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(54) SANITARY WARE PRODUCT COMPRISING DISPENSER

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Description

Subject of the Invention

[0001] The subject of the invention is related to a sanitary ware product comprising a bowl and a system for allowing hygienic additive flow into the bowl. Also a method of using such sanitary ware product is claimed.

Prior Art

[0002] People come across with serious hygiene problems due to common usage of toilets in our houses, offices, restaurants, cafes, hospitals and malls in which we spent a lot of time.

[0003] In the prior art, there are various methods for solving the hygiene problems. In prior art embodiments, systems comprising various additives are mounted into the water closets/toilet bowls or reservoirs to provide hygiene in sanitaryware products. During mounting of these materials into the water closet bowls sometimes unhygienic conditions may occur and in the systems which are mounted inside the reservoir, the adjustments of the water filling and emptying equipments may be damaged and the assembly of them is hard and additionally, the diversity of the materials used with the prior art systems is very limited.

[0004] Some of the systems developed in the present state of art are used by being mounted to the ring holes at the inner parts of the closets. The system disclosed in DE10015361C1 has a container for the fluid with an outlet opening fitted to the edge of the bowl. The system mentioned in this document adds a fluid agent to the water, when flushing a toilet bowl. The outflow opening of the container is linked to a rising tube, with its outlet end opening into the flushing flow channel. When the toilet is flushed, the water flow through the channel draws a portion of the fluid out of the container by suction.

[0005] In DE 10246866 (A1), tablet is placed into the chamber which is present in the structure of the reservoir. In this system the additive is not wholly covered by water level when the cistern is refilled. When the water is completely filled, the water which enters and exits through the holes present on each surface of the reservoir mixes an insufficient amount of material into the water in the reservoir and the water containing chemicals is poured into the closet container by the flush.

[0006] In GB1347569A, a measured liquid distribution is provided with respect to the water levels changing in the reservoir. In this document a device for dosing a flushing cistern, with cleanser or disinfectant comprises a container for the liquid additive and an air-bell which rises and falls with the water level is mentioned. In its lowest position additive fills the metering chamber and is discharged through outlets as the bell rises. The additional liquid is filled up to the neck of the reservoir creating an air lock.

[0007] In GB1471040, the container which holds the

hygienic liquid have a lid to fill the liquid and it is placed into the reservoir. A small diameter opening is positioned at the top and cleaning compound is exposed to water within the cistern through this opening. A pressure sensitive paper is located over the opening. Inert materials are also included with the compound. The inert materials may comprise stone, marbles, or any other solid which will not affect the reaction of the compound. The purpose of the inert material is to limit the amount of compound which is exposed to water. The mixture of compound and inert material is loaded in the container until the container is one-third to two-thirds full, preferably about one-half full. Accordingly, this compound will be carried into the bowl when the toilet is flushed to thereby achieve a cleaning action. After flushing, the hygiene providing liquid exits from the narrow exit of the reservoir in controlled amounts.

[0008] In US 4171546, a passive dosing dispenser for issuing a predetermined volume of a toilet tank additive solution into a toilet tank as the water is draining therefrom while the toilet is flushing. In the mentioned system hygiene providing material is mixed with water by letting the region in which the hygiene providing material is present filled with water through the holes when the water level in the reservoir increases is disclosed. Together with the lowering of the water level, namely with the flushing, the water into which the hygiene providing material is mixed is discharged from the reservoir into the closet. In the present document, different solutions are found for this system. The contact of the hygiene providing liquid occurs in a small region and in each flush, a little amount of water with hygienic additive is mixed into the reservoir water.

[0009] On the other hand, in US 4312082, a system to dispense a predetermined amount of a liquid formulation into the toilet bowl in response to cycling of the water level in the tank during a flushing operation of the toilet is mentioned. The system comprises a reservoir for storage the liquid formulation and a dispensing pump which is driven through its working stroke by a float vertically movable in response to the cycling water level in the tank. As the water level rises, the lower moving part moves upward by advancing in the piston bearing, moves the balls with the pressure and provides the advancing of hygiene providing liquid within the pipes. The liquid mixes to the water from the upper exit.

[0010] In US 4319369A, water saving is intended during disinfection. Since the inlet mouth of the dispenser connected to the clean water exit is above a determined water level, it saves water by keeping it at a level equal to its own length. The disinfecting liquid container connects to the main passage from the side and the water gains acceleration due to the angled physical structure of the main passage. This acceleration provides a suction power for the disinfectant liquid to pass into the water. The passage of water through the product and flowing of it into the water closet are provided by the pulling of the cover which is standing with an angle and connected

to the flusher button with chain up together with the button.

[0011] In US 4432102, a system which permits a predetermined amount of additive solution to be discharged into the toilet tank and/or bowl from an outlet port of the device during each flush cycle. Mentioned system comprises two cavities in one of which the tablet is placed and the second cavity communicating with the tablet cavity and holding a solution of the dissolved additive material. When the toilet is flushed a predetermined amount of water flows into the solution cavity and this predetermined amount of water causes a corresponding amount of additive solution to be discharged from the cavity and substantially into the tank. By positioning the device in the tank, the optimum amount of the additive solution may be transferred into the tank and/or bowl during the flush, and remain therein during the quiescent period before the next flush.

[0012] In US 4451941 a dosage adjusted dispenser which is composed of two parts and attached to the side wall of the reservoir is disclosed. The product is comprises two walls the first of which is from an elastic material and the second is from a hard material. The flexible first wall located so that hydrostatic pressure from the body of water presses the first wall against the second wall to close the first flow path against the water flow therealong when the level of the body of water is above the first wall, and permits the predetermined volume of water to flow between the first and second walls into the product chamber when the level of the body of water is below the first wall, water in the product chamber dissolving a portion of the material therein to form a material containing solution. The system also includes structure for dispensing substantially the same predetermined volume of the solution from the product chamber into the body of water when the body of water falls from the upper level to the lower level.

[0013] In US 4459710, a dispenser system which has two dispensing sections has been mentioned. The first dispensing section comprises a first product chamber for containing, a cleaning solution comprising surfactant, fragrance and dye, and the second dispensing section comprises second and third product chambers for containing, preferably, a disinfectant solution. During operation a predetermined volume of solution is dispensed from each section. In the mentioned passive dispensing device two solutions from two separate sections are dispensed simultaneously into the toilet bowl. Both sections are designed such that concentrations of the surfactant and disinfectant in the body of liquid arising from the migration or diffusion of respective solutes into the tank water during quiescent periods.

[0014] Other known toilet bowls and water flushing systems are described for example in documents DE-U-20314954 and WO-A-2006/136215 wherein the DE-954 document discloses the preamble of present independent claim 1.

Brief Description of the Invention

[0015] The subject of the invention is related to a sanitary ware product comprising a closet bowl and a system mounted on the sanitary ware product surface comprising hygienic additive which provides a hygienic environment in the closet bowl by providing dosage adjusted flow of the hygienic additive into the closet bowl and also related to a method of use of such sanitary ware product.

[0016] The simplicity of the system and the installation, the easiness of the addition of the hygiene providing liquid to the system and the ability to use all sorts of hygiene providing liquid with the system subject to the invention are the most significant advantages of the system.

[0017] The system according to the invention, in most general terms, comprises a housing which is mounted onto the assembly holes present on the upper surface of the sanitary ware product, a unit that enables the hygienic material filled into the housing to flow into the sanitary ware product bowl, auxiliary components for the operation of said unit, and cover parts; wherein said system functions thanks to the fact that the hygienic liquid flows from the housing to the inner portion of the sanitary ware product. It will be explained the use of the system developed within the scope of the invention in toilets, i.e. water closets.

[0018] By pressing a reservoir button, water enters the closet bowl through a clean water inlet channel, reaches the water closet bowl while a determined amount of hygiene providing liquid mixes to the water and thus, the closet bowl is cleaned.

Description of the Figures

[0019]

Fig. 1: The overall view of the system according to the invention which is located on the closet and allows hygienic additive entry into the closet bowl.

Fig. 2: The detailed view of the system according to the invention which is located on the water closet and provides hygienic additive, together with the water closet and water closet cover.

Fig. 3: The top and rear views of the system according to the invention which provides hygienic additive.

Fig. 4: The detailed views of the system according to the invention which provides hygienic additive.

Fig. 5: The perspective view of the components of the system according to the invention which provides hygienic additive.

Fig. 6: The view of the portion where hygienic liquid accumulates in the system according to the invention which provides hygienic additive and of the unit enabling the hygienic liquid material to flow into the closet/toilet bowl.

Fig. 7: The view of the components of the unit where hygienic liquid accumulates and which enables the hygienic liquid material to flow into the toilet bowl in

the system according to the invention which provides hygienic additive.

Fig. 8: The view showing up and down positions of the ball positioned inside the unit enabling the hygienic liquid material to flow into the toilet/closet bowl. 5

Fig. 9: The perspective view of the component directing the water coming from the clean water channel to the inner body positioned in the unit in the system.

Fig. 10: The perspective view of the component directing the water coming from the clean water channel to the inner body positioned in the unit in the system. 10

Fig. 11: The perspective view of the component directing the water coming from the clean water channel to the inner body positioned in the unit in the system, when mounted in the housing. 15

Fig. 12: The detailed view of the housing where the hygienic liquid is put and the view showing the mounting part of the unit onto the housing. 20

Fig. 13: The detailed cross-sectional view of the unit enabling the hygienic liquid material to flow into the toilet bowl.

