reach an adjacent level C, thus allowing a quick re-flush. The outlet 11 and the inlet valve 14 are located somewhere in the primary volume partition 10a.

[0035] In Fig. 10b another embodiment of a water cistern where the primary volume partition 10a and the secondary volume partition 10b is of the same size is shown. The outlet 11 and the inlet valve 14 are located somewhere in the primary volume partition 10a.

[0036] In Fig. 10c yet another embodiment of the water

cistern is shown, where the secondary volume partition 10b is greater than the primary volume partition 10a. The outlet 11 and the inlet valve 14 are located somewhere in the primary volume partition 10a. Preferably, the flush volume is the same as the volume of the cistern 10. For example, if the maximum flush volume is 6 liters, the secondary volume partition 10b preferably comprises 4 liters and the primary volume partition 10a preferably comprises 2 liters. Hence, the total volume of the cistern is the same as the flush volume.

[0037] In Fig. 11a-d different embodiments of the geometry of the water cistern 10 are shown from a top view perspective.

[0038] Fig. 11a shows an embodiment of a water cistern 10 in the form of a rectangle with rounded edges, divided into two partitions 10a, 10b enclosing a primary volume and a secondary volume, respectively, by a partition wall 13.

[0039] Fig. 11b shows an embodiment of a water cistern in the form of an ellipse, divided into two partitions 10a, 10b enclosing a primary volume and a secondary volume, respectively, by a partition wall 13.

[0040] Fig. 11c shows an embodiment of a water cistern in the form of a circle, divided into two partitions 10a, 10b enclosing a primary volume and a secondary volume, respectively, by a partition wall 13.

[0041] Fig. 11d shows an embodiment of a water cistern in the form of a circle, divided into two partitions 10a, 10b enclosing a primary volume and a secondary volume, respectively, by a partition wall 13 in form of a rectangle having rounded corners.

[0042] It should be realized that the water cistern 10, the outlet 11 and the inlet valve 14 shown in Fig. 10a-c and 11a-d may be modified in more shapes and relative sizes than the embodiments shown. It should also be understood that these differences in shapes and sizes also applies to flush systems having three or more partitions.

[0043] An example of a calculation according to one embodiment will now be presented. A circular prior art water cistern with a maximum water volume of 6 liter, with a standard inlet valve and a 3 bar pressure would take 37.5 seconds to fill to an efficient flushing height. In this example, the efficient flushing height is set to 30 cm, which is considered as a normal height. Normally 2 liters of water is the minimum flushing volume to give a sufficient flush, so that all the paper and debris are flushed out in order to gain a clean toilet. To fill the same cistern with 2 liters of water would take 12.5 seconds, but would only give a height of 10 cm. With at least two partitions of the water cistern 10 according to an embodiment of the present invention, this time can be greatly reduced. In this example, using a secondary volume partition 10b with a maximum water volume for 4 litres and a primary volume partition 10a with a maximum water volume of 2 liter, respectively, the filling height of 30 cm will be reached in only 12.5 seconds.

[0044] As a further example a quadratic prior art water

cistern with a maximum water volume of 6 liter is used. To fill this cistern with 2 liters of water would take 17 seconds, but would only give a water height of 8 cm. In reality, this water height is not sufficiently high, i.e. not providing enough impact force, to produce a satisfactory flush in order to clean the whole toilet bowl. In this example, when adding a secondary volume partition 10b, the same 2 liter filling will create a water height of 16 cm in the same time. This will lead to an improved flushing performance since the higher water pressure (which corresponds to the water height in the tank) will increase the impact force on the flush. Thus, less water volume is needed to create a satisfactory flush.

[0045] An additional advantage is provided when the flushing system 100, 200 is used in conjunction with siphon based flushing mechanism. Siphon-based flushing mechanisms need a certain height of water level in the cistern to create enough air-pressure inside the siphon to activate the siphonic flushing. When the pressurized air is released, a quick and efficient flush is activated. In prior art solutions, if the water level is too low when the flush is activated, none or insufficient amount of flushing water is used during the flush. Therefore, in the present invention the flushing is blocked up to the time when the water level has reached the nominal water level C. When the water level is above the nominal level C, the blockage is repealed and the re-flush can be made. As would be known to a person skilled in the art, all siphonic flushing devices that use released air as an initiation of a flush must be locked by a blocking means until the water level has reached the nominal water level to ensure that a sufficient flush can be made. Siphonic flushing devices thus require a longer waiting time compared to traditional valves with flap gasket valves since a traditional valve can activate a flush at any time, however sometimes with poor flush results. The present invention is thus suitable for both traditional valves as well as siphonic flushing devices.

[0046] In one embodiment of a siphon-based flushing system, the primary volume partition 10a needs to accommodate a sufficient water volume, e.g. area • height, to be able to generate a sufficient water pressure to initiate the flush. Thus, in a siphon-based flushing system the primary volume partition 10a is greater in volume than the secondary volume partition 10b. In another embodiment, which can be used for all kinds of flap gasket valves, the relation between the primary volume partition 10a and the secondary volume partition 10b can be different - as seen e.g. in Figs. 10a-c and 11 a-d.

[0047] Some comments will also be given for a dual flush system, i.e. a flush system allowing the user to choose between a large volume flush and a small volume flush. Such flushing systems are well-known and their constructional design will not be described in further details herein. However, the proposed flushing system, using a primary volume partition 10a and at least one secondary volume partition 10b, is very well suitable for such dual flush systems, for which the outlet valve 16 is closed

when a predetermined volume of water has been discharged from the cistern 10.

[0048] Turning to Figs. 12a-d, the flushing sequence is shown including the sequence for refilling the cistern 10 after flushing. In Fig. 12a a small volume flush is initiated, whereby the outlet valve will open allowing water inside the primary volume partition 10a to discharge. After a small time, enough to decrease the water level inside the primary volume partition 10a such that the flap 15 is urged to open, water will also be discharged from the second volume partition 10b. The flush will continue by allowing the water level of the primary volume partition 10a and the water level of secondary volume partition 10b to lower at the same speed, as is shown in Fig. 12b. When a certain volume has been discharged, predetermined by e.g. setting a value on a float associated with the outlet valve, the outlet valve will close as is shown in Fig. 12c. When the outlet valve closes, the flap will seal off the partition wall by means of gravity due to higher density of the flap material compared to water. Thereafter filling of the primary volume partition 10a is started, whereby the water level inside the primary volume partition will rise as is shown in Fig. 12d. The flap will close even further, as the increased pressure inside the primary water cistern 10a will press the flap towards the partition wall. Filling is thereby continued in the same manner as previously described, i.e. water continues to fill up until it flows over the partition wall and into the secondary partition volume 10b.

