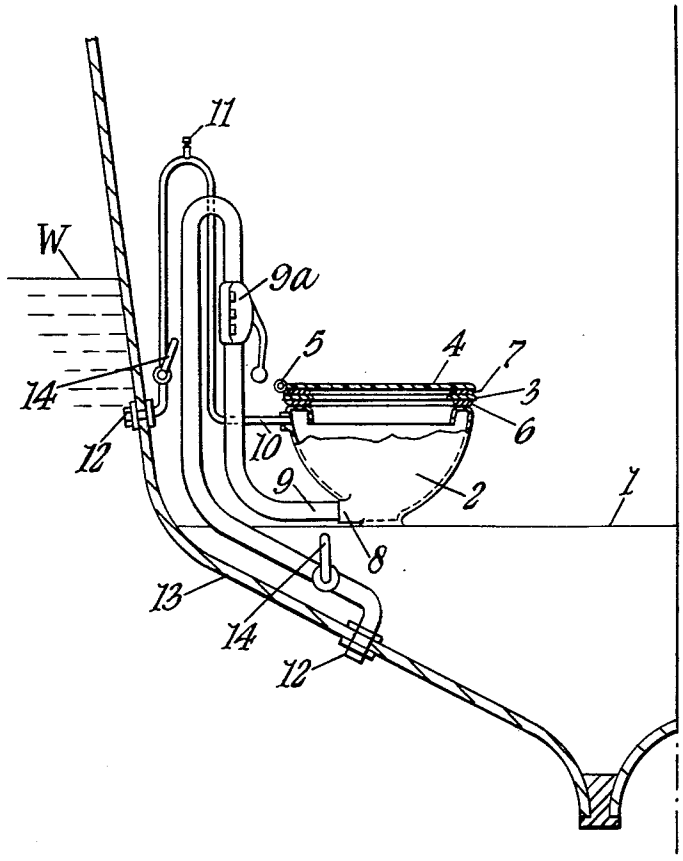
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WATER CLOSETS

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WATER CLOSETS

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This invention relates to water closets, more particularly, but not exclusively, intended for installation in small marine craft, and has been devised with a view to providing an improved and efficient apparatus which is of more simple construction and easier to operate than those at present in use.

The water closet according to the invention comprises a bowl having a lid which is airtight when closed and an inlet to be connected to a water supply, and a pump mounted wherever convenient for discharging excrement from the bowl and creating a partial vacuum therein such as will cause spontaneous entry of flushing water through the inlet into the bowl.

Conveniently an air bleed-hole is incorporated in the pipe connecting the water inlet with the water supply to prevent the formation of a syphon and to cause the flushing water to enter the bowl as a spray or mist.

In the accompanying drawing there is schematically illustrated by way of example a typical water closet according to the invention as installed in the toilet compartment of a small sailing yacht.

Referring now to the drawing there is shown bolted to the floor **1** of the toilet compartment a water closet bowl **2** equipped with a seat **3** and a lid **4** of the usual type mounted on a common hinge pin **5** for raising and lowering as required. Secured on the underside of the seat **3** is a neoprene gasket **6** of semi-circular cross-section and a similar gasket **7** is secured to the underside of the lid **4**.

Coupled between the outlet **8** at the bottom of the bowl **2** and the outlet of an exhaust pipe **9** is a high efficiency diaphragm pump **9***a* having inlet and outlet passages of at least 1½ inches diameter controlled by neoprene flap valves. Near the top of the bowl **2** there is connected a flushing water-inlet pipe **10** of lesser diameter than exhaust pipe **9** having an air inlet-orifice **11**. Both the pipes **9** and **10** terminate in skin fittings **12** in the hull **13** below the normal water line W and are looped upwardly above this level to avoid flooding. The pipes may additionally be fitted with stop cocks **14** if desired.

In operation, after the water closet has been used, the seat **3** and lid **4** are lowered and the pump is operated to cause discharge of excrement and water into exhaust pipe **9**. Simultaneously, or directly thereafter a partial vacuum is created in the bowl **2** because the seat **3** and lid **4** constitute an airtight seal and this causes water to be drawn up pipe **10** and, due to the orifice **11**, enter the bowl **2** as a spontaneous flushing spray. Thus after very few strokes of the pump handle the bowl is clean and hygienic, ready to be used again.

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It is to be understood that any type of manually—or power-operated pump for discharging excrement and capable of creating a sufficiently-reduced pressure in the bowl may be fitted directly adjacent the bowl or in the exhaust pipe **9** where convenient.

The water closet as described is considered to be advantageous compared with other installations of this kind, since these almost invariably involve the use of two separate pumps each having an associated valve or cock which requires to be manipulated before and after use.

Although primarily intended for marine use a water closet as above described could also be used domestically or in a caravan, train or aircraft provided that there is a suitable water supply and disposal receptacle.

I claim:

1. A water closet comprising a bowl, a lid for sealing the bowl in an airtight manner, said bowl having an inlet connected to a water supply and a discharge outlet, and a pump mounted wherever convenient for discharging excrement from the bowl and creating a partial vacuum therein such as will cause spontaneous entry of flushing water through the inlet into the bowl.

2. A water closet as set forth in claim 1 in which the pump is manually operable and situated adjacent the bowl.

3. A water closet as set forth in claim 1 in which the pump is power operated.

4. A water closet comprising a bowl, a lid for sealing the bowl in an airtight manner, said bowl having an inlet connected to a water supply and having an air bleed orifice to cause water to issue from the inlet as a spray, and a discharge outlet, and a pump mounted wherever convenient for discharging excrement from the bowl and creating a partial vacuum therein such as will cause spontaneous entry of flushing water through the inlet into the bowl.

5. A water closet as set forth in claim 1 including a seat, the seat and the lid of the bowl each having a sealing gasket of resilient material fitted to their underside.

6. A marine water closet installation comprising a bowl, a seat and a lid, means for sealing the seat to the bowl and the lid to the seat, said bowl having a flushing water inlet connected to a sea water supply, and a pump mounted adjacent the bowl for discharging excrement from the bowl to the sea through a discharge outlet and creating a partial vacuum in the bowl such as will cause spontaneous entry of flushing water through the inlet into the bowl.

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