Fig. 14: The assembled view of the components of the unit enabling the hygienic liquid material to flow into the toilet bowl. 25

Figs. 15a, 15b: The top and bottom views of the inner body positioned in the unit enabling the hygienic liquid material to flow into the toilet bowl and the view of the liquid passage holes located in these sections. 30

Fig. 16: The view showing the clean water channel and the mounting place of the system according to the invention onto the sanitary product surface. 35

Description of the References:

[0020]

A: System according to the invention which provides hygienic additive 40

1: Receptacle/housing wherein the hygienic liquid is put

2: Unit enabling the hygienic liquid material to flow into the toilet bowl 45

2.1: Outer body

2.2: Sealing element

2.3: Inner body 50

2.4: Ball

2.5a: Liquid passage hole located on the upper portion of the inner body (at the top of the inner body)

2.5b: Liquid passage hole located on the lower portion of the inner body (at the bottom of the inner body) 55

2.6: Inner body inner wings

3: The component directing the water coming from the clean water channel to the inner body positioned in the unit in the system

4: Upper cover of the housing where the hygienic liquid is filled

5: Visual cover part covering the outer portion of the housing

6: Screw unit enabling the receptacle/housing to be mounted on the sanitary product

7: Screws enabling the upper cover of the receptacle where the hygienic liquid material is filled, to be mounted

8: Mounting holes where the system according to the invention is mounted on the sanitary product

9: Hole into which the component numbered 3 is mounted with the housing and which allows the flow of the hygienic additive into the toilet bowl.

10: Hole positioned on the upper cover of the housing where the hygienic liquid is filled into the housing

11: Extension of the housing located in the lower portion on the housing

11a: Bearing of the unit enabling the hygienic liquid material to flow into the toilet bowl on the housing

12a: Mouth/opening positioned on the component through which clean water coming from the clean water channel to the inner body positioned in the unit and which forwards the clean water to the inner body

12b: Opening allowing the mounting of the component directing the water coming from the clean water channel to the inner body positioned in the unit in the system, onto the housing

13: Bucket directing the clean water into the inner body and positioned on the component directing the water coming from the clean water channel to the inner body positioned in the unit in the system

13a: Mouth/opening located in the clean water coming direction of the bucket, on the component directing the water coming from the clean water channel to the system

14: Clean water inlet channel on the sanitary product surface

Description of the Invention

[0021] The subject of the invention is related to a sanitary ware product in accordance with independent claim 1.

[0022] Three holes (8,9) are positioned on the sanitary ware product surface for mounting and use of the system

in sizes in accordance with the mounting and use of the system again, as seen in Fig. 2. One of these holes (9) is used both for mounting, and in order for the hygienic liquid to get into the toilet bowl. The other two are the holes (8) made only for mounting the system. The hole (9) made in order for the hygienic liquid to pass to the toilet bowl is positioned on the clean water inlet channel (14) such that it will allow flowing of the hygienic additive to the toilet by mixing with the water coming from the reservoir (Fig. 16).

[0023] The system according to the invention comprises; at least one housing mounted in the mounting holes positioned on the upper surface of the sanitary ware product and comprising a hygienic liquid, at least one unit that enables the hygienic material filled into the housing to flow into the toilet bowl, auxiliary components for the operation of said unit, a component directing the clean water to the system to initiate the operation of the system and cover parts; wherein said system functions thanks to the fact that the hygienic liquid flows from the housing to the inner portion of the toilet bowl.

[0024] The system according to the invention comprises; at least one housing (1) where the hygienic liquid is put; a unit (2) which ensures flowing of the hygienic liquid material into the toilet and comprising at least one outer body (2.1), at least one inner body (2.3) which is located inside said outer body (2.1), at least one sealing element (2.2) located between the outer body (2.1) and the inner body (2.3), and a ball (2.4) which is located in the inner body and moves up and down; a component (3) which is mounted in the lower portion of the housing (1) and ensures that the water coming from the clean water channel is directed to the inner body (2.3) positioned in the unit (2); at least one upper cover (4) which is located in a way to cover the housing where the hygienic liquid is put; at least one hole (10) located on the upper cover and allowing the hygienic additive to be filled into the housing (1); at least one cover part (5) covering the outer portion of the housing (1); a screw unit (6) that allows the housing (1) to be mounted onto the sanitary ware product surface; and screws (7) allowing the mounting of the upper cover (4) of the housing (1) where the hygienic liquid material is put. Sealing members (2.2) that are located between the outer body (2.1) and the inner body (2.3) in the unit (2) are preferably washers.

[0025] In the system according to the invention, an extension (11) which is positioned on the housing (1) and extends towards the lower portion of the same is configured. The inner portion of the extension (11) of the housing located on the lower portion of the housing forms a bearing (11a) where the unit (2) enabling the hygienic liquid material to flow into the toilet bowl is located. The unit (2) enabling the hygienic liquid material to flow into the toilet bowl is fixed in the bearing (11a) on the housing by means of the outer body (2.1) thereof. The outer portion of the outer body (2.1) positioned in the unit (2) enabling the hygienic liquid material to flow into the toilet bowl has a threaded structure (Figs. 7, 13). The inner

portion of the bearing (11a) has also a threaded structure in a way to correspond to the outer portion of the outer body (2.1). Thus, the unit (2) enabling the hygienic liquid material to flow into the toilet bowl is secured in this area upon locking of the threaded structure on the outer portion of the outer body (2.1) in full compliance with the corresponding threaded structure in the inner portion of the bearing (11a) of the unit enabling the hygienic liquid material to flow into the toilet bowl on the housing. The component (3), directing the water coming from the clean water channel (14) to the inner body (2.3) positioned in the unit (2), is mounted on the outer portion of the extension (11) which is located on the receptacle/housing (1) where the hygienic liquid is put and which is formed as an extension of the housing. The component (3) enabling the water coming from the clean water channel (14) to be directed into the inner body (2.3) is mounted onto the extension (11) located in the lower portion of the housing (1) such that the former will be attached to the latter in a way to enclose it from the outside, as seen in Fig. 11.

[0026] In the system according to the invention, the component (3) directing the water coming from the clean water channel (14) to the inner body positioned in the unit in the system is mounted onto the hole (9) on the sanitary ware product, wherein the hygienic liquid material entering into the sanitary ware product through said hole.

[0027] The hygienic material is put into the toilet tank or product housing during the use of the existing systems within the present state of the art; on the other hand, the system according to the invention, in practice, is used by making changes on the product and placing the system according to the invention which provides hygienic additive onto the sanitary ware product surface in the rear portion of the toilet cover (Fig. 1).

[0028] In the system according to the invention which provides hygienic additive and which is mounted through the holes (8, 9) on the sanitary ware product, the receptacle/housing (1) is used for storing the hygienic liquid material. In case of running of the hygienic additive in the receptacle/housing (1) where the hygienic liquid is put, the hygienic additive is refilled into the housing (1) through the hole (10) on the upper cover (4). The receptacle/housing (1) where the hygienic liquid is put is mounted on the sanitary ware product through the holes (8) on the sanitary ware product surface by means of screws (6); moreover, the extension (11) extending towards the lower portion of the housing is engaged in the other hole (9) on the sanitary ware product by means of the component No. 3. Mounting of the housing onto the sanitary ware product surface is thus completed. The cover part (5) is the visual cover part which is used for concealing the system which provides hygienic additive, and this cover may vary in terms of design in the detail of the product. The upper cover (4) of the receptacle/housing (1) where the hygienic liquid is put is mounted on the receptacle/housing (1) by means of screws (7).

[0029] The hole (9) provided on the sanitary ware prod-

uct surface for passing of the hygienic liquid to the toilet bowl is made on the clean water inlet channel (14), and thus the hygienic liquid material is made to flow into the toilet bowl upon mixing with the clean water flowing into the toilet thanks to the system according to the invention. Thus, hygiene is ensured in the toilet bowl. The housing (1) where the hygienic liquid is put, seen in Fig. 5, is mounted onto the holes (8) made on the sanitary ware product.

[0030] The components of the unit (2) which allows flowing of the hygienic liquid material into the toilet in the system according to the invention are shown in detail in Fig. 7. Again, as mentioned before, the unit (2) is made up of at least one outer body (2.1), at least one inner body (2.3) which is located inside said outer body (2.1), at least one sealing element (2.2) located between the outer body (2.1) and the inner body (2.3), and a ball (2.4) which is located in the inner body and is capable of moving up and down. At least one liquid passage hole (2.5a, 2.5b) is located such that one of them is located on the upper portion (top portion) and the other is located on the lower portion (bottom portion) on the inner body (2.3). The inner body (2.3) comprises inner wings (2.6) in the inner portion thereof. The inner body (2.3) has a flexible nature, wherein the inner wings (2.6) thereof provide sealing owing to the pressure caused by the ball (2.4) in both lower and upper positions. In Fig. 14, the downward inclination caused by the inner wings (2.6) of the inner body due to the ball (2.4) pressure is seen. The ball (2.4) in its upward position applies pressure on the inner wings (2.6) in upward position also and the inner wings (2.6) assist in providing sealing. One of the liquid passage holes (2.5a, 2.5b) located on the inner body (2.3) allows hygienic additive passage from the housing (1) where the hygienic liquid is put to the inner body (2.3) while the other hole allows hygienic additive passage from the inner body (2.3) to the toilet bowl. The liquid passage hole (2.5a) located in the top on the inner body (2.3) allows hygienic additive passage from the housing (1) where hygienic liquid is put to the inner body (2.3) while the liquid passage hole (2.5b) located in the bottom allows hygienic additive passage from the inner body (2.3) to the toilet bowl. In the system according to the invention, while the toilet bowl is being washed with clean water, the hygienic liquid which will pass to the toilet bowl in the next time when the toilet bowl is to be washed accumulates inside the inner body (2.3) and is kept in this section until the next washing operation. Subsequent to washing of the toilet bowl with the clean water coming from the reservoir, the inner body (2.3) which is thus discharged is again filled with the hygienic liquid passing from the housing (1) to the inner body (2.3), and the hygienic liquid is kept inside the inner body (2.3) until the next washing operation. Washing of the toilet bowl will be explained in detail below. The sealing elements (2.2) used between the outer body (2.1) and the inner body (2.3) of the unit are preferably washers. The assembled view of the unit (2) enabling the hygienic liquid material to flow into the

toilet bowl, said unit consisting of said components, is given in Figs. 13 and 14. The inner portion of the extension (11) of the housing located on the lower portion of the housing forms the bearing (11a) of the unit (2) enabling the hygienic liquid material to flow into the toilet bowl on the housing. The unit (2) enabling the hygienic liquid material to flow into the toilet bowl is located in its bearing (11a) on the housing (1) as described above. Thus, the unit (2) enabling the hygienic liquid material to flow into the toilet bowl is secured in this area upon locking of the threaded structure on the outer portion of the outer body (2.1) of the unit (2) enabling the hygienic liquid material to flow into the toilet bowl, in full compliance with the corresponding threaded structure in the inner portion of the bearing (11a) of the unit enabling the hygienic liquid material to flow into the toilet bowl on the housing.