[0049] Although the present invention has been described above with reference to specific embodiments, it is not intended to be limited to the specific form set forth herein. Rather, the invention is limited only by the accompanying claims and, other embodiments than the specific above are equally possible within the scope of these appended claims.

Claims

1. A flushing system for a toilet, comprising a water cistern (10) with a single water outlet (11) for discharging flushing water enclosed within said cistern (10) during a flush into an associated WC bowl, wherein the water cistern (10) is divided into at least two partitions (10a, 10b, 10c) enclosing a primary volume and a secondary volume respectively, said primary volume partition (10a) is provided with said water outlet (11) and configured to be aligned with an associated inlet valve (14) such that the primary volume partition (10b) may be filled with water prior to the secondary volume partition (10b, 10c), **characterized in that** the partitions (10a, 10b, 10c) are in fluid connection with each other by means of at least one non-return valve (15, 15a, 15b) which during a flush allows water to flow from the at least one secondary volume partitions (10b, 10c) into the primary volume partition (10a).

2. The flushing system according to claim 1, wherein the water outlet (11) is arranged in the primary volume partition (10a).
3. The flushing system according to claim 1 or 2, wherein the partitions (10a, 10b, 10c) are separated from each other by means of a partition wall (13), and wherein the non-return valve (15) forms a flap sealing off a through hole of said wall (13). 5
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4. The flushing system according to claim 3, wherein the flap is hingedly attached to the wall (13).
5. The flushing system according to claim 3 or 4, wherein the flap is formed by a material having a density being higher than the density of water. 15
6. The flushing system according to any one of claims 3-5, wherein the partition wall (13) has a height of approximately 1-3 cm below the nominal water level (A). 20
7. The flushing system according to any one of the preceding claims, further comprising an inlet valve (14) for filling said water cistern (10) with flushing water, wherein said inlet valve (14) is arranged to fill the primary volume partition (10a) prior to filling the at least one secondary volume partition (10b, 10c). 25
8. The flushing system according to claim 7, wherein the inlet valve (14) is a float valve. 30
9. The flushing system according to any one of the preceding claims, further comprising an outlet valve (16) for closing the water outlet (11), and wherein said outlet valve (16) is controllable by means of a flush device for achieving a large volume flush and a small volume flush. 35
10. The flushing system according to claim 9, wherein said outlet valve (16) comprises an overflow pipe (20). 40
11. A toilet, comprising a flushing system according to any one of the preceding claims. 45

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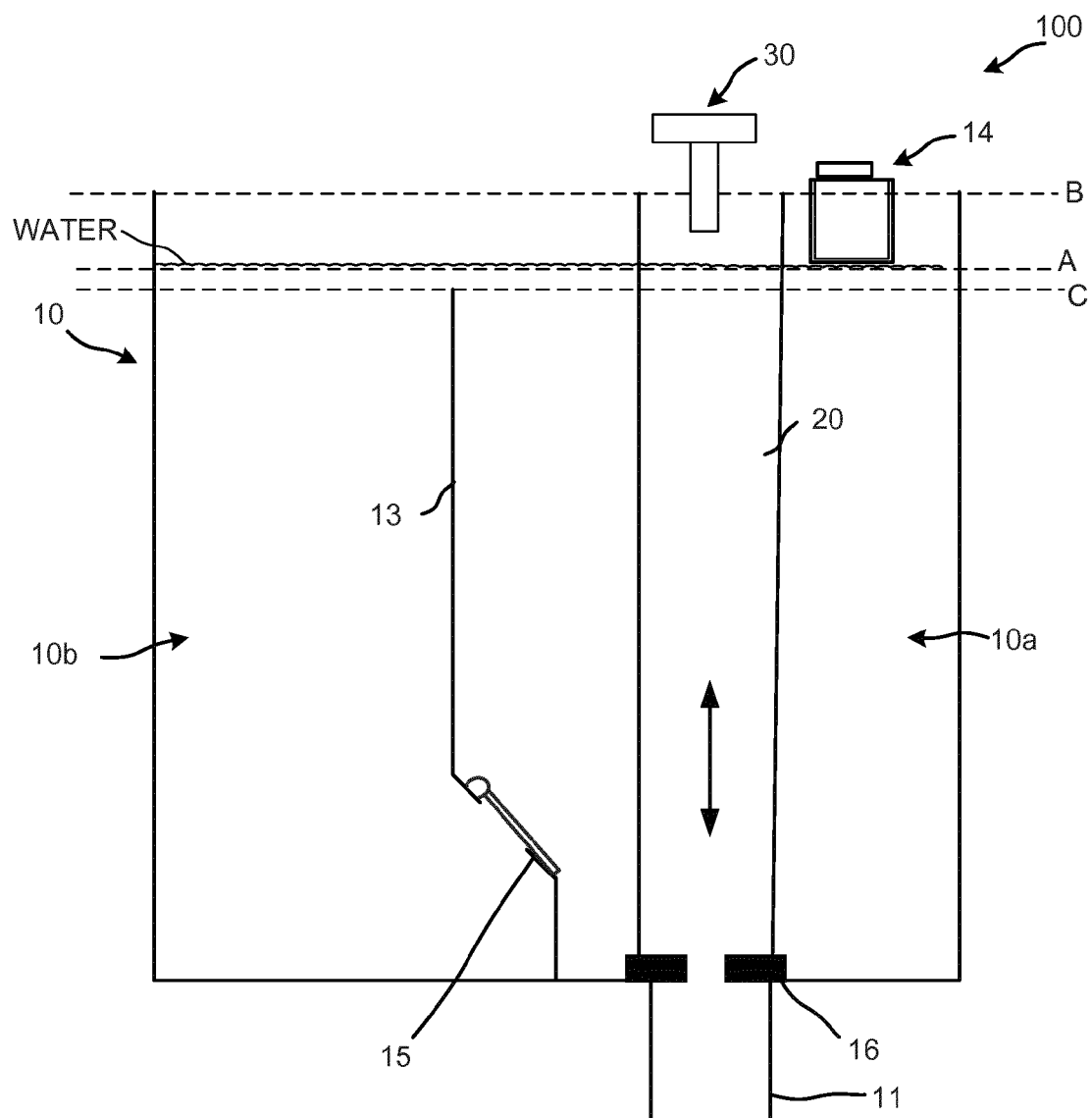


