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(54) Toilet assembly

(57) A toilet assembly comprising a bowl (10) and a cistern (20), wherein the cistern (20) comprises an integrated urinal (27). The urinal (27) may have a separate flushing mechanism (241,242,243,244,246) or a waterless odour seal (249). A lid (25) may be present to conceal the urinal (27) in a non-use position and to protect the toilet bowl from splashes when the urinal is used.

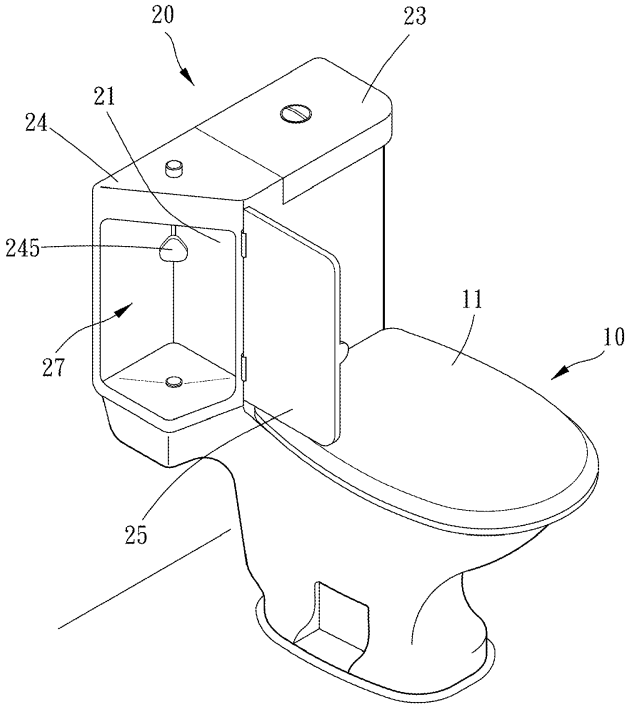

FIG. 1

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a toilet assembly, and more particularly to a toilet assembly having a urinal.

Description of the Prior Art

[0002] A conventional toilet includes a main body, a tank and a flush device. The main body which includes a seat lid is provided for a user to excrete. The flush device is used for flushing the water from the tank into the main body, so that excreta can be flushed into a septic tank or a gutter. However, when male users want to urinate, they need to lift the seat lid and then urinate, so that the urine will not drop or splash on the seat lid. However, it is inconvenient for males to lift the seat lid before urinating, so there is a dual purpose toilet, as disclosed in TWM338858. The dual purpose toilet has a flexible tube 37 connecting to a liquid directing member 35 (as shown in FIG. 1 of said patent). A user needs to pull out the flexible tube 37 and point it to the liquid directing member 35 when urinating. However, it is complicated to urinate in said way, and the flexible tube 37 may stink because the tube 37 has many winding portions where the urine is difficult to be flushed out.

[0003] The present invention is, therefore, arisen to obviate or at least mitigate the above mentioned disadvantages.

SUMMARY OF THE INVENTION

[0004] The main object of the present invention is to provide a toilet assembly which combines with a urinal and a toilet. The toilet assembly not only is convenient to be used but also saves the space in the bathroom.

[0005] To achieve the above and other objects, the present invention provides a toilet assembly which includes a case and a toilet bowl. The toilet bowl extends from a bottom of the case and toward a direction away from the case, wherein the case is disposed with at least one partition. The partition divides an interior of the case into a first reservoir area and a urinal area. The first reservoir area is adapted to reserve water. At least one surface of the urinal area is formed with an opening, and the opening is adapted for a user to urinate.

[0006] Thereby, the urinal area is formed in one piece with and on one side of the toilet assembly, so males can urinate in front of the urinal area at one side of the case in order to save the water use. Moreover, males just need to stand in front of the urinal area without lifting the seat lid. Therefore, it can save the space in the bathroom and also be convenient to use.

