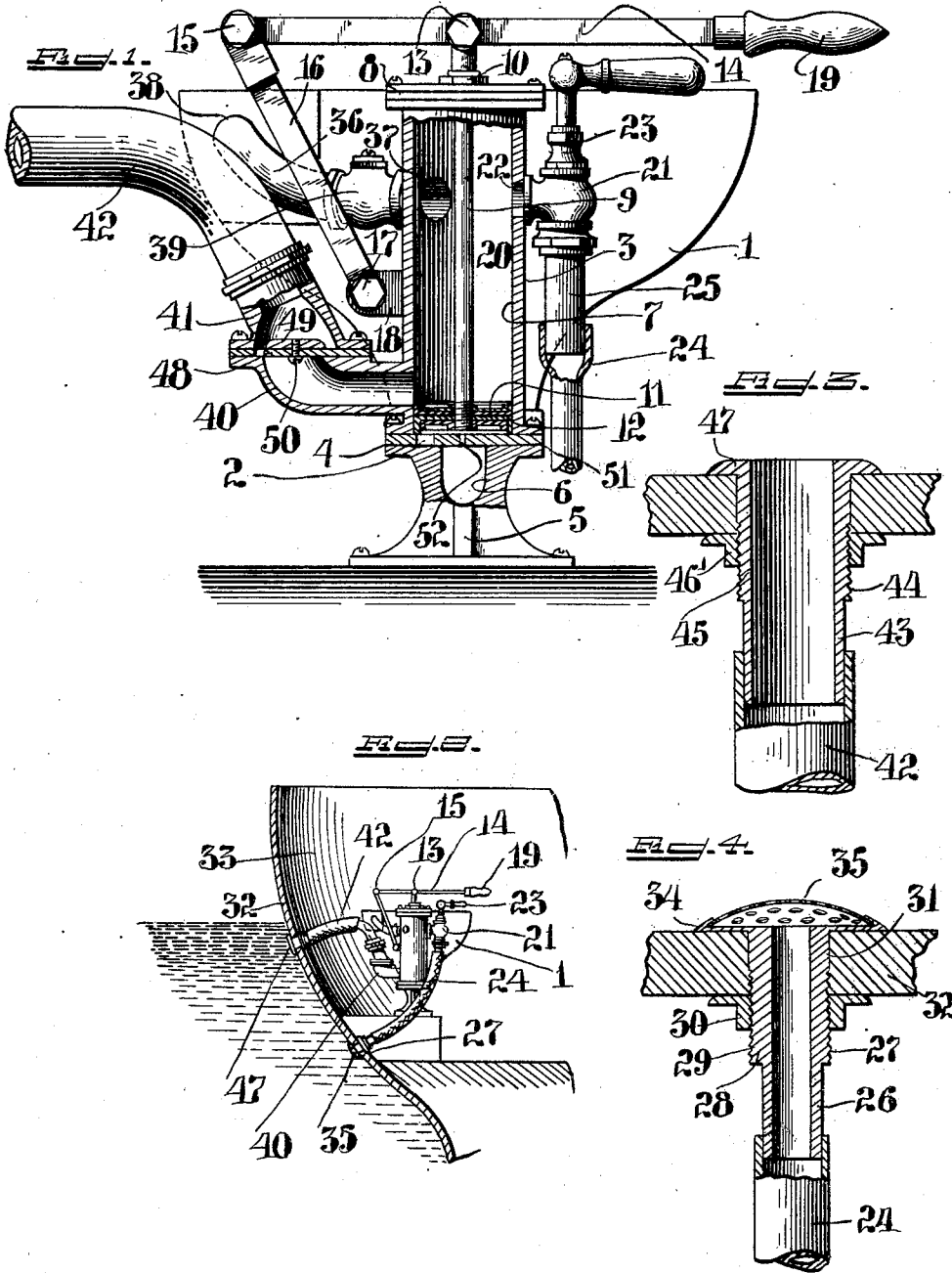


G. A. DIEM.
MARINE WATER CLOSET.
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924,646.

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Attest:
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UNITED STATES PATENT OFFICE.

GUSTAV A. DIEM, OF FLUSHING, NEW YORK.

MARINE WATER-CLOSET.

No. 924,646.

Specification of Letters Patent.

Patented June 15, 1909.

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To all whom it may concern:

Be it known that I, GUSTAV A. DIEM, a citizen of the United States, residing at Flushing, in the county of Queens and State of New York, have invented certain new and useful Improvements in Marine Water-Closets, of which the following is a specification.

The invention relates to improvements in marine water closets particularly applicable for use on small vessels.

The object of the invention is the providing of means associated with a hydraulic pump adapted to permit the free circulation of water through the several connections for flushing purposes.

Another object of the invention is the providing of means associated with the pipe connections of the apparatus for preventing the admission into the operative parts of the device of grass, seaweed, and other foreign materials; also means permitting the free passage of material from the lavatory bowl.

In the following is described in connection with the accompanying drawings one embodiment of the invention, the features thereof being more particularly pointed out hereinafter in the claim.

In the drawings Figure 1 is a vertical sectional view of the pump illustrating in connection therewith the position in which the same is placed relative to a lavatory bowl, the connection leading from said pump being partly shown in elevation; Fig. 2 is a vertical cross sectional view of the side of a vessel illustrating the manner in which the device is connected up with the water intake and exhaust pipe connections; Fig. 3 is a longitudinal sectional view of the discharge hose end connection; and Fig. 4 is a vertical longitudinal sectional view of the fresh water intake hose end connection.

Similar numerals of reference indicate similar parts throughout the several views.