Fig. 1

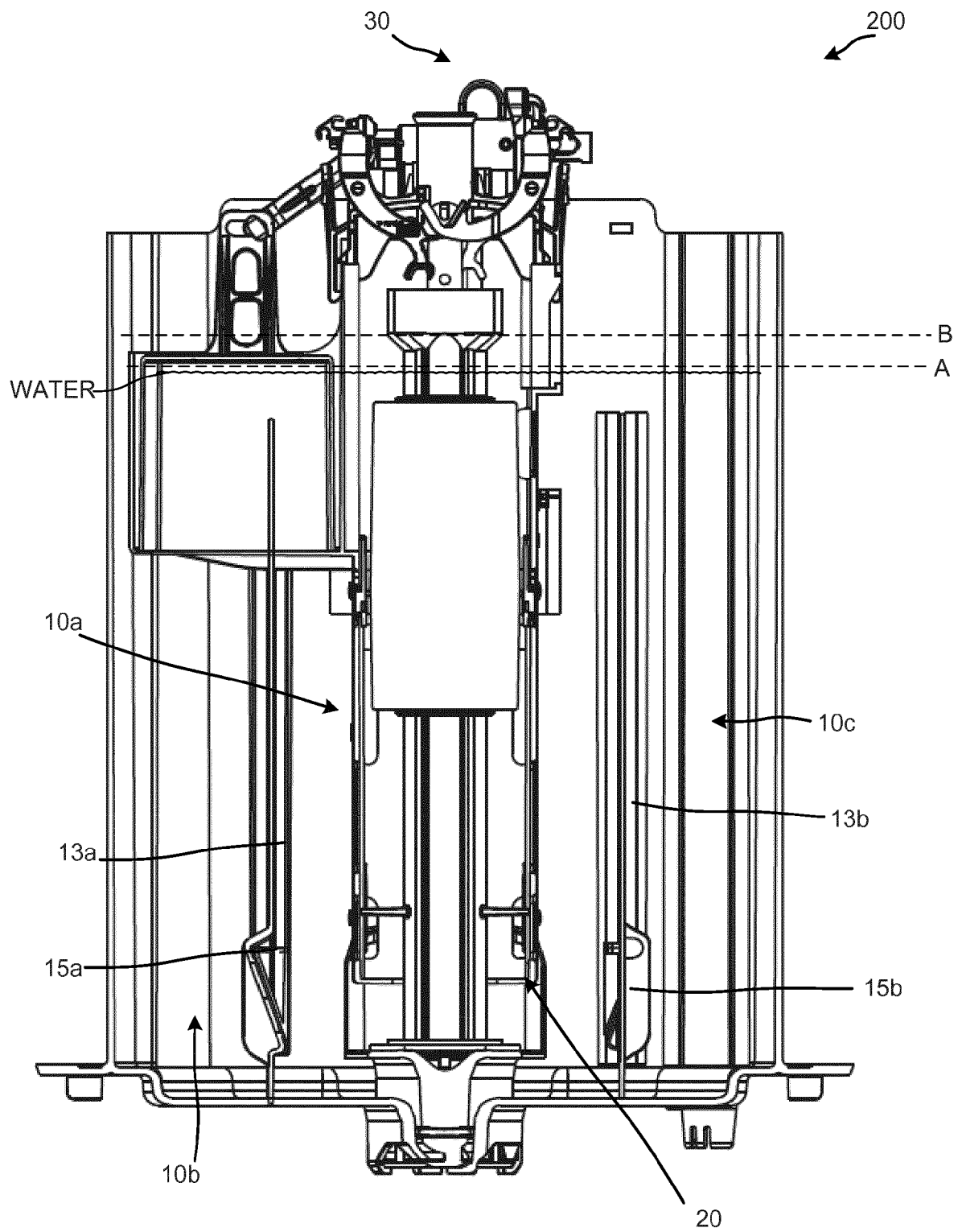


Fig. 2

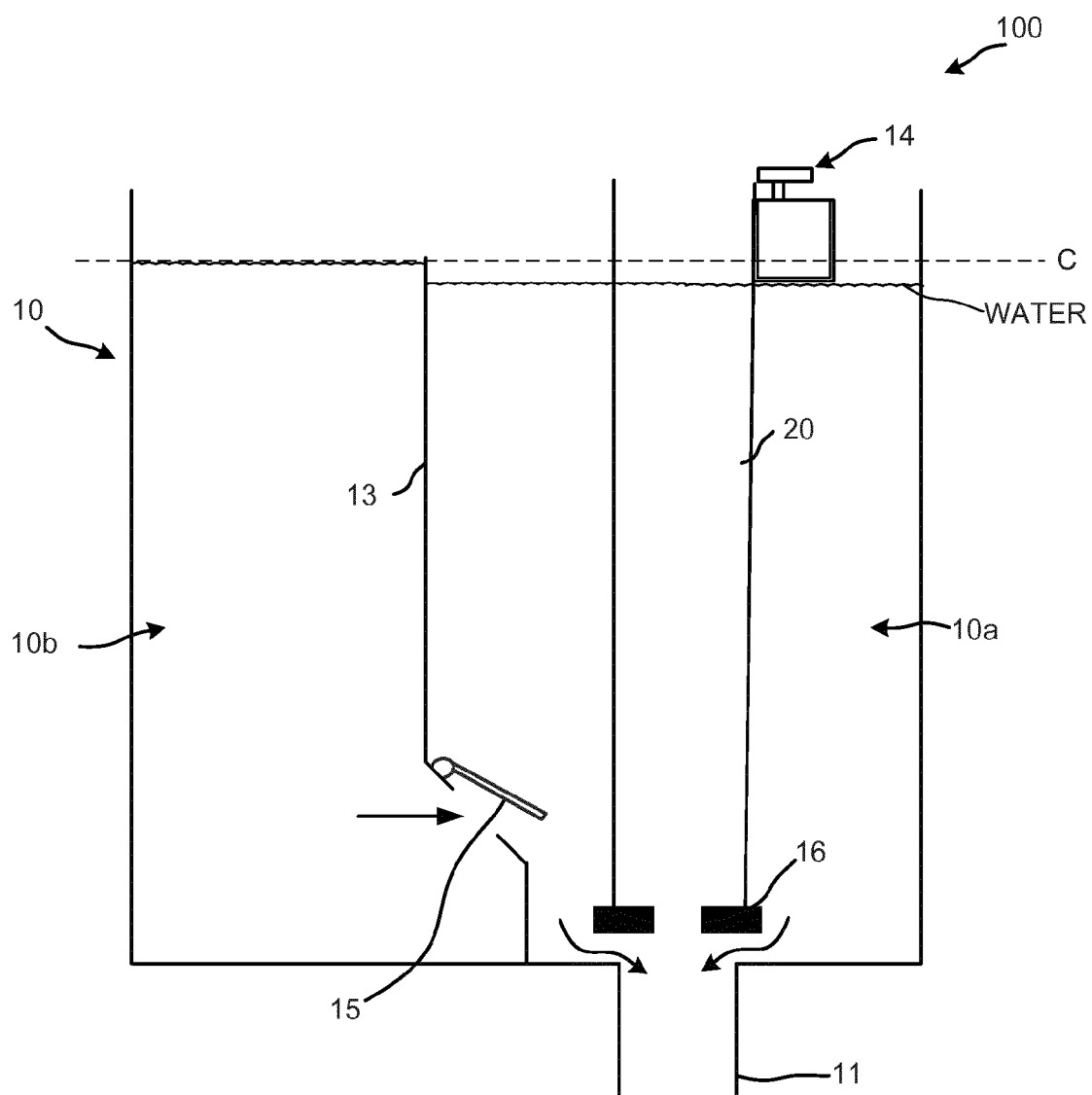


Fig. 3

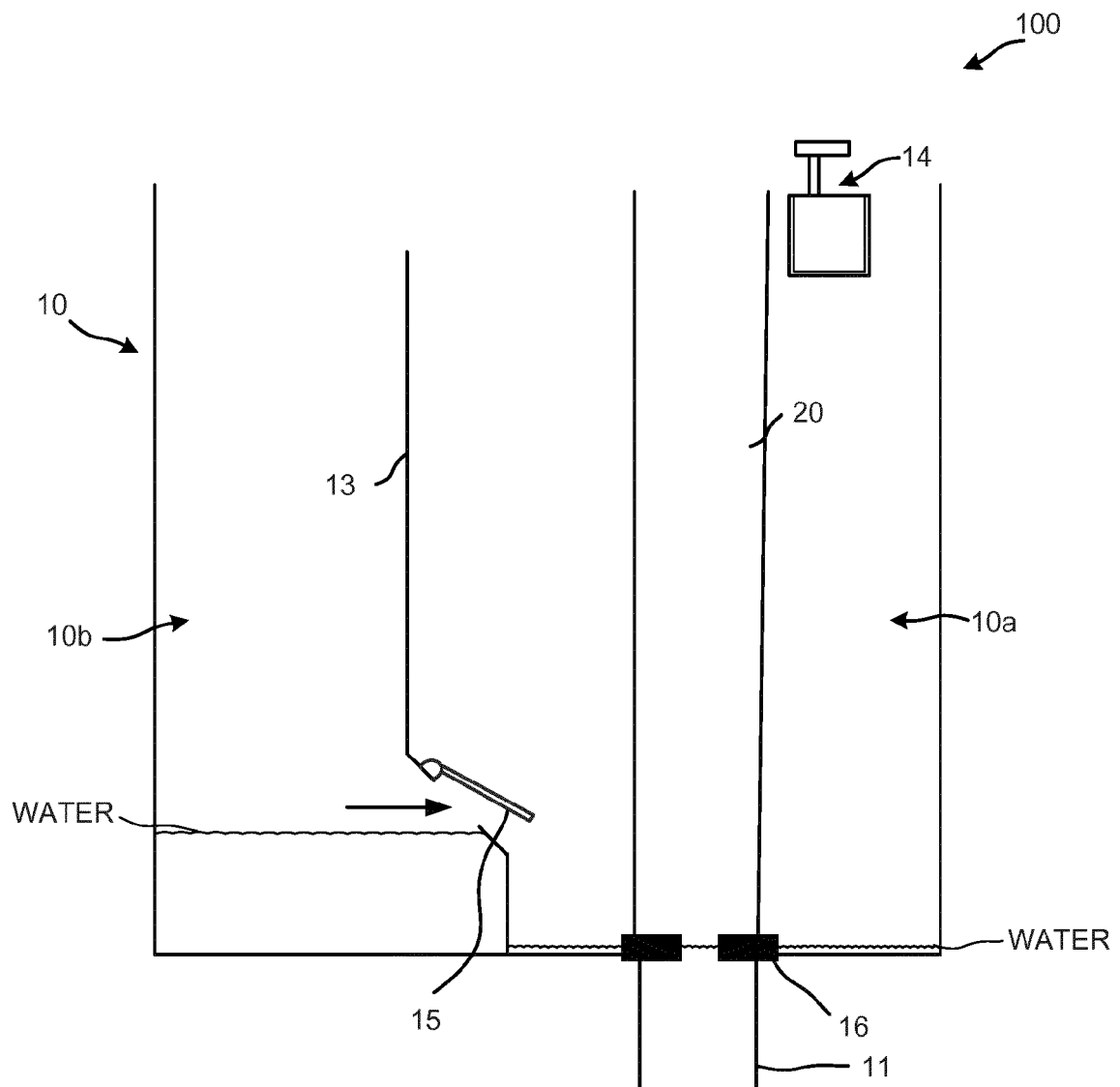


Fig. 4

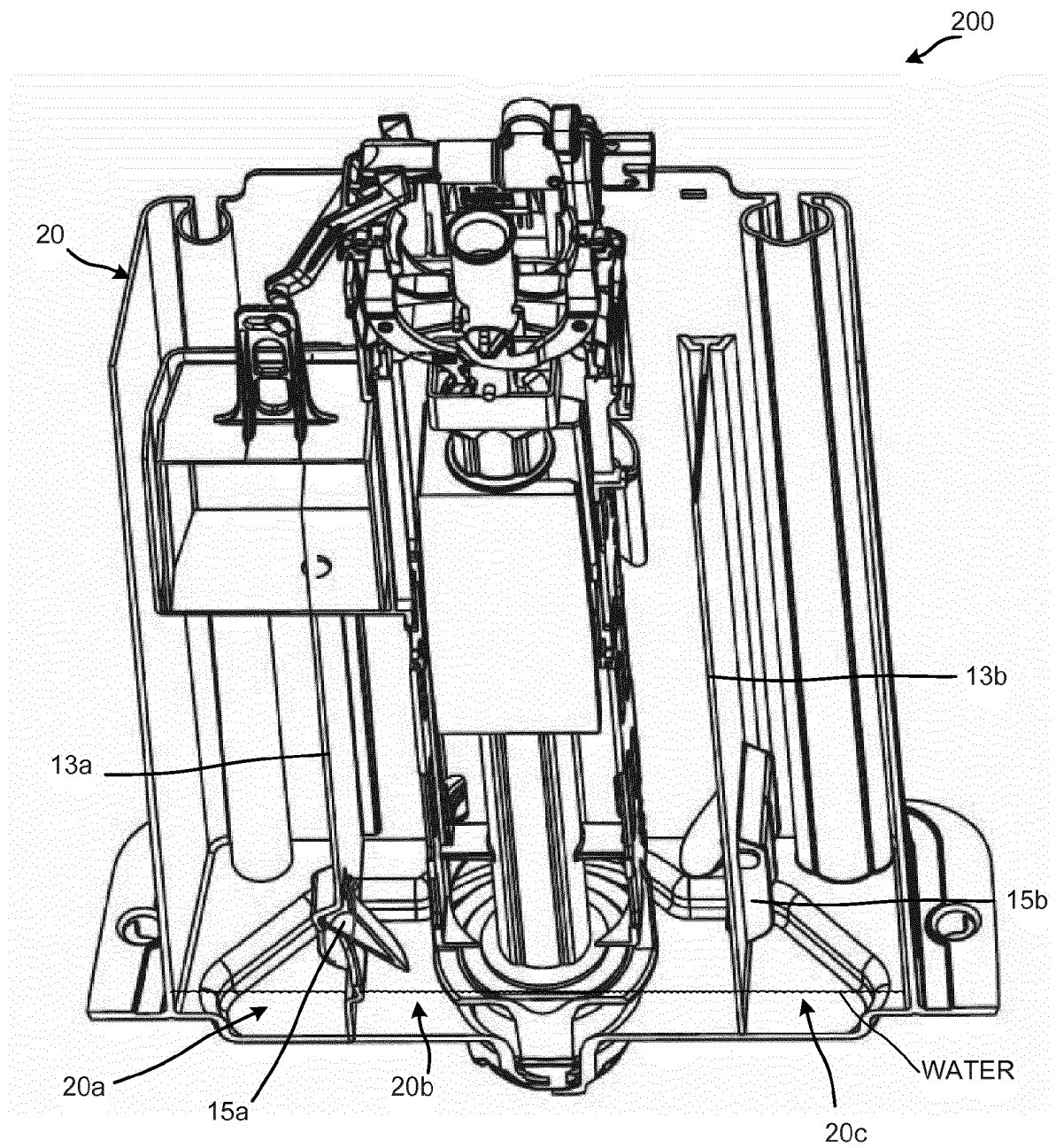


Fig. 5