[0007] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiment (s) in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG 1 is stereogram showing the first preferred embodiment in accordance with the present invention;
FIG. 2 is a sectional view showing the first preferred embodiment in accordance with the present invention;
FIG. 3 is a schematic view showing the first preferred embodiment in accordance with the present invention, wherein the urinal area is flushed by the flush device;
FIG. 4 is a sectional view showing the second preferred embodiment in accordance with the present invention;
FIG. 5 is a stereogram showing the third preferred embodiment in accordance with the present invention;
FIG. 6 is a stereogram showing the forth preferred embodiment in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] Please refer to FIG. 1 to FIG. 4. A toilet assembly of the present invention includes a toilet bowl 10 and a case 20. The toilet bowl 10 extends from a bottom of the case 20 and toward a direction away from the case 20. The toilet bowl 10 has a seat lid 11, a recess body, and a drain channel. The seat lid 11 is annularly disposed around a periphery of the recess body, and the drain channel communicates with a bottom of the recess body. The case 20 is formed as a rectangle and is disposed with at least one partition 21. The partition 21 divides an interior of the case 20 into a first reservoir area 23 and a urinal area 24. The first reservoir area 23 is adapted to reserve water. At least one surface of the urinal area 24 is formed with an opening, and the opening is used for a user to urinate. The case 20 includes a first inlet pipe 201 which is adapted to direct water into the first reservoir area 23. Preferably, the urinal area 24 can be disposed at one of two sides of the case 20 according to the space of the bathroom. And a horizontal extending direction of the opening forms a preset inclined angle to an extending direction of the toilet bowl 10. Please refer to FIG. 1 for the first preferred embodiment of the present invention. The case 20 further comprises a board 25 which is pivoted to one side of the opening of the urinal area 24. Preferably, the board 25 is pivoted to one side of the urinal area which is close to the toilet bowl 10. In other possible embodiments, the case 20 can further includes

another board (unshown) which is pivoted to another side of the opening of the urinal area 24.

[0010] Please refer to FIG. 2 and FIG. 3 for the first preferred embodiment of the present invention. The urinal area 24 includes a tank 26, a urine collection recess 27, an inlet channel 28 and a flush channel 29. The tank 26 defines a second reservoir area 261, and the urine collection recess 27 is disposed under a bottom wall of the tank 26. The inlet channel 28 is disposed on the partition 21. The inlet channel 28 communicates between the first reservoir area 23 and the second reservoir area 261, so that water can flow from the first reservoir area 23 into the second reservoir area 261. The flush channel 29 communicates between the second reservoir area 261 and the urine collection recess 27. Preferably, a bottom of inlet channel 28 is within a preset distance from the bottom wall of the tank 26, so that the partition 21, which is between the bottom of the inlet channel 28 and the bottom wall of the tank 26, is formed as a blocking wall.

[0011] The urinal area 24 includes a flush device. The flush device comprises a switch and a valve which is disposed at one end of the switch. The switch controls the valve to move between an open position and a close position, so that the valve selectively makes water flow from the flush channel 29 into the urine collection recess 27. In the first preferred embodiment, the switch includes a press member 241 and an elastic member 242. The elastic member 242 is disposed between the press member 241 and the urinal area 24. The valve contains a rod 243 and a block plate 244. The rod 243 has a first end and a second end. The first end protrudes from the urine collection recess 27, and the second end which connects to the press member 241 penetrates through the flush channel 29 and the second reservoir area 261. The block plate 244 is disposed on the rod 243 and is located at one side of the urine collection recess 27. The elastic member 242 provides an elastic force so as to elastically reposition the press member 241 between a first position and a second position, and the block plate 244 is then driven to move between an open position and a close position. In other possible embodiments, the switch can be an infrared sensing device. Further, the urinal area 24 further comprises a splash plate 245. The splash plate 245 is fixed in the urine collection recess 27 and is adjacent to the flush channel.

[0012] Please refer to FIG. 4 for the second embodiment of the present invention. The difference between the first and the second embodiment is that the urinal area 24 includes a urine collection recess 27, a flush channel 29 and a second inlet pipe 246. The flush channel 29 communicates between the second inlet pipe 246 and the urine collection recess 27. The second inlet pipe 246 is used for directing water therein, so that the water then directly flows out from the flush channel 29. The second inlet pipe 246 and the first inlet pipe 201 share an inlet duct 202. In other possible embodiments, the first inlet pipe 201 and the second inlet pipe 246 can respectively connect to a different inlet duct.

[0013] Please refer to FIG. 5 for the third embodiment of the present invention. The difference between the first and the third embodiment is that the height of the first reservoir area 23 in the case 20 of the third embodiment is only half of the first reservoir area of the first embodiment. But the height of urinal area 24 in relation to the toilet bowl 10 in the third embodiment is the same as the first embodiment.