[0031] One of the most significant parts of the system is the component (3) which directs the water coming from the clean water channel into the inner body (2.3) of the unit (2). The structure of this component No. 3 is shown in detail in Figs. 9 and 10. The component No. 3 is mounted onto the extension (11) of the housing located in the lower portion on the housing such that the former will be attached to the latter in a way to enclose it. The inner diameter of the component (3) directing the water coming from the clean water channel (14) to the inner body (2.3) positioned in the unit (2) enabling the hygienic liquid material to flow into the toilet bowl is smaller than that of the extension (11) of the housing which is located in the lower portion on the housing; and the component No. 3 is made flexible and engaged in this area. When released after being attached to the extension (11) of the housing located in the lower portion on the housing, the component No. 3 clutches this section, and is thus mounted. The component No. 3 is mounted on the hole (9) through which the hygienic liquid material enters into the sanitary ware product, and during clean water passage from the clean water channel (14) to the toilet bowl, this component allows some water to be directed into the inner body (2.3), thereby making the ball (2.4) herein move. Both the lower and the upper portions of the component (3) directing the water coming from the clean water channel to the inner body (2.3) positioned in the unit (2) enabling the hygienic liquid material to flow into the toilet bowl are open. The component No. 3 is mounted in the extension (11) of the housing which is located in the lower portion on the housing by being passed through the opening (12b) which is located thereon and which allows the mounting of the same onto the housing. The other opening on the component (3) directing the water coming from the clean water channel to the inner body (2.3) disposed in the unit (2) is the mouth/opening (12a) through which clean water enters into the inner body. A bucket (13) which directs the clean water into the inner body is disposed on the component (3) directing the water coming from the clean water channel to the inner body (2.3) disposed in the unit (2) enabling the hygienic liquid material to flow into the toilet bowl. This bucket has a structure

that can be defined as a quarter circle. The section of this structure facing the coming direction of the clean water from the clean water channel, i.e. facing the clean water channel, is the opening (13a) section which allows water inlet. The component No. 3 is mounted such that the opening (13a) will take the water coming from the clean water channel (14), i.e. face the clean water channel (14). The water coming from the clean water channel (14) enters through the opening (12a) on the component No. 3 by hitting the bucket (13) by means of this mouth/opening (13a) and rises inside the inner body (2.3) located inside the unit (2) enabling the hygienic liquid material to flow into the toilet bowl. The ball (2.4) located in the inner body (2.3) is located such that it will close the hole (2.5b) disposed in the lower portion of the inner body (2.3), i.e. bottom of the inner body (2.5b), and that it will fit at the bottom/base of the inner body (2.3), in case the system is not active, i.e. when there is no water passage to the toilet bowl from the reservoir and clean water channel (14), as seen in Figs. 8a and 14. In this position of the ball (2.4), there occurs no liquid passage into the toilet bowl from the inner body (2.3). Upon pushing the reservoir push button, while the water flowing freely from the clean water channel (14) flows into the toilet, it enters through the mouth/opening (13a) located on the component No. 3 in clean water coming direction, hits this area by means of the bucket (13) (i.e. bucket-like structure), and then advances into the inner body (2.3) through the opening (12a) on the component No. 3. The ball (2.4) located in the inner body (2.3) moves upwards with the pushing force caused by the water reaching the inner body (2.3). That the ball (2.4) moves upwards with the pushing force caused by the water allows the liquid passage hole (2.5b) located on the lower portion of the inner body (2.3) to be opened. The hygienic additive present in the inner body (2.3) passes through the hole (2.5b) and the component No. 3, directs towards the toilet bowl, and passes through the hole (9) on the toilet surface, mixes with the clean water flowing to the toilet bowl, and then is discharged into the toilet bowl. The position of the ball (2.4) during water flow into the toilet is shown in Fig. 8b. In this position, the ball (2.4) is kept in upper position with buoyancy of the water having entered into the body (2.3) such that it will close the hole (2.5a) disposed in the top of the inner body (2.3), i.e. in an upper position inside the inner body (2.3) (Fig. 8b). In this position of the ball (2.4), no hygienic additive passage occurs from the receptacle/housing (1) where the hygienic liquid is put to the inner body (2.3). Since there is no force to hold the ball (2.4) in the upper position when the clean water coming from the reservoir runs out, the ball (2.4) again freely moves in downward direction and it is positioned in a way to fit in the bottom of the inner body (2.3) and closes the hole (2.5b) in this area so as not to allow liquid passage. While the ball (2.4) moves downwards, the liquid passage hole (2.5a) located in the upper body on the inner body (2.3) is again opened in a way to allow liquid passage; thus, hygienic additive passage from the housing (1) into

the inner body (2.3) takes place again. And the inner body (2.3) is refilled with hygienic additive to flow into the toilet bowl in the next washing operation. Downward movement of the ball (2.4) is completed, and when the hole (2.5b) located in the lower portion of the inner body (2.3) is closed by way of the ball (2.4), the ball (2.4) prevents liquid passage through the hole (2.5b), and thus provides sealing, thereby also preventing hygienic additive passage to the toilet. Thus, in the next washing operation, the hygienic additive to flow into the toilet bowl is filled into the inner body (2.3) and kept herein. The inner wings (2.6) located in the lower and upper portions in the inner portion of the inner body assist in providing sealing with the pressure caused by the ball (2.4).

[0032] Such operation of the system and the ball (2.4) is repeated in each washing operation of the toilet with the clean water coming from the reservoir.

[0033] With the use of the sanitary ware product according to the invention, it is ensured that the toilet bowl is washed hygienically without the need for any additive in the reservoir or the sanitary ware product bowl.

Claims

1. A sanitary ware product comprising a sanitary ware product bowl and a system for allowing hygienic additive flow into the sanitary ware product bowl in order to ensure a hygienic environment inside the sanitary ware product bowl, the system comprising;
 - a housing (1) configured to house a hygienic liquid material and comprising an extension (11), the inner portion of which forms a bearing (11a) wherein a unit (2) enabling the hygienic liquid material to flow into the sanitary ware product bowl is located;
 - characterised in that** the sanitary ware product bowl comprising at least three holes (8,9) in the rear portion of the sanitary ware product, two (8) of which are for mounting said system and the other hole (9) is for providing entering the hygienic liquid material into the sanitary ware product bowl;
 - said unit being made up of at least one outer body (2.1), at least one sealing element (2.2), at least one inner body (2.3) which is located inside the outer body (2.1) and able to house the hygienic liquid flowing into the sanitary ware product bowl, and at least one ball (2.4) which is located in the inner body (2.3) and which is able to move inside the inner body (2.3) upwards due to the pushing force caused by the water reaching the inner body (2.3) and coming from a clean water channel (14) of the sanitary product into the inner body (2.3);
 - a component (3) which is mounted on the extension (11) located in the lower portion of the