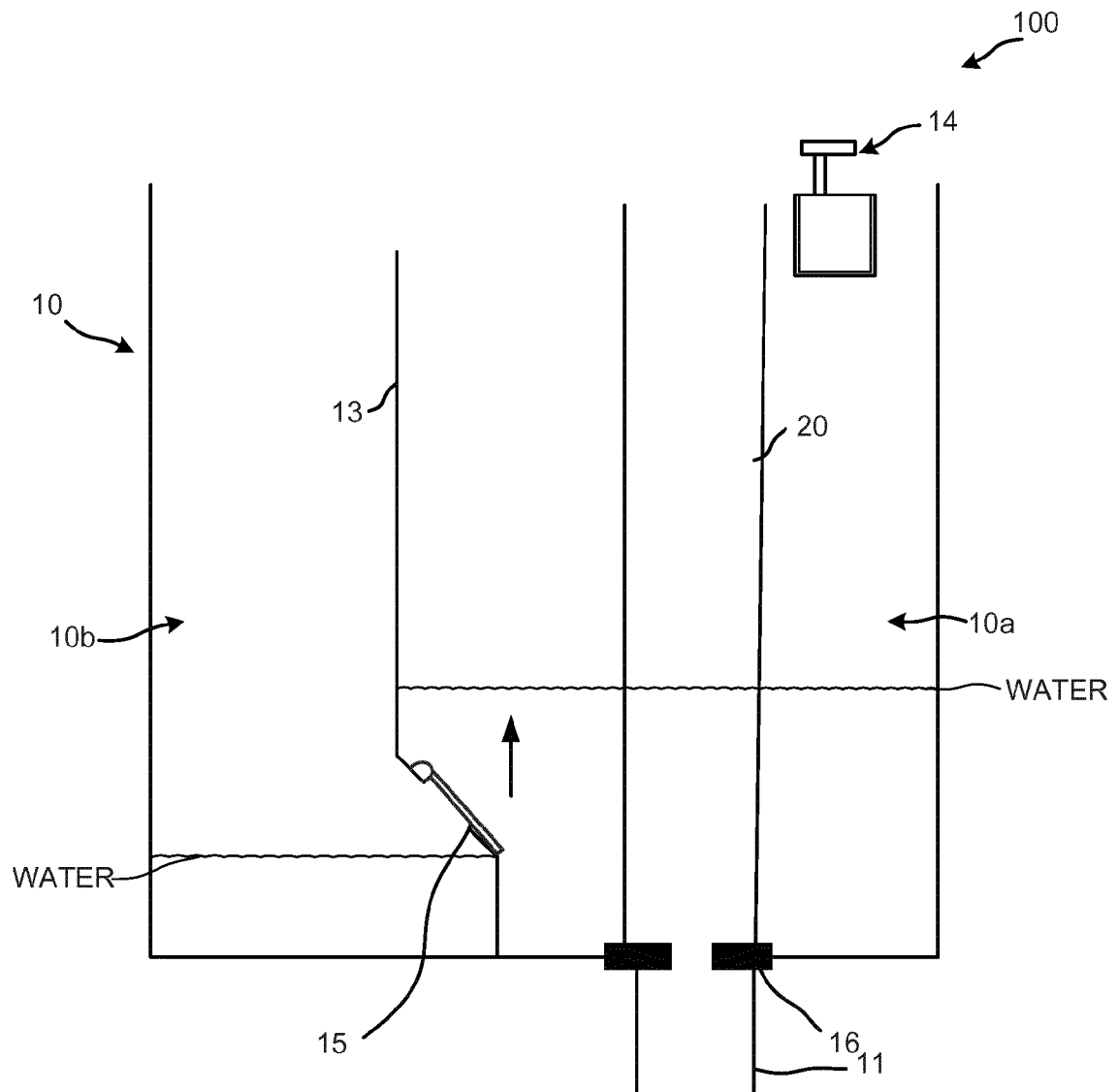


Fig. 6

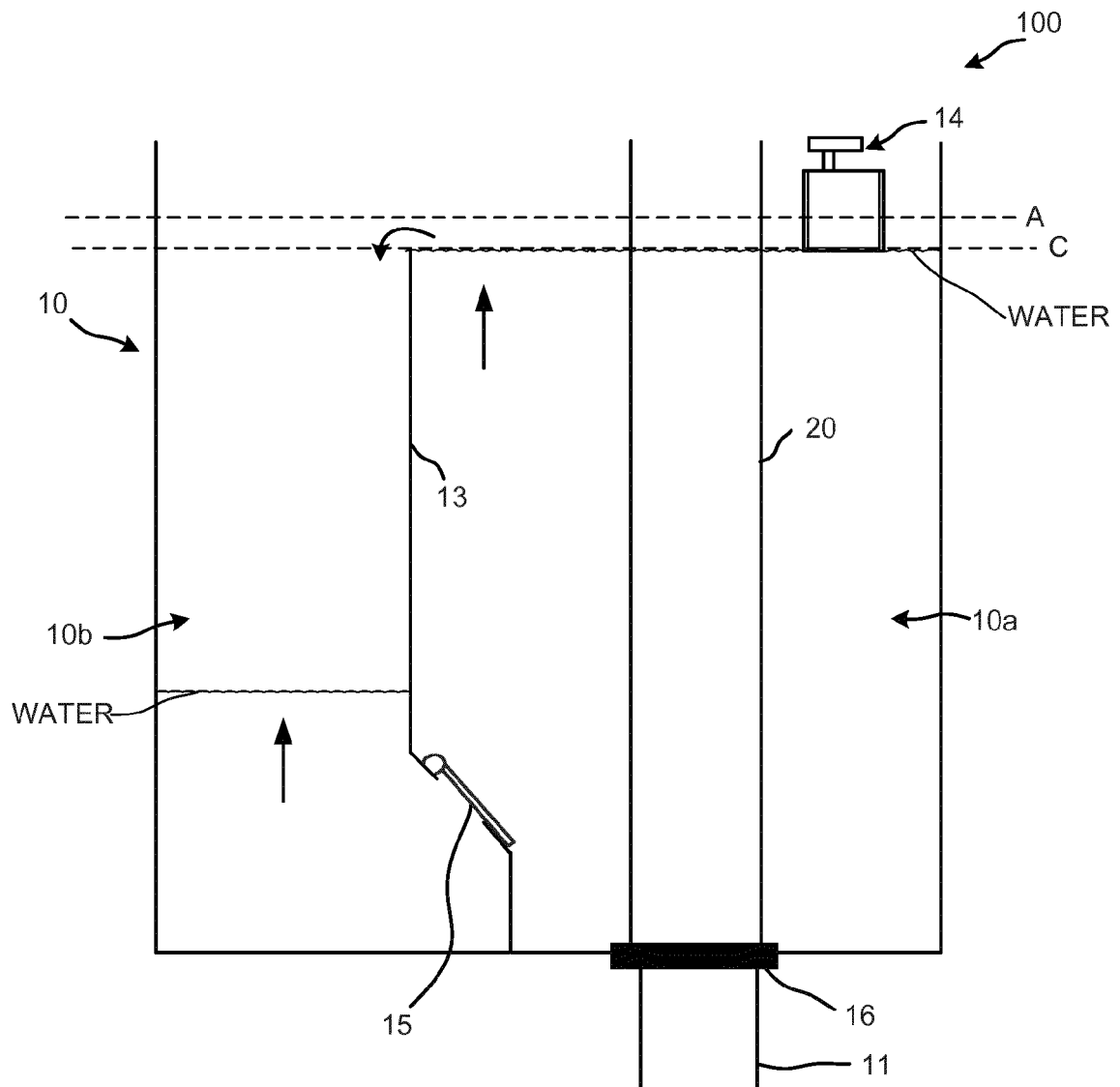


Fig. 7

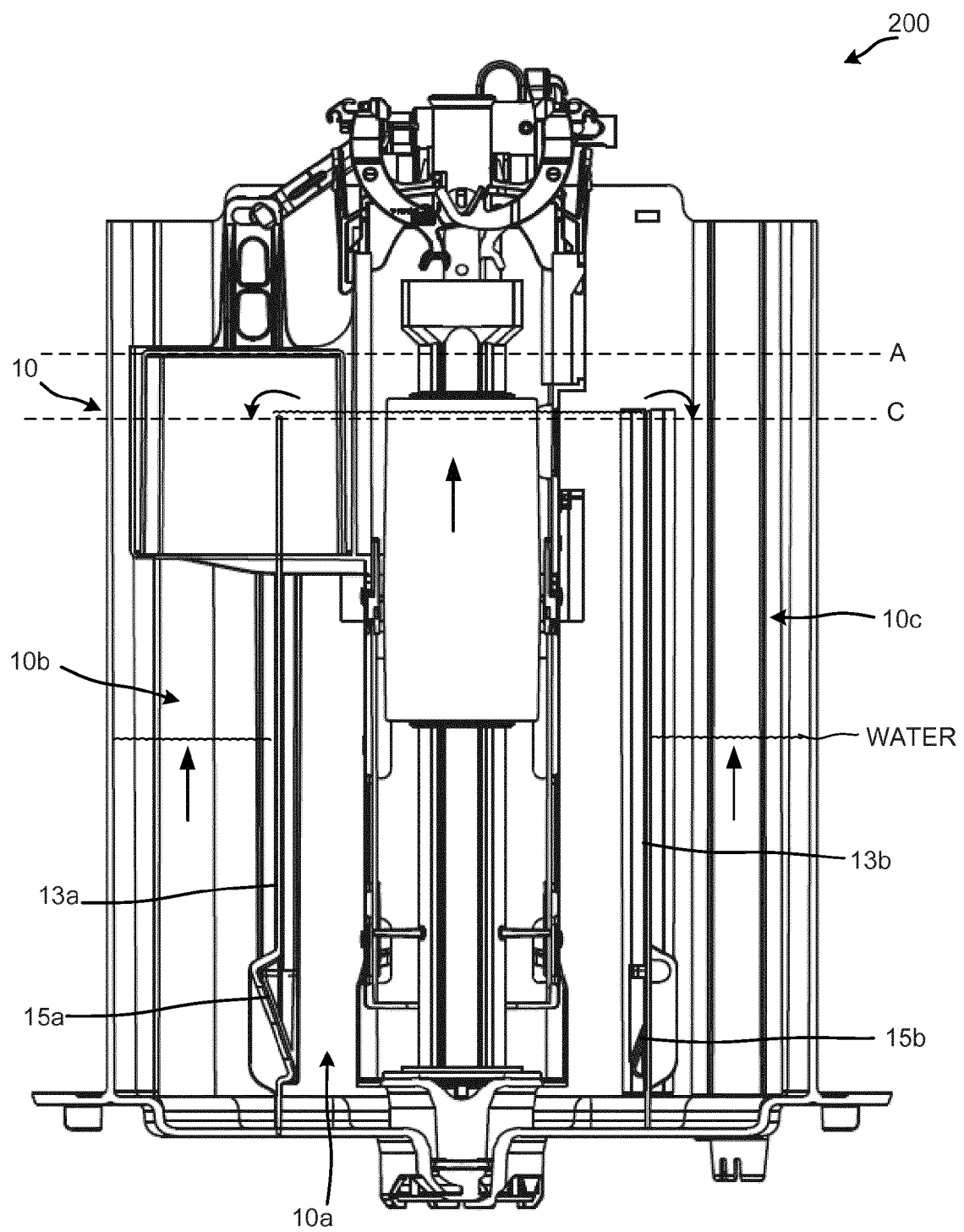


Fig. 8

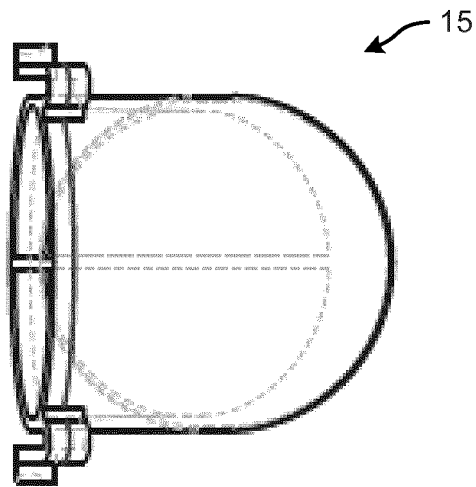


Fig. 9a