[0014] Please refer to FIG. 6 for the forth embodiment of the present invention which provides a no-flush urinal area. The difference between the first and the forth embodiment is that the urinal area 24 is disposed with a no-flush apparatus which can prevent the odor of the urine from being emitted, wherein the urinal area only defines a urine collection recess 27. The bottom of the urine collection recess (27) is formed as a funnel which is inclined. The urinal area 24 includes an outlet 247, a receiving recess 248, and a filter core 249. The outlet 247 is located at bottom of the urinal area 24, and the receiving recess 248 communicates between the outlet 247 and the urine collection recess 27. The filter core 249 is received in the receiving recess 248 so as to prevent impurities from flowing into the outlet. Further the filter core 249 contains a layer of isolating liquid which can deodorize urine.

[0015] Thereby, the case of the toilet assembly of the present invention can store water and can be used as a urinal. Moreover, the toilet assembly can be installed in a small lavatory which cannot accommodate a conventional urinal and a toilet. The male users just need to stand at one side of the toilet assembly and toward the opening of the urinal area when urinating. As a result, the male users can urinate without lifting the seat lid. Furthermore, the amount of flushing water for the urinal area is less than two liters. One part of the case is formed as the urinal area, so that the amount of water stored in the case is less than a conventional toilet, but the amount of the water in the case is still enough for the use. Therefore, the toilet assembly can save more water than a conventional toilet.

[0016] In addition, the board can prevent urine from splashing on the seat lid when a male user urinates. When the board covers the urinal area, the odor of the urine is not emitted from the urinal area, and the urinal area becomes a part of the case. Further, when a user presses the switch of the toilet assembly of the first embodiment, the water in the first reservoir area flows out from an outlet pipe into the recess body. Due to the block of the blocking wall, a small amount of water in the second reservoir area will flow into the first reservoir area, and the rest water will remain in the second reservoir area so as to save the water. Besides, when the switch of the flush device is pressed to move the block plate to the open position, the block plate is away from the flush channel so that the water flushes into the urine collection recess and against the splash plate. In this way, the water splashes on the wall of the urine collection recess so as to wash out the urine remaining in the urine collection

recess.

[0017] The urinal area comprises a filter core. The bottom of the urine collection recess is formed as a funnel which is inclined, so that urine flows into the receiving recess by gravity instead of remaining in the urine collection recess. The filter core can remove the odor and the impurities of the urine, and the water of the urine flows through the filter core and then flows into the outlet. Accordingly, the urinal area can discharge the urine completely without flushing water therein so as to save water.

Claims

1. A toilet assembly comprising:

a case (20);
a toilet bowl (10), extending from a bottom of the case (20) and toward a direction away from the case (20);
wherein the case (20) is disposed with at least one partition (21), the partition (21) divides an interior of the case (20) into a first reservoir area (23) and a urinal area (24), the first reservoir area (23) is adapted to reserve water, at least one surface of the urinal area (24) is formed with an opening,
and the opening is adapted for a user to urinate.

2. The toilet assembly of claim 1, wherein the urinal area (24) is disposed at one of two sides of the case (20), and a horizontal extending direction of the opening forms a preset inclined angle to an extending direction of the toilet bowl (10).

3. The toilet assembly of claim 2, wherein the urinal area (24) comprises a tank (26), a urine collection recess (27), an inlet channel (28), and a flush channel (29), the tank (26) defines a second reservoir area (261), the urine collection recess (27) is disposed under a bottom wall of the tank (26), the inlet channel (28) is disposed on the partition (21), the inlet channel (28) communicates between the first reservoir area (23) and the second reservoir area (261), so that water flows from the first reservoir area (23) into the second reservoir area (261), and the flush channel (29) communicates between the second reservoir area (261) and the urine collection recess (27).

4. The toilet assembly of claim 3, wherein a bottom of the inlet channel (28) is within a preset distance from the bottom wall of the tank (26), so that the partition (21), which is between the bottom of the inlet channel (28) and the bottom wall of the tank (26), is formed as a blocking wall.