- housing (1) and which comprises a bucket (13) able to direct the water coming from the clean water channel (14) into the inner body (2.3) positioned in the unit (2) of the system, the bucket (13) comprising an opening (13a) which allows water inlet in the intersection of the bucket (13) and the clean water channel (14) and faces the water coming from the clean water channel (14);
- an upper cover (4) of the housing (1) comprising a hole (10) which is located in the middle portion thereof and able to allow the filling of the hygienic liquid material into the housing (1);
 - a cover part (5) covering the outer portion of the housing (1).
2. A sanitary ware product according to Claim 1, **characterized in that** the unit (2) is located in the bearing (11a) by means of the outer body (2.1).
 3. A sanitary ware product according to Claim 2, **characterized in that** the outer portion of the outer body (2.1) has a threaded structure in a way to comply with the bearing (11a).
 4. A sanitary ware product according to Claim 3, **characterized in that** the inner portion of the bearing (11a) has a threaded structure in a way to comply with the outer portion of the outer body (2.1).
 5. A sanitary ware product according to Claim 1, **characterized in that** the inner body (2.3) comprises at least two liquid passage hole (2.5a, 2.5b) such that one of them is located on the upper, or top, portion thereof and the other is located on the lower, or bottom, portion thereof.
 6. A sanitary ware product according to Claim 1, **characterized in that** the inner body (2.3) comprises inner wings (2.6) in the upper and lower portions of the inner portion thereof.
 7. A sanitary ware product according to Claim 1, **characterized in that** the component (3) comprises thereon an opening (12b) that allows mounting thereof onto the housing.
 8. A sanitary ware product according to Claim 7, **characterized in that** the component (3) comprises thereon a mouth/opening (12a) through which the clean water passes into the inner body (2.3).
 9. A sanitary ware product according to Claim 7, **characterized in that** the component (3) is located the extension (11) such that it will enclose the extension (11) from the outside, by being engaged in the extension (11) by means of the opening (12b) disposed thereon.
 10. A sanitary ware product according to Claim 9, **characterized in that** the inner diameter of the component (3) is smaller than that of the extension (11) onto which the component (3) is engaged.
 11. A sanitary ware product according to Claim 5, **characterized in that** the ball (2.4) located in the inner body (2.3) is located therein such that it will close the hole (2.5b) disposed in the lower portion of the inner body, and that it will fit at the bottom of the inner body (2.3), in case the system is closed, i.e. when there is no hygienic additive passage from the system into the sanitary ware product bowl and when there is no clean water passage to the sanitary ware product bowl from the reservoir and clean water channel (14).
 12. A sanitary ware product according to Claim 5, **characterized in that** the ball (2.4) located in the inner body (2.3) is located therein in upward position such that it will close the hole (2.5a) disposed in the upper portion of the inner body (2.3), and that it will fit at the top of the inner body, in case the system is active, i.e. when there is hygienic additive passage from the system into the sanitary ware product bowl and when there is clean water passage to the sanitary ware product bowl from the reservoir and clean water channel (14).
 13. A sanitary ware product according to Claim 1, **characterized in that** the component (3) is mounted in the hole (9) made in the sanitary ware product bowl and extending to the clean water inlet channel (14) such that the mouth (13a) of the bucket (13) thereon will face the clean water channel.
 14. A sanitary ware product according to Claim 1, **characterized in that** the at least one element (2.2) that is used in the unit (2) is located between the outer body (2.1) and the inner body (2.3), and that said at least one sealing element (2.2) is preferably a washer.
 15. A sanitary ware product according to Claim 1, **characterized in that** it further comprises screw unit (6) enabling the housing (1) to be mounted onto the sanitary ware product surface.
 16. A sanitary ware product according to Claim 1, **characterized in that** it further comprises a screw unit (7) for mounting the upper cover (4) onto the housing (1).
 17. A method of use of the sanitary ware product according to any of the preceding claims, comprising the process steps of;
 - upon pushing a reservoir push button, entering

of the water through the mouth/opening (13a) located on the component No. 3 in clean water coming direction while it is flowing freely from the clean water channel (14) into the toilet, hitting this area by means of the bucket (13), and then advancing into the inner body (2.3) through the opening (12a) on the component No. 3,

- arising of the ball (2.4) located at the bottom of the inner body (2.3) and moving the ball (2.4) towards the top of the inner body (2.3) by means of the water entering into the inner body (2.3),
- with this movement of the ball (2.4), opening of the liquid passage hole (2.5b) located in the lower portion, or bottom, of the inner body (2.3), and passing the hygienic liquid material present in the inner body (2.3) through the hole (9) disposed on the toilet, and then mixing thereof with the clean water coming from the reservoir, and finally flowing into the sanitary ware product bowl,
- during water flow from the reservoir into the sanitary ware product bowl, holding of the ball (2.4) in upward position such that it will close the liquid passage hole (2.5a) located in the upper portion (top) on the inner body (2.3), with the buoyancy of the water entering into the inner body (2.3),
- when clean water flow from the reservoir finishes, the ball (2.4) becoming free and moving in downward direction,
- with the move of the ball (2.4) in downward direction, opening of the liquid passage hole (2.5a) located in the upper portion of the inner body (2.3), starting of hygienic additive passage from the housing (1) where the hygienic liquid is put into the inner body (2.3) by means of this hole, and
- upon completion of the downward movement of the ball (2.4), positioning of the same on the hole at the bottom of the inner body (2.3) such that liquid passage hole (2.5b) located on the lower portion (bottom) of the inner body (2.3) will not allow liquid passage.

Patentansprüche

1. Sanitärvorrichtung umfassend ein Toilettenbecken und ein System, das eine Zugabe eines Hygienezusatzes in das Toilettenbecken erlaubt, um ein hygienisches Milieu in dem Toilettenbecken herzustellen, wobei das System umfasst:
 - ein Gehäuse (1), welches eingerichtet ist, um ein flüssiges Hygienematerial aufzunehmen, und welches ein Ansatzstück (11) umfasst, dessen Innenseite einen Lagersitz (11a) bildet, in

dem sich ein Einsatz (2) befindet, der es dem flüssigen Hygienematerial erlaubt, in das Toilettenbecken zu fließen;

dadurch gekennzeichnet, dass

- das Toilettenbecken wenigstens drei Öffnungen (8,9) an der Rückseite des Toilettenbeckens umfasst, wobei zwei (8) davon zum Montieren des Systems vorgesehen sind und die andere Öffnung (9) die Eintrittsöffnung für das flüssige Hygienematerial in das Toilettenbecken bildet;
- wobei die Einheit aus wenigstens einem Außenkörper (2.1), wenigstens einem Dichtungselement (2.2), wenigstens einem Innenkörper (2.3), der sich in dem Außenkörper (2.1) befindet und dazu in der Lage ist, das flüssige Hygienematerial aufzunehmen, das in das Toilettenbecken fließt, und wenigstens einem Ball (2.4), der sich in dem Innenkörper (2.3) befindet und der sich in dem Innenkörper (2.3) aufgrund der Druckkraft aufwärts bewegen kann, die durch das Wasser erzeugt wird, das den Innenkörper (2.3) erreicht und aus einem Reinwasserkanal (14) der Sanitärvorrichtung in den Innenkörper (2.3) fließt, besteht;
 - ein Bauelement (3), das an dem Ansatzstück (11) befestigt ist, welches sich in einem unteren Bereich des Gehäuses (1) befindet und einen Ausguss (13) umfasst, der das aus dem Reinwasserkanal (14) kommende Wasser in den Innenkörper (2.3) leitet, der sich in dem Einsatz (2) des Systems befindet, wobei der Ausguss (13) eine Öffnung (13a) umfasst, die es dem Wasser erlaubt, sich im Knotenpunkt des Ausgusses (13) und des Reinwasserkanals (14) zu sammeln, und dem aus dem Reinwasserkanal (14) kommenden Wasser zugewandt ist;
 - eine obere Abdeckung (4) für das Gehäuse (1), welche eine Öffnung (10) umfasst, die sich dort in einem mittleren Abschnitt befindet und dazu dient, das flüssige Hygienematerial in das Gehäuse (1) einlaufen zu lassen; und
 - eine Abdeckung (5), die den äußeren Bereich des Gehäuses (1) bedeckt.

2. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Einsatz (2) mittels des Außenkörpers (2.1) in dem Lagersitz (11a) sitzt.
3. Sanitärvorrichtung nach Anspruch 2, **dadurch gekennzeichnet, dass** der äußere Bereich des Außenkörpers (2.1) eine Gewindestruktur aufweist, die sich in den Lagersitz (11a) einpasst.
4. Sanitärvorrichtung nach Anspruch 3, **dadurch gekennzeichnet, dass** der Innenteil des Lagersitzes (11a) eine Gewindestruktur aufweist, die sich in den äußeren Bereich des Außenkörpers (2.1) einpasst.

5. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Innenkörper (2.3) wenigstens zwei Flüssigkeitsöffnungen (2.5a, 2.5b) aufweist, wobei sich eine davon im oberen Bereich oder am oberen Ende befindet und die andere im unteren Bereich oder am unteren Ende davon befindet. 5
6. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Innenkörper (2.3) eine Auskrugung (2.6) in den oberen und unteren Bereichen seines Innenbereichs umfasst. 10
7. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** das Bauelement (3) eine Öffnung (12b) aufweist, die eine Befestigung an dem Gehäuse ermöglicht. 15
8. Sanitärvorrichtung nach Anspruch 7, **dadurch gekennzeichnet, dass** das Bauelement (3) eine Öffnung/ein Loch (12a) aufweist, durch die das Reinwasser in den Innenkörper (2.3) gelangt. 20
9. Sanitärvorrichtung nach Anspruch 7, **dadurch gekennzeichnet, dass** das Bauelement (3) sich an dem Ansatzstück (11) befindet, so dass es das Ansatzstück (11) von außen umschließt, indem es mittels der Öffnung (12b), die an dem Bauelement (3) angebracht ist, am Ansatzstück (11) montiert ist. 25
10. Sanitärvorrichtung nach Anspruch 9, **dadurch gekennzeichnet, dass** der innere Durchmesser des Bauelements (3) kleiner ist als der des Ansatzstücks (11), an dem das Bauelement (3) angebracht ist. 30
11. Sanitärvorrichtung nach Anspruch 5, **dadurch gekennzeichnet, dass** der Ball (2.4), der sich im Innenkörper (2.3) befindet, sich so darin befindet, dass er die Öffnung (2.5b) schließt, die sich im unteren Bereich des Innenkörpers (2.3) befindet, und dass er auf den Boden des Innenkörpers (2.3) passt, wenn das System geschlossen ist, d. h. wenn kein Hygienezusatz von dem System in das Toilettenbecken fließt und wenn kein Reinwasser aus dem Wasserbehälter und dem Reinwasserkanal (14) in das Toilettenbecken fließt. 35
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12. Sanitärvorrichtung nach Anspruch 5, **dadurch gekennzeichnet, dass** der Ball (2.4), der sich im Innenkörper (2.3) befindet, sich in einer oberen Position befindet, so dass er die Öffnung (2.5a) schließt, die sich im oberen Bereich des Innenkörpers (2.3) befindet, und er sich am oberen Ende des Innenkörpers einpasst, wenn das System aktiv ist, d. h. wenn der Hygienezusatz von dem System in das Toilettenbecken fließt und wenn das Reinwasser aus dem Wasserbehälter und dem Reinwasserkanal (14) in das Toilettenbecken fließt. 50
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13. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** das Bauelement (3) sich in der im Toilettenbecken ausgebildeten Öffnung (9) befindet und sich in Richtung Reinwasserkanal (14) erstreckt, so dass die Öffnung (13a) des Ausgusses (13) dem Reinwasserkanal gegenüberliegt. 5
14. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** das wenigstens eine Dichtungselement (2.2), das im Einsatz (2) verwendet wird, sich zwischen dem Außenkörper (2.1) und dem Innenkörper (2.3) befindet, und dass das wenigstens eine Dichtungselement (2.2) vorzugsweise ein Dichtungsring ist. 10
15. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie außerdem eine Schraubereinheit (6) umfasst, die es ermöglicht, das Gehäuse (1) an eine Oberfläche der Sanitärvorrichtung zu montieren. 15
16. Sanitärvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie außerdem eine Schraubereinheit (7) umfasst, um die obere Abdeckung (4) an das Gehäuse (1) zu montieren. 20
17. Verfahren zur Verwendung der Sanitärvorrichtung nach einem der vorhergehenden Ansprüche, umfassend die folgenden Verfahrensschritte: 25
- nach Drücken einer Wasserbehältertaste, Zuführen des Wassers durch die Öffnung (13a)/ das Loch, das sich in Einströmrichtung des Reinwassers in dem Bauelement 3 befindet, während das Wasser von dem Reinwasserkanal (14) ungehindert in die Toilette fließt und dabei durch den Ausguss (13) in den Bereich eintritt und dann durch die Öffnung (12a), die sich in dem Bauelement 3 befindet, in den Innenkörper (2.3) vordringt, 30
 - Aufsteigenlassen des Balls (2.4), der sich auf dem Boden des Innenkörpers (2.3) befindet, und Bewegen des Balls (2.4) in Richtung oberes Ende des Innenkörpers (2.3) mittels des Wassers, das in den Innenkörper (2.3) eindringt, 35
 - mit der Bewegung des Balls (2.4), Öffnen der Flüssigkeitsöffnung (2.5b), die sich im unteren Bereich oder am Boden des Innenkörpers (2.3) befindet, und Zuführen des flüssigen Hygienematerials, das sich in dem Innenkörper (2.3) befindet, durch die in der Toilette ausgebildete Öffnung (9), und Vermischen mit dem Reinwasser, das aus dem Wasserbehälter kommt, und schließlich Zuführen in das Toilettenbecken, 40
 - während des Wasserflusses aus dem Wasserbehälter in das Toilettenbecken, Halten des Balls (2.4) in der oberen Position, so dass er die Flüssigkeitsöffnung (2.5a), die sich im oberen 45