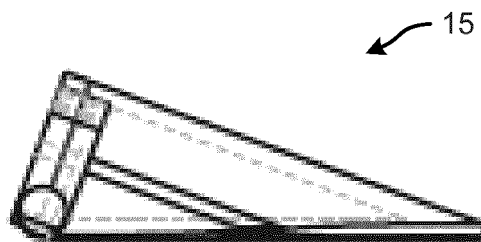


Fig. 9b

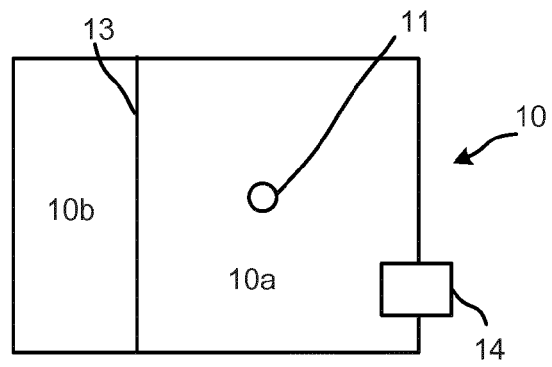


Fig. 10a

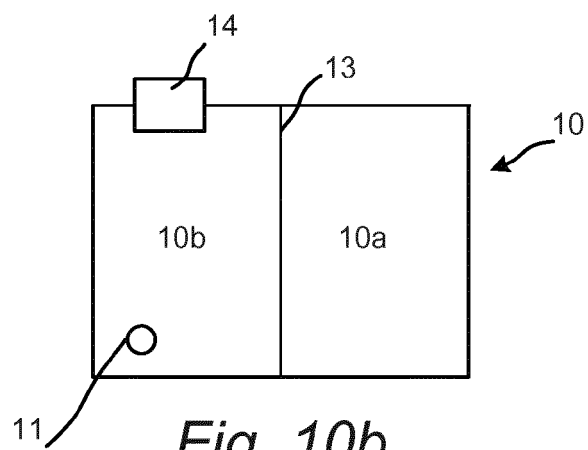


Fig. 10b

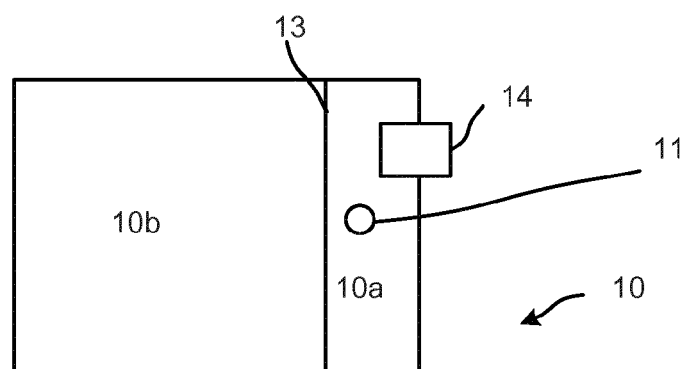


Fig. 10c