5. The toilet assembly of claim 2, wherein the case (20) comprises a first inlet pipe (201), the first inlet pipe (201) is adapted to direct water into the first reservoir area (23), the urinal area (24) comprises a flush channel (29), a urine collection recess (27), and a second inlet pipe (246), the flush channel (29) communicates between the second inlet pipe (246) and the urine collection recess (27), the second inlet pipe (246) is adapted to direct water therein, so that the water flows out from the flush channel (29) directly.

6. The toilet assembly of claim 1, wherein the urinal area (24) defines a urine collection recess (27), the urinal area (24) comprises an outlet (247), a receiving recess (248), and a filter core (249), the outlet (247) is located at bottom of the urinal area (24), the receiving recess (248) communicates between the outlet (247) and the urine collection recess (27), the filter core (249) is received in the receiving recess (248), and the filter core (249) contains a layer of isolating liquid.

7. The toilet assembly of claim 1, wherein the urinal area (24) comprises a flush device, the flush device comprises a switch and a valve, the valve is disposed at one end of the switch, the switch controls the valve to move between an open position and a close position, so that the valve selectively makes water flow from the flush channel (29) into the urine collection recess (27).

8. The toilet assembly of claim 7, wherein the switch comprises a press member (241) and an elastic member (242), the elastic member (242) is disposed between the press member (241) and the urinal area (24), the valve comprises a rod (243) and a block plate (244), the rod (243) comprises a first end and a second end, the first end protrudes from the urine collection recess (27), the second end which connects to the press member (241) penetrates through the flush channel (29) and the second reservoir area (261), the block plate (244) is disposed on the rod (243) and located at one side of the urine collection recess (27), the elastic member (242) provides an elastic force so as to elastically reposition the press member (241) between a first position and a second position, the block plate (244) is also driven to move between an open position and a close position.

9. The toilet assembly of claim 8, wherein the urinal area (24) further comprises a splash plate (245) which is fixed in the urine collection recess (27) and adjacent to the flush channel (29).

10. The toilet assembly of claim 1, wherein the case (20) further comprises a board (25) which is pivoted to one side of the opening of the urinal area (24).