Bereich (oberen Ende) des Innenkörpers (2.3) befindet, schließt, mit dem Auftrieb des in den Innenkörper (2.3) eintretenden Wassers,
 - wobei der Ball (2.4) freigegeben wird und sich abwärts bewegt, wenn der Reinwasserfluss aus dem Wasserbehälter endet, 5
 - mit der Ballbewegung (2.4) abwärts, Öffnen der Flüssigkeitsöffnung (2.5a), die sich im oberen Bereich des Innenkörpers (2.3) befindet, Beginn des Zuführens des Hygienezusatzes von dem Gehäuse (1), wobei das flüssige Hygienematerial durch die Öffnung in den Innenkörper (2.3) eintritt, und 10
 - nach vollständiger Abwärtsbewegung des Balls (2.4), Positionierung des Balls (2.4) auf der Öffnung auf dem Boden des Innenkörpers (2.3), so dass die Flüssigkeitsöffnung (2.5b), die sich im unteren Bereich (Boden) des Innenkörpers (2.3) befindet, für den Durchfluss von Flüssigkeit gesperrt ist. 15 20

Revendications

1. Produit sanitaire comprenant une cuvette du produit sanitaire et un système permettant à un additif hygiénique de s'écouler dans la cuvette du produit sanitaire afin d'assurer un environnement hygiénique à l'intérieur du bassin du produit sanitaire, le système comprenant:

- un logement (1) configuré pour utiliser un matériau liquide hygiénique et comprenant une extension (11), dont la partie intérieure forme un palier (11a) où est située une unité (2) qui permet au matériau liquide hygiénique de s'écouler dans la cuvette du produit sanitaire;

caractérisé par le fait que

la cuvette du produit sanitaire comprenant au moins trois trous (8,9) dans la partie arrière du produit sanitaire, dont deux (8) sont destinés au montage dudit système et l'autre trou (9) est destiné à fournir

l'entrée du matériau liquide hygiénique dans la cuvette du produit sanitaire;

- ladite unité étant composée d'au moins un corps extérieur (2.1), d'au moins un élément d'étanchéité (2.2), d'au moins un corps intérieur (2.3) situé à l'intérieur du corps extérieur (2.1) et pouvant contenir le liquide hygiénique s'écoulant dans la cuvette du produit sanitaire et au moins une boule (2.4) située dans le corps intérieur (2.3) et pouvant se déplacer à l'intérieur du corps intérieur (2.3) vers le haut en raison de la force de poussée provoquée par l'eau atteignant le corps intérieur (2.3) et provenant d'un canal d'eau propre (14) du produit sanitaire dans le corps intérieur (2.3);

- un composant (3) qui est monté sur l'extension (11) située dans la partie inférieure du logement (1) et qui comprend un seau (13) capable de diriger l'eau provenant du canal d'eau propre (14) dans le corps intérieur (2.3) positionné dans l'unité (2) du système, le seau (13) comprenant une ouverture (13a) permettant l'entrée de l'eau dans l'intersection du seau (13) et du canal d'eau propre (14) et étant face à l'eau provenant du canal d'eau propre (14).

- un couvercle supérieur (4) du logement (1) comprenant un trou (10) qui est situé dans sa partie centrale et capable de permettre le remplissage du matériau liquide hygiénique dans le logement (1);

- une partie (5) du couvercle recouvrant la partie extérieure du logement (1).

2. Produit sanitaire selon la revendication 1, **caractérisé par le fait que** l'unité (2) est située dans le palier (11a) au moyen du corps extérieur (2.1).

3. Produit sanitaire selon la revendication 2, **caractérisé par le fait que** la partie extérieure du corps extérieur (2.1) présente une structure filetée de manière à s'adapter au palier (11a).

4. Produit sanitaire selon la revendication 3, **caractérisé par le fait que** la partie intérieure du palier (11a) présente une structure filetée de manière à s'adapter à la partie extérieure du corps extérieur (2.1).

5. Produit sanitaire selon la revendication 1, **caractérisé par le fait que** le corps intérieur (2.3) comprend au moins deux trous (2.5a, 2.5b) pour le passage de liquide tels que l'un d'eux est situé sur sa partie supérieure ou au sommet et l'autre est situé sur sa partie inférieure ou au fond.

6. Produit sanitaire selon la revendication 1, **caractérisé par le fait que** le corps intérieur (2.3) comprend des ailettes intérieures (2.6) dans la partie supérieure et inférieure de sa partie intérieure.

7. Cuvette du produit sanitaire selon la revendication 1, **caractérisée par le fait que** le composant (3) comprend sur celui-ci une ouverture (12b) permettant son montage sur le logement.

8. Produit sanitaire selon la revendication 7, **caractérisé par le fait que** le composant (3) comprend sur celui-ci une bouche/ouverture (12a) à travers laquelle l'eau propre passe dans le corps intérieur (2.3).

9. Produit sanitaire selon la revendication 7, **caractérisé par le fait que** le composant (3) est situé sur l'extension (11) de telle sorte qu'il entoure le prolongement (11) de l'extérieur en étant engagé dans l'ex-

tension (11) au moyen de l'ouverture (12b) disposée sur celui-ci.

10. Produit sanitaire selon la revendication 9, **caractérisé par le fait que** le diamètre intérieur du composant (3) est plus petit par rapport à celui de l'extension (11) sur laquelle le composant (3) est engagé. 5
11. Produit sanitaire selon la revendication 5, **caractérisé par le fait que** la boule (2.4) située dans le corps intérieur (2.3) est située dans celui-ci de manière à fermer le trou (2.5b) situé dans la partie inférieure du corps intérieur, et qu'il s'adapte au fond du corps intérieur (2.3), dans le cas où le système est fermé, c'est-à-dire lorsqu'il n'y a pas de passage de l'additif hygiénique provenant du système dans la cuvette du produit sanitaire et lorsqu'il n'y a pas de passage d'eau propre vers la cuvette du produit sanitaire provenant du réservoir et du canal d'eau propre (14). 10 15 20
12. Produit sanitaire selon la revendication 5, **caractérisé par le fait que** la boule (2.4) située dans le corps intérieur (2.3) est située dans celui-ci dans une position vers le haut de manière à fermer le trou (2.5a) situé dans la partie supérieure du corps intérieur (2.3), et qu'il s'adapte au sommet du corps intérieur, dans le cas où le système est active, c'est-à-dire lorsqu'il y a un passage de l'additif hygiénique provenant du système dans la cuvette du produit sanitaire et lorsqu'il y a un passage d'eau propre vers la cuvette du produit sanitaire provenant du réservoir et du canal d'eau propre (14). 25 30
13. Produit sanitaire selon la revendication 1, **caractérisé par le fait que** le composant (3) est monté dans le trou (9) réalisé dans la cuvette du produit sanitaire et s'étendant jusqu'au canal d'entrée de l'eau propre (14) de sorte que la bouche (13a) du seau (13) sur celui-ci sera face au canal d'eau propre. 35 40
14. Produit sanitaire selon la revendication 1, **caractérisé par le fait que** l'au moins un élément (2.2) utilisé dans l'unité (2) est situé entre le corps extérieur (2.1) et le corps intérieur (2.3), et **par le fait que** ledit au moins un élément d'étanchéité (2.2) est de préférence une rondelle. 45
15. Produit sanitaire selon la revendication 1, **caractérisé par le fait qu'il** comprend en outre une unité de vissage (6) permettant de monter le logement (1) sur la surface du produit sanitaire. 50
16. Produit sanitaire selon la revendication 1, **caractérisé par le fait qu'il** comprend en outre une unité de vissage (7) pour le montage du couvercle supérieur (4) sur le logement (1). 55
17. Méthode d'utilisation de la cuvette du produit sani-

taire selon l'une quelconque des revendications précédentes, comprenant les étapes du procédé consistant à;