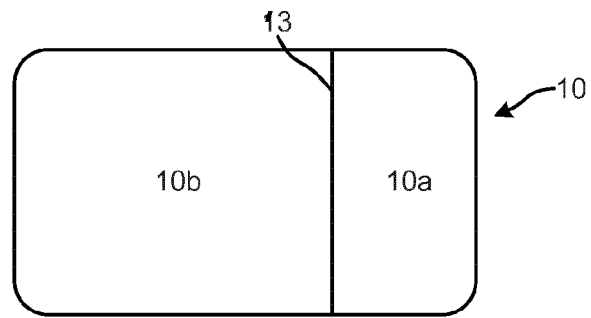


Fig. 11a

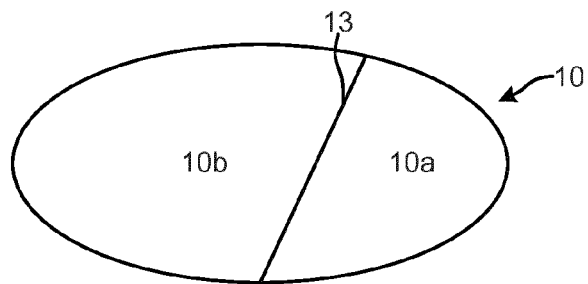


Fig. 11b

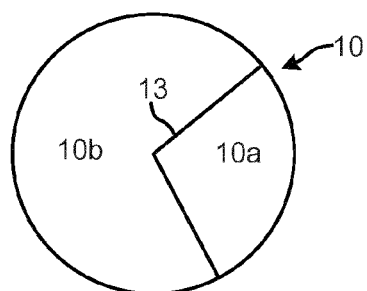


Fig. 11c

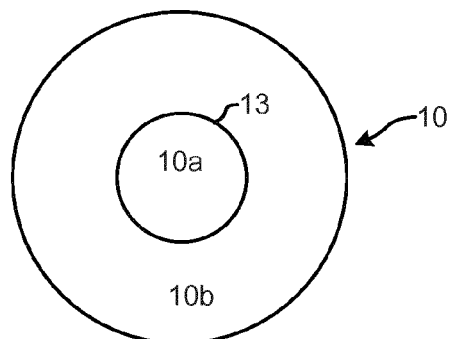


Fig. 11d