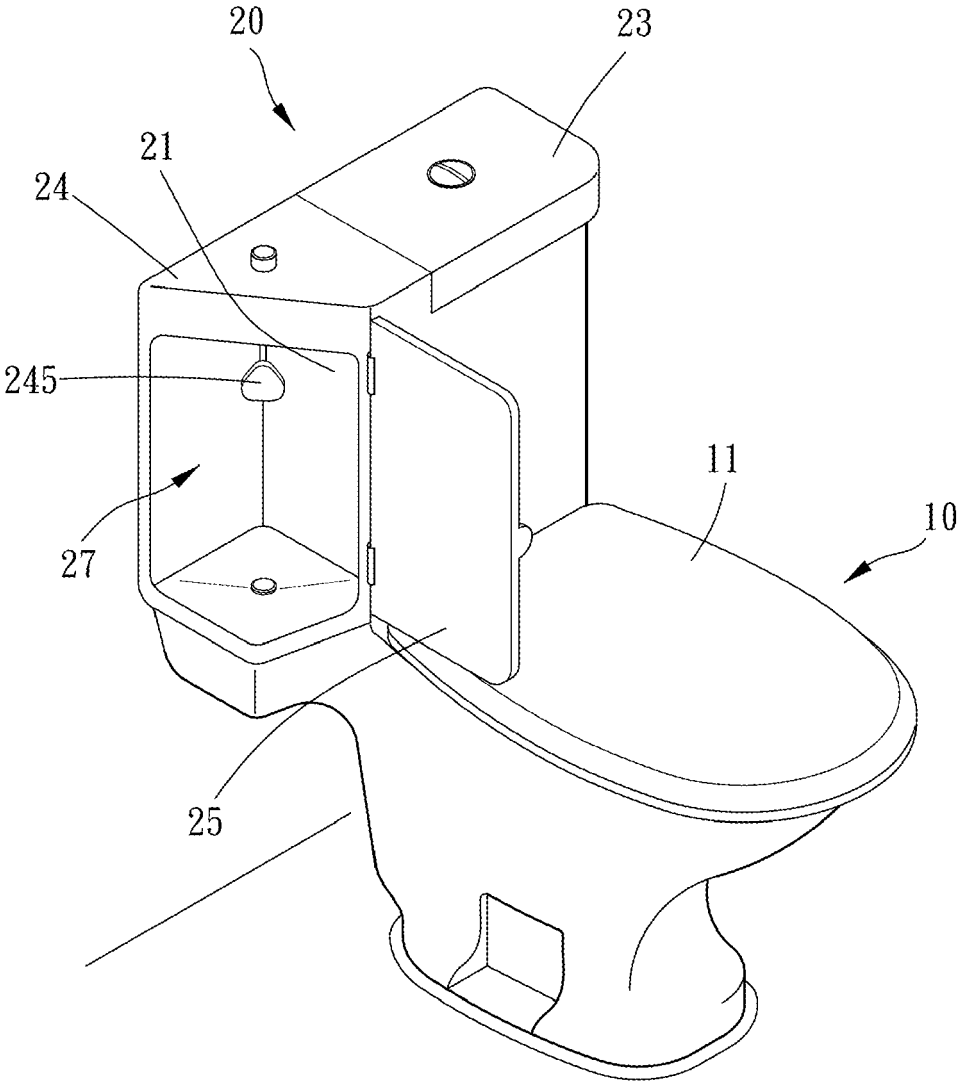

FIG. 1

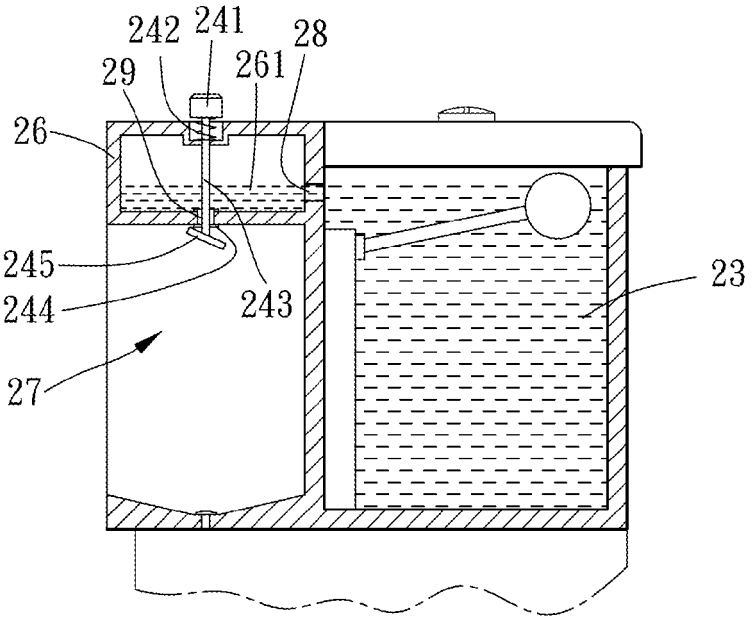

FIG. 2

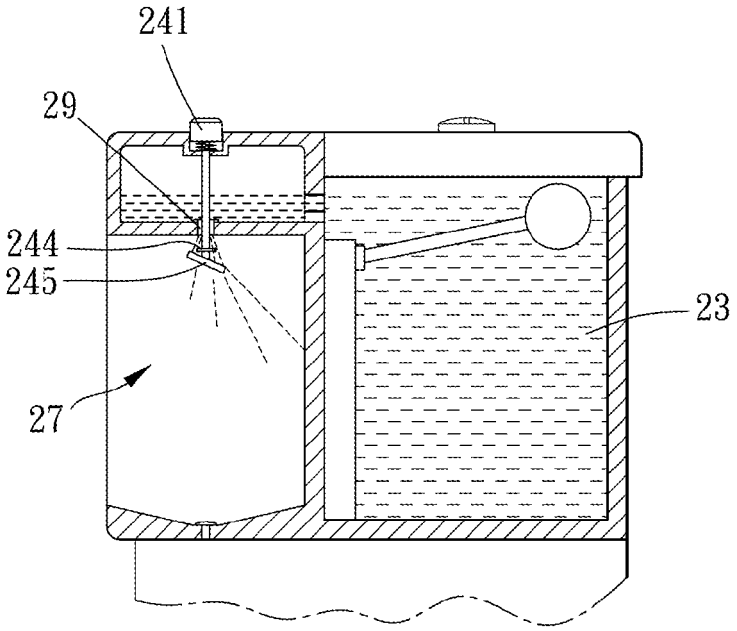

FIG. 3