- après avoir pressé un bouton-poussoir du réservoir, faire entrer de l'eau à travers la bouche/l'ouverture (13a) située sur le composant n. 3 dans la direction de provenance de l'eau propre alors qu'elle s'écoule librement du canal d'eau propre (14) dans les toilettes, frapper cette zone au moyen du seau (13), puis avancer dans le corps intérieur (2.3) à travers l'ouverture (12a) sur le composant n. 3;
- faire monter la boule (2.4) située au fond du corps intérieur (2.3) et déplacer la boule (2.4) vers le sommet du corps intérieur (2.3) au moyen de l'eau pénétrant dans le corps intérieur (2.3),
- avec ce mouvement de la boule (2.4), ouvrir le trou de passage (2.5b) du liquide situé dans la partie inférieure ou au fond du corps intérieur (2.3) et faire passer le matériau liquide hygiénique présent dans le corps intérieur (2.3) à travers le trou (9) disposé sur la toilette, puis le mélanger avec l'eau propre provenant du réservoir et l'écouler enfin dans la cuvette du produit sanitaire,
- pendant l'écoulement de l'eau du réservoir dans la cuvette du produit sanitaire, maintenir la boule (2.4) dans une position vers le haut de manière à fermer le trou (2.5a) pour le passage du liquide situé dans la partie supérieure (sommet) du corps intérieur (2.3), avec le flottage de l'eau pénétrant dans le corps intérieur (2.3),
- lorsque l'eau propre s'écoule du réservoir est terminée, la boule (2.4) devient libre et se déplace dans une direction vers le bas,
- avec la boule (2.4) en mouvement dans la direction vers le bas, ouvrir le trou (2.5a) pour le passage du liquide situé dans la partie supérieure du corps intérieur (2.3), commencer le passage de l'additif hygiénique du logement (1) où le liquide hygiénique est introduit dans le corps intérieur (2.3) au moyen de ce trou, et
- après l'achèvement du mouvement vers le bas de la boule (2.4), positionner celle-ci sur le trou situé au fond du corps intérieur (2.3) de telle sorte que le trou (2.5b) pour le passage de liquide situé sur la partie inférieure (fond) du corps intérieur (2.3) ne permet pas le passage du liquide.