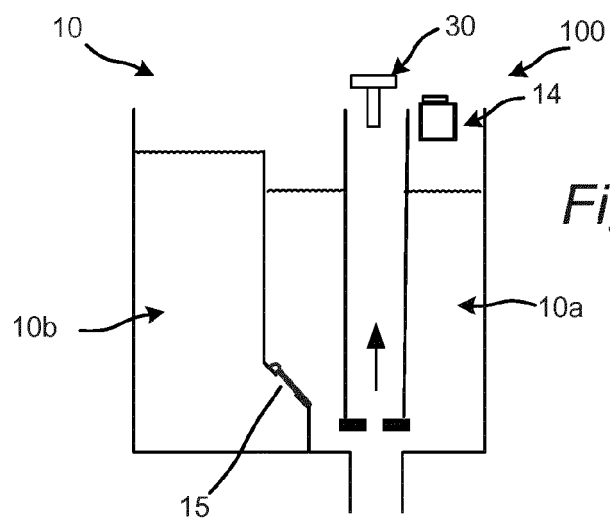


Fig. 12a

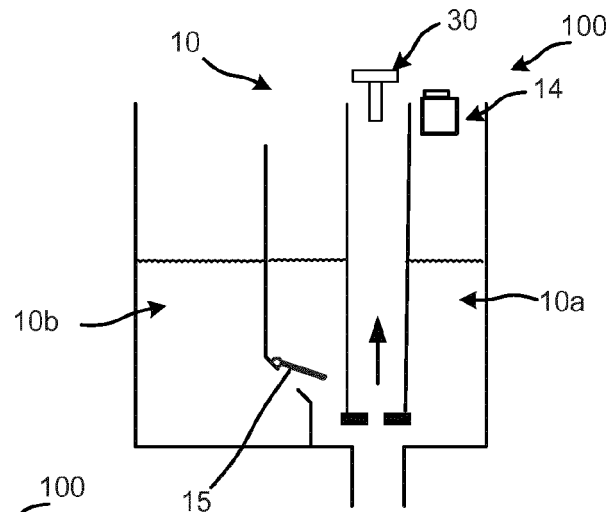


Fig. 12b

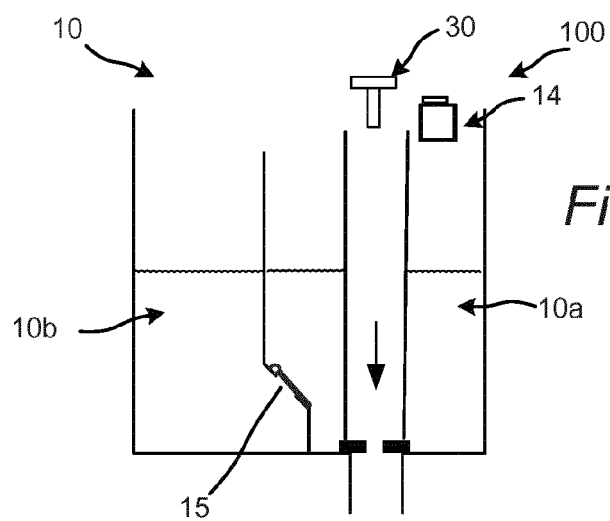


Fig. 12c

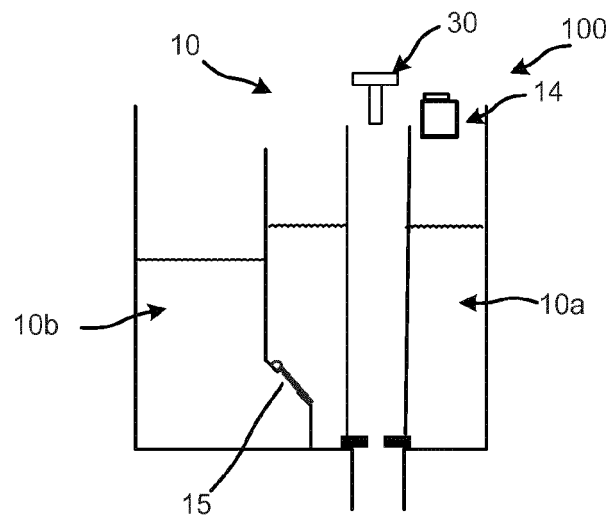


Fig. 12d



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Place of search Munich		Date of completion of the search 1 March 2016	Examiner Horst, Werner
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