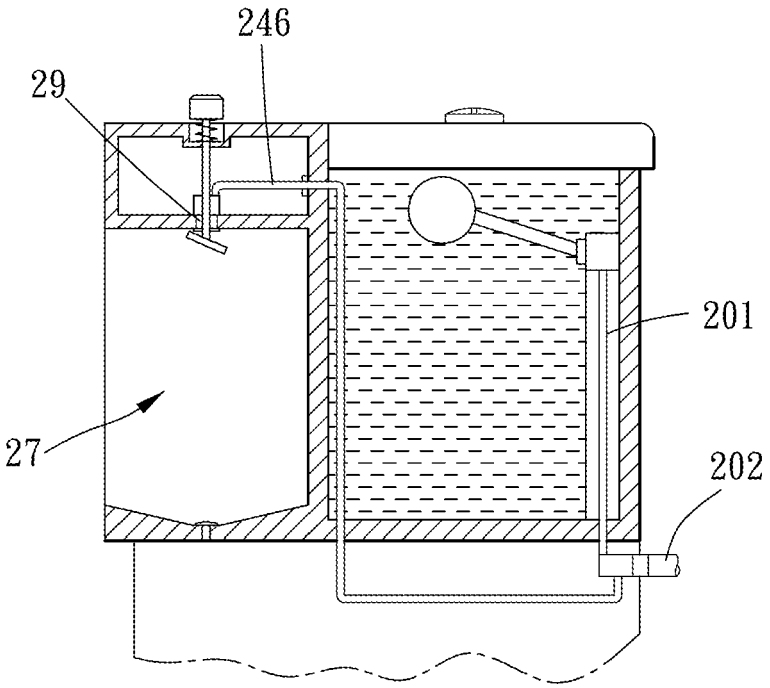

FIG. 4

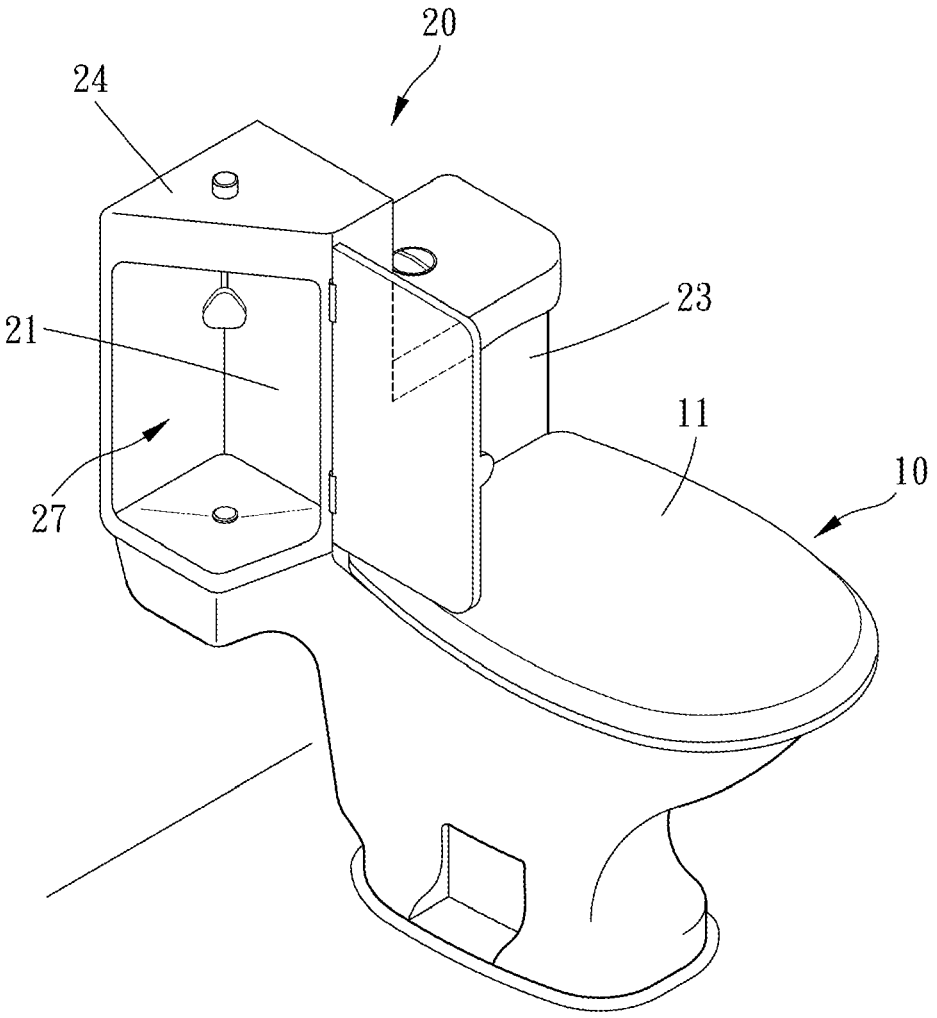

FIG. 5

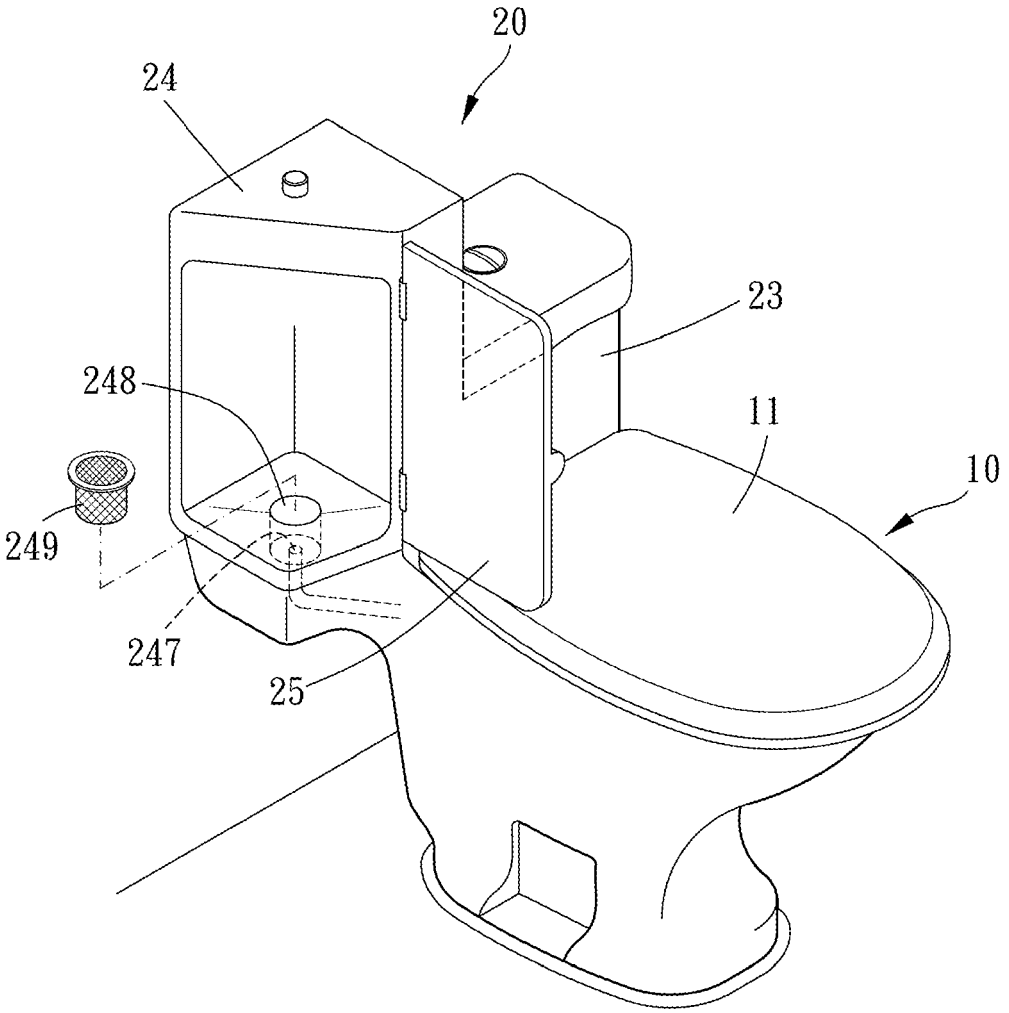

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 2279

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 May 2011	Horst, Werner

CATEGORY OF CITED DOCUMENTS

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