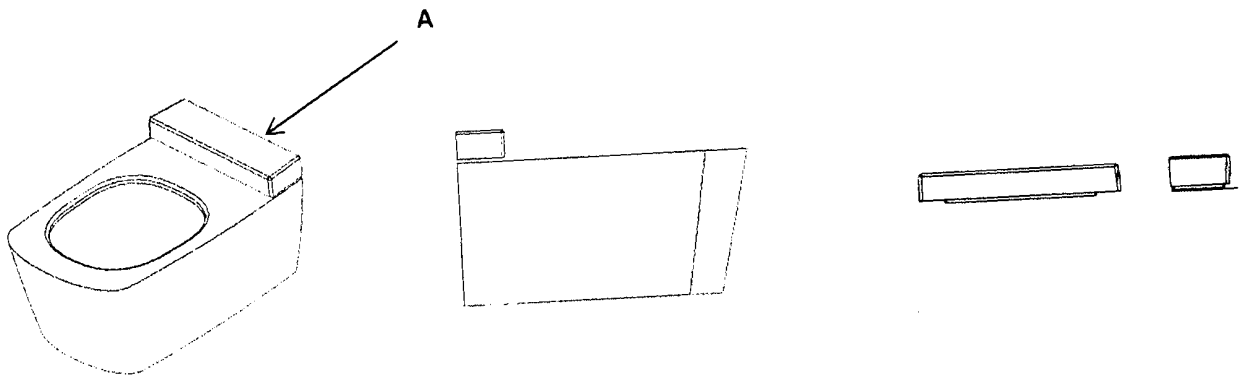


Figure 1

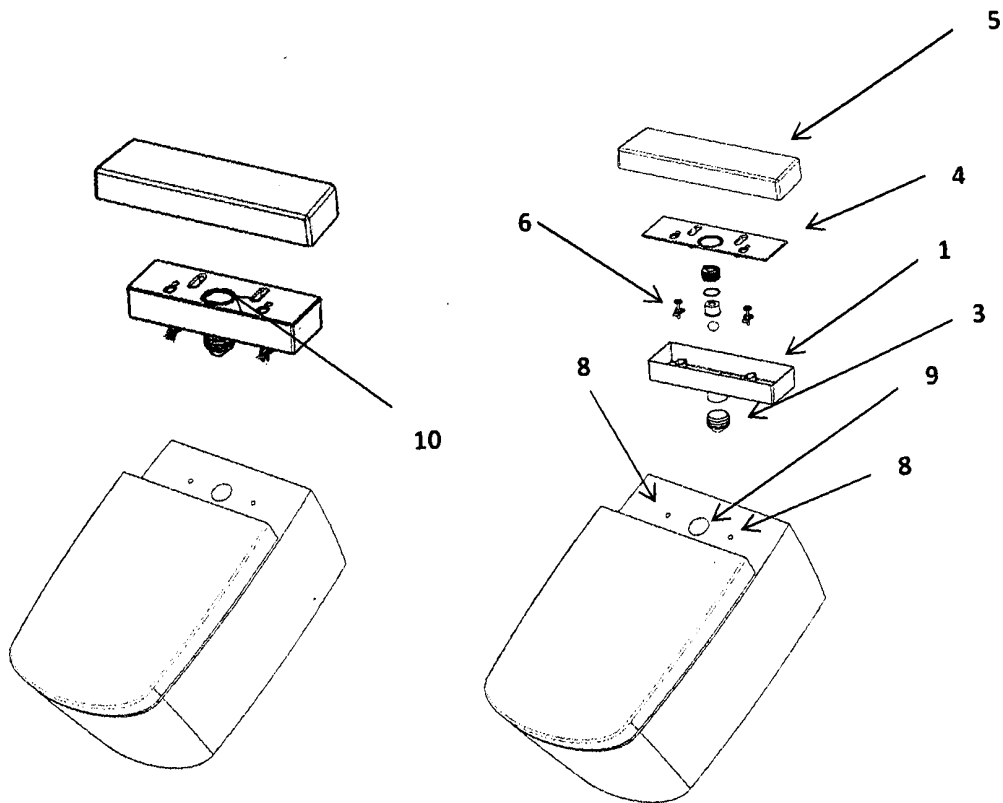


Figure 2

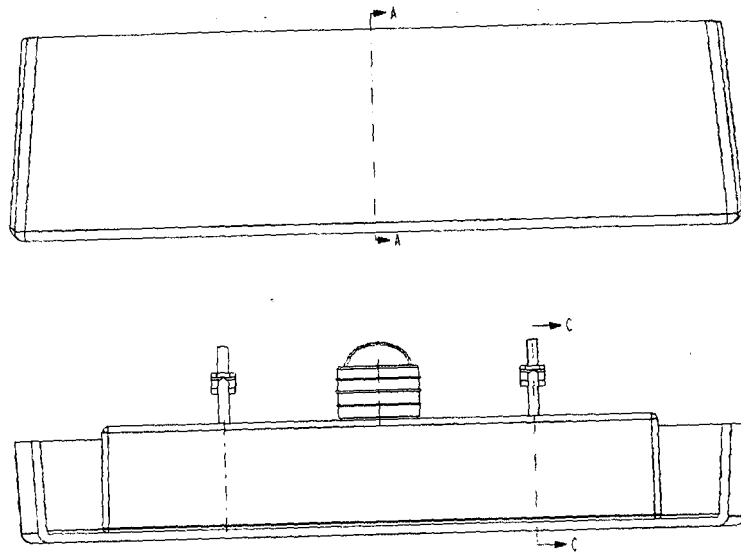


Figure 3

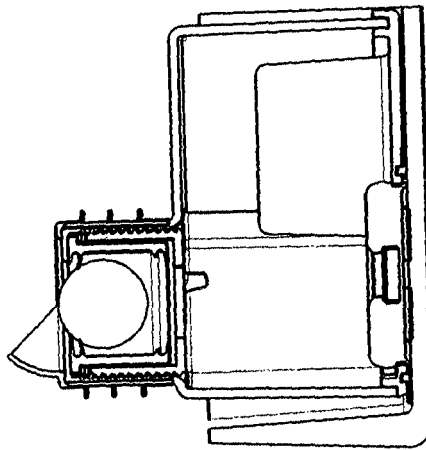


Figure 4

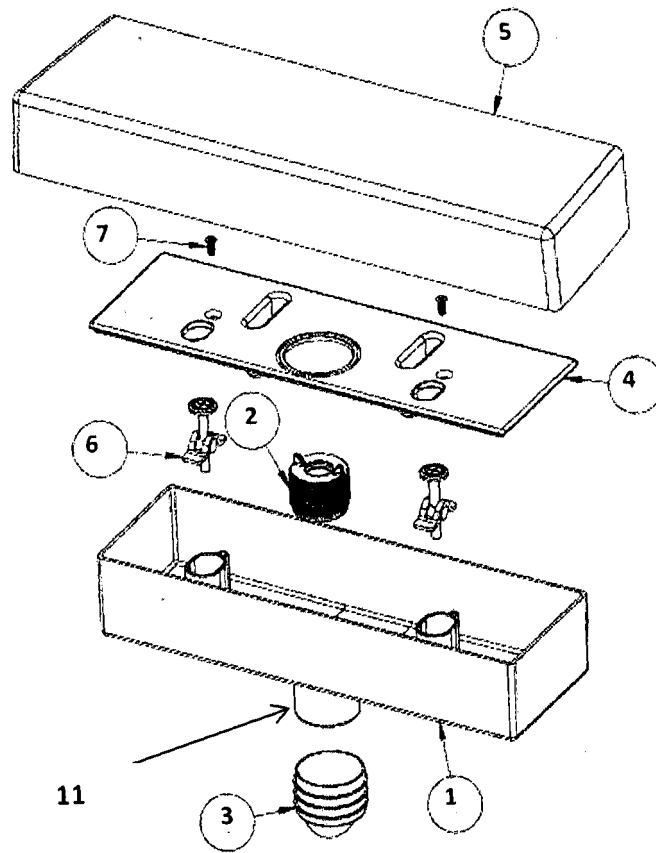


Figure 5

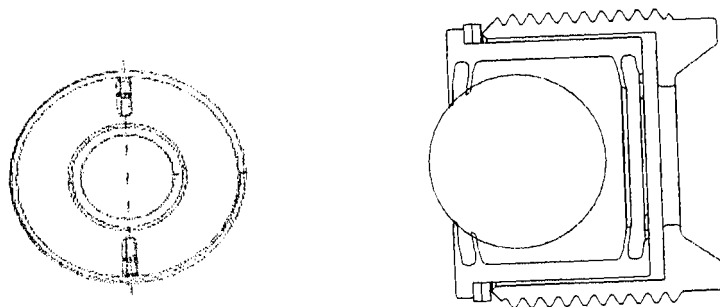


Figure 6

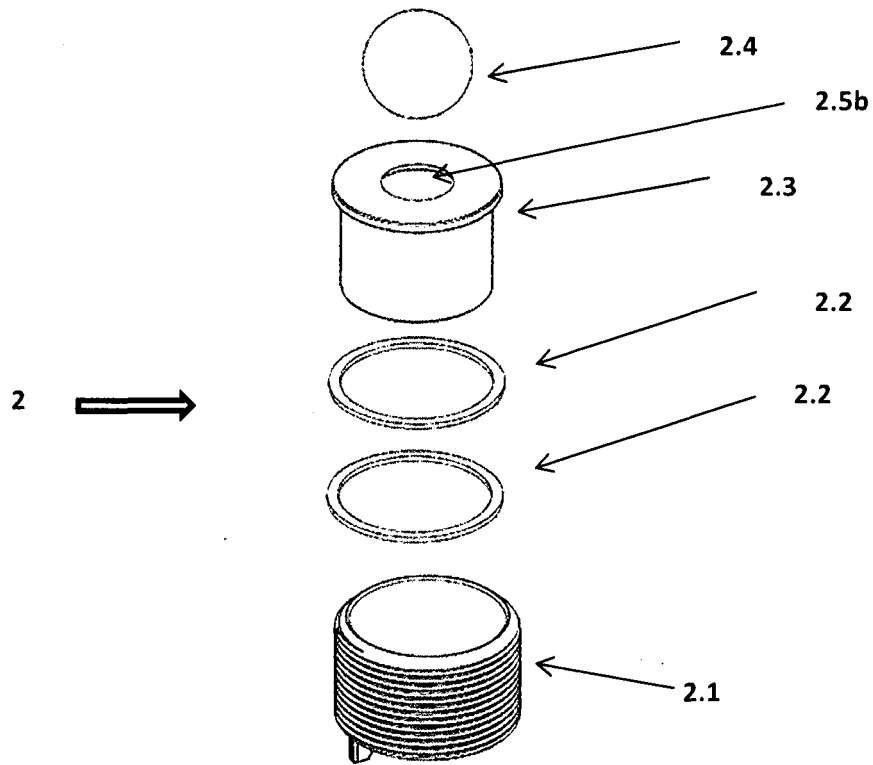


Figure 7

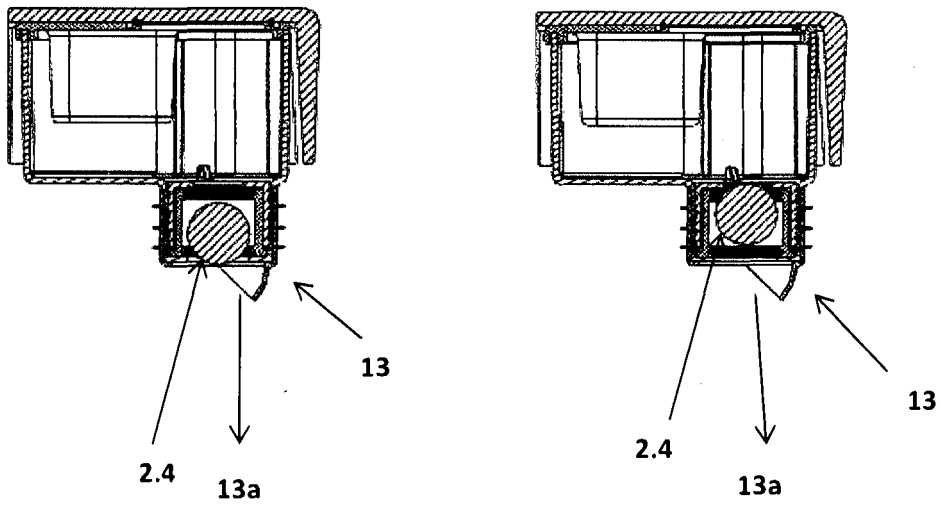


Figure 8a

Figure 8b

Figure 8

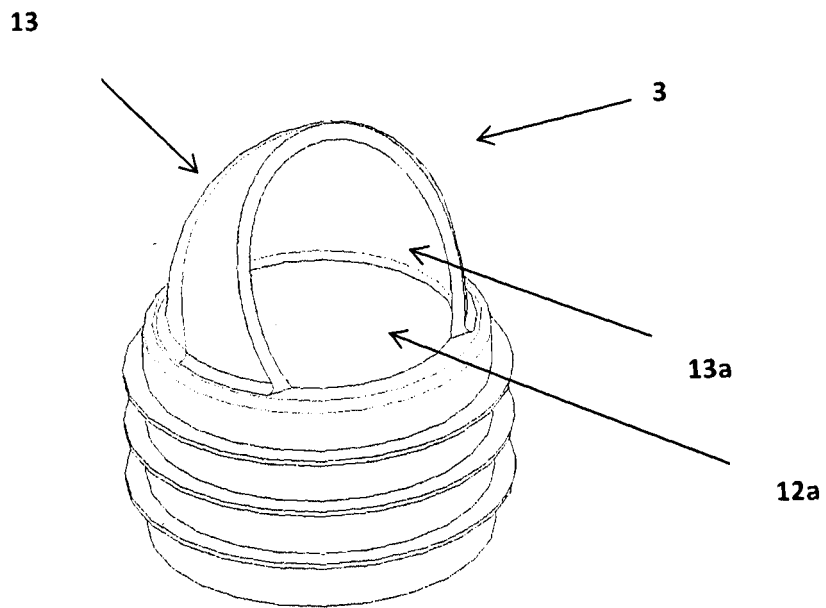


Figure 9