Referring to Fig. 1 of the drawings, 1 indicates a lavatory bowl of the usual form, such as the well-known porcelain bowl, provided with a passage duct 2 leading from said bowl and connecting with pump 3 as at 4. Said pump 3 is supported in any suitable manner such as by casting 5 having formed therein gutter or passageway 6 communicating with discharge duct 2 of said bowl 1. Pump 3 comprises a cylinder 7 provided with water-tight cover 8. 9 indicates a piston rod projecting within said cylinder 7

through stuffing box 10. Said rod 9 has mounted on its lower end piston head 11 carrying packing 12 and is pivotally connected at its upper outer end as at 13 to lever 14 which is in turn pivotally connected as at 15 to link 16 pivotally mounted as at 17 in lug 18 cast with said cylinder 7. Said lever 14 has mounted on its free end a handle 19. The upper interior part 20 of cylinder 7 communicates with feed water connection 21 as at 22, said water connection being controlled by means of valve 23.

24 indicates a pipe connection preferably of flexible material fastened to nipple 25 in any suitable manner. Said pipe connection 24 connects with nipple 26 on the interior end of the water intake hose end connection 27. Said hose end connection comprises a shank 28 preferably cast with nipple 26 and threaded as at 29 to receive lock nut 30. The smooth surface of shank 28 passes through a suitable bore 31 cut in the side structure or wood-work 32 of vessel 33. The extreme outer end of said shank 28 is formed into a discular body casing 34 adapted to receive at that point perforated hood 35. The intake hose end connection is mounted in the structure of the vessel at quite a distance below the water line and provides means permitting an operator of pump 3 to draw in any desired quantity of fresh water, the perforated hood 35 preventing the admission into the working parts of the apparatus of foreign materials such as grass, seaweed, etc.

36 indicates a pipe connection connecting interior part 20 of cylinder 7 as at 37 with bowl 1 at its upper edge indicated as at 38 and is controlled by valve 39. Said pipe connection is utilized exclusively for flushing purposes.

40 indicates a pipe connection preferably cast with cylinder 7 and connects at its outer end with hood 41 suitably fastened on discharge hose connection 42. Said hose connection 42 connects with nipple 43 formed on discharge hose end connection 44. Said discharge hose end connection 44 comprises a shank 45 threaded to receive lock nut 46, the end of said shank having formed thereon a flange 47. The space between flange 47 and lock nut 46 is preferably made smooth and is adapted to be mounted in the side structure or wood-work 32 of vessel 33. The position of said discharge hose end connection 44 is preferably below the water line of the vessel and provides at that point means

for a free discharge of the refuse materials from lavatory bowl 1. Between hood 41 and pipe connection 40 a hinged valve 48 is provided which has fastened thereto a weight 5 49 by means of screw 50, said valve being hinged by inserting the flap of said valve between the face castings of pipe connection 40 and hood 41.

51 indicates a valve mounted between the 10 lower mouth portion of cylinder 7 and discharge ducts 2 and 6, hinged between the bottom of cylinder 7 and top of casting 5 and provided at its central portion with a vent 52. The object of said vent 52 is to provide 15 means for starting the discharge of the water and refuse materials from bowl 1. In case water from outside the vessel should enter discharge hose end connection 44, flap valve 48 will prevent said water from entering the pump cylinder. In the device, when 20 in use and in its normal position, the upper part 20 of cylinder 7 is filled with water, through the opening of valve 23 controlling feed water connection 21.

25 The operation of the device is as follows. In order to flush bowl 1 lever 14 carrying piston 9 is raised forming a compression in part 20 of cylinder 7 and a vacuum on the other side of piston 11, the result being that 30 the water contained in part 20 is forced through pipe connection 36 and bowl 1 is thoroughly flushed, the vacuum formed on the other side of said piston withdrawing the water and refuse materials from said bowl 1 35 through passage ducts 2 and 6 up into cylinder 7 on the under side of said piston head 11. The downward stroke of said piston head 11 closes flap valve 51 and forces the materials contained in the lower part of the 40 cylinder through pipe connection 40 opening flap valve 48 and discharging through hose 42 and hose end connection 44. The fresh water intake is always assured by drawing the water into the pump through hose end 45 connection 27, the pump supplying the lavatory bowl with a free circulation of clean water from the mouth of the intake to the mouth of the discharge.

The device as herein shown and described 50 may be used not only on vessels of small dimensions but may be installed on large vessels, the actuating parts of the pump being operated automatically or from a

power apparatus. By utilizing the intake hose end connection as herein described, 55 the use of seacocks is obviated. The use of seacocks, particularly when they are installed or mounted on a vessel below the water line, has heretofore been found to be of small practical value as, after they 60 have been in use for a short time, the corroding by either fresh or salt waters will practically ruin the metallic portions of said seacocks. Then again, when it is necessary to open or close said cocks it is found 65 that it is quite impossible to readily operate the actuating parts thereof, the result being that the hose end connections are either broken entirely or they are choked up with refuse materials such as grass or seaweed. 70 The device as herein set forth may be varied in many ways, particularly in size, shape and proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any 75 of the advantages.

What I claim and desire to secure by Letters Patent of the United States is:—

In a marine water closet the combination of a bowl, a pump, connections between said 80 bowl and said pump, a flexible water intake connection between said pump and a water supply, a hose end connection between said water supply and said intake connection including a shank adapted to pass through 85 the side of the vessel, a head on said shank adapted to bear against the outside of the vessel, a lock nut on said shank adapted to bear against the inside of the vessel, and a strainer seated in said head for preventing 90 the admission into said connection of solid substances, a flexible discharge connection between said pump and a place of discharge and a refuse discharge hose end connection between said discharge connection 95 and place of discharge provided with an uninterrupted passageway for the discharge of materials therethrough.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GUSTAV A. DIEM.

Witnesses:

ROBERT W. ASHLEY,
ANDREW M. SMITH.