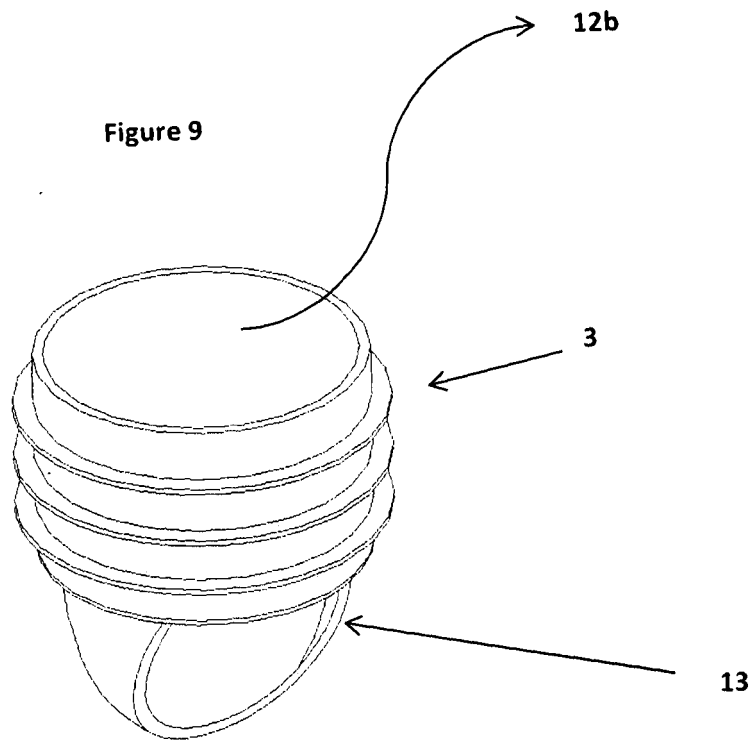


Figure 10

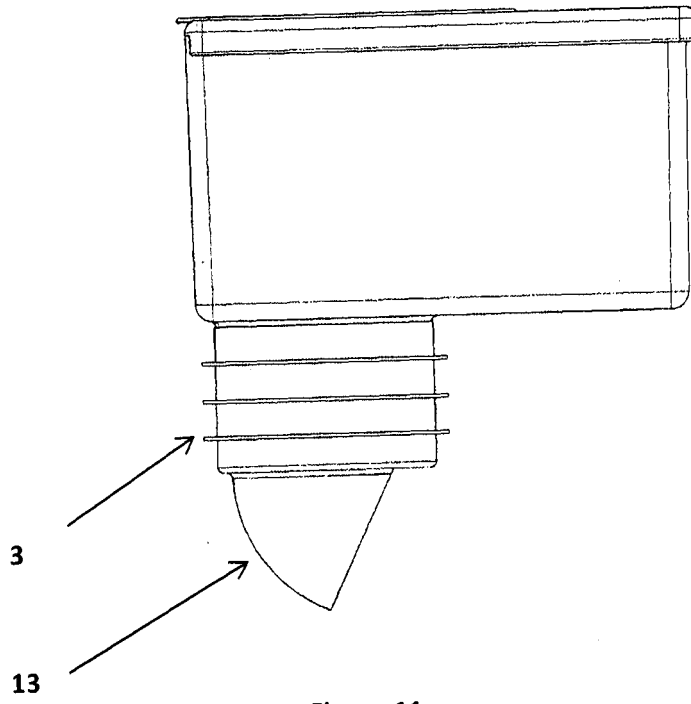


Figure 11

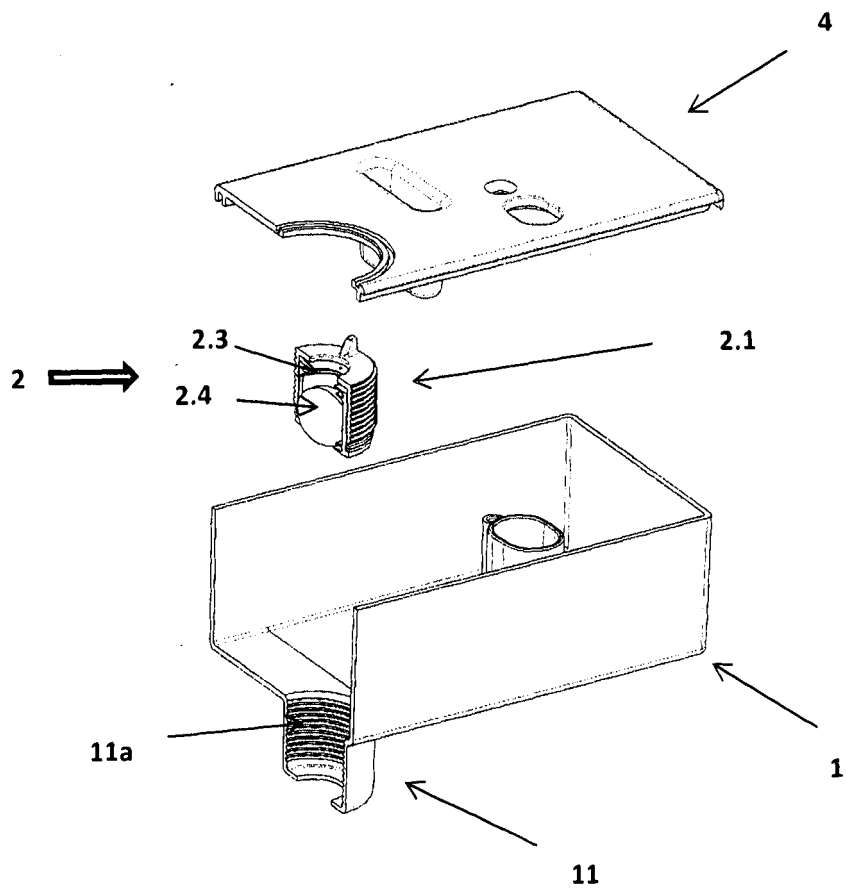


Figure 12

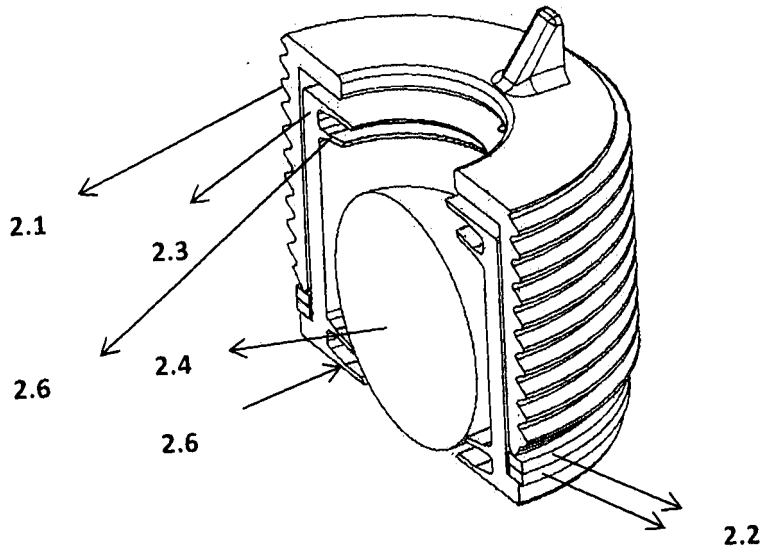


Figure 13

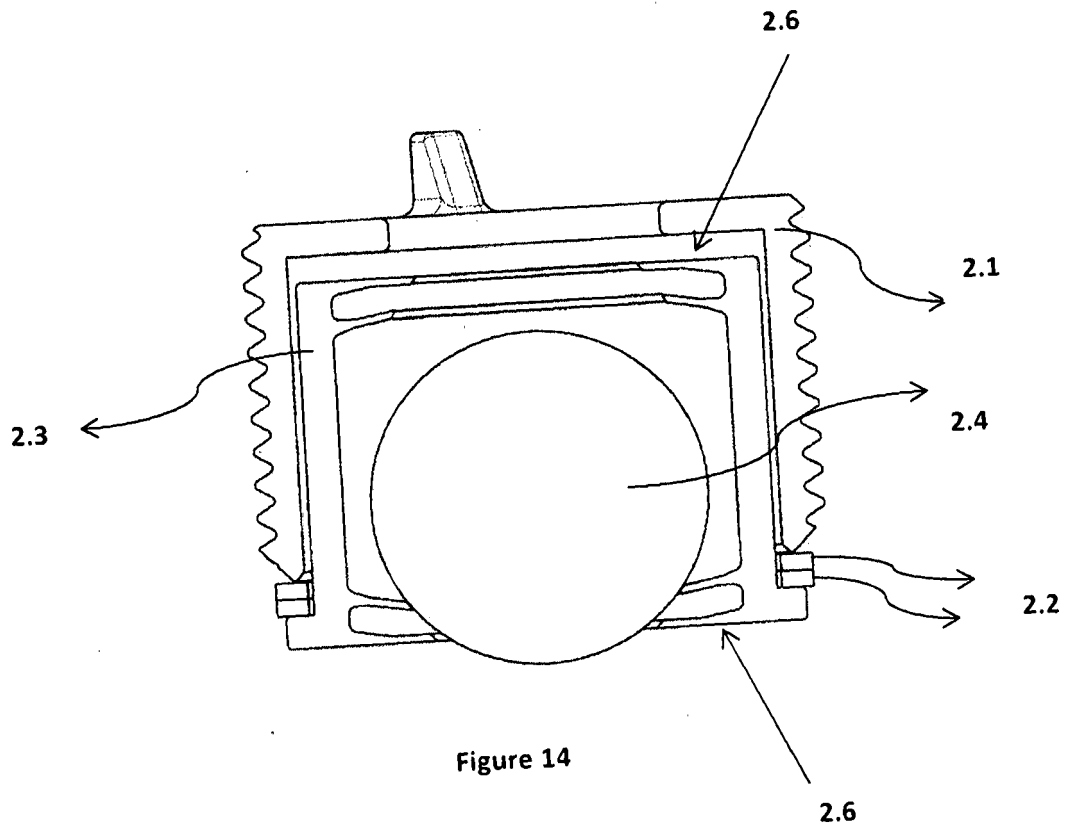


Figure 14

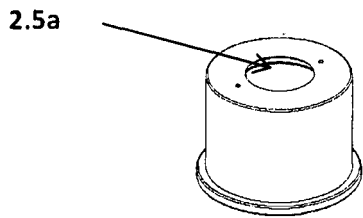


Figure 15a

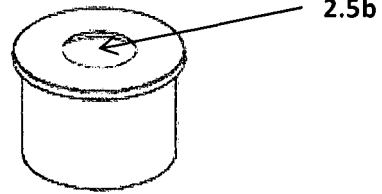


Figure 15b

Figure 15

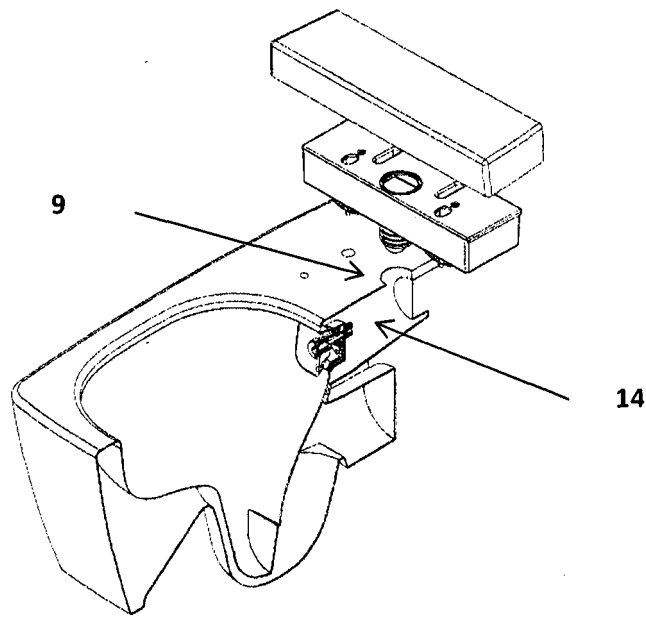


Figure 16

REFERENCES CITED IN THE DESCRIPTION

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