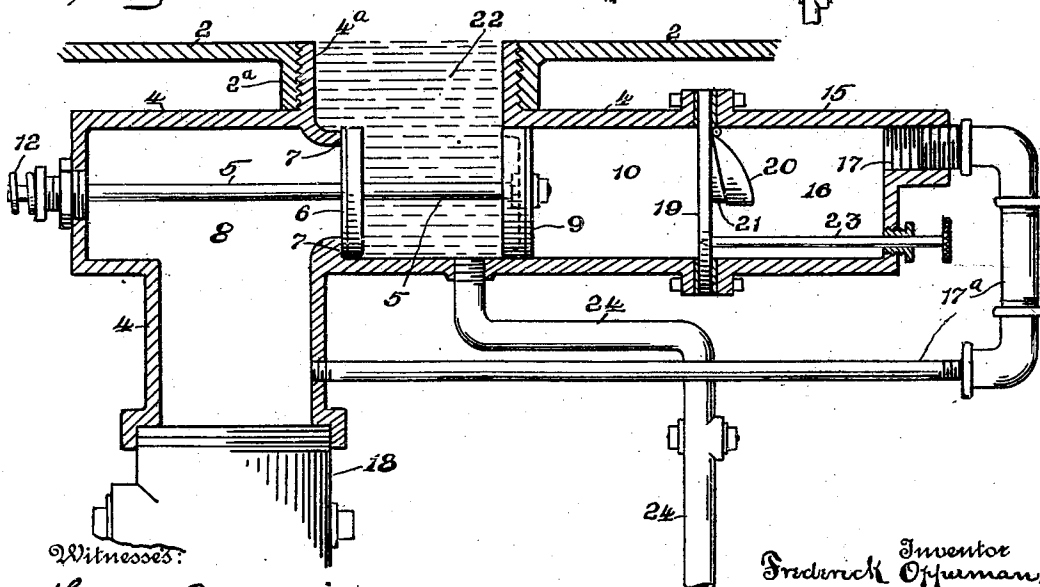


938,018.
Fig. 1.

Fig. 2



Witnesses:
H. A. Lamb.
G. W. Finn.

Frederick Inventor
Opperman.
By his Attorney Geo. D. Phillips.

UNITED STATES PATENT OFFICE.

FREDERICK OPPERMAN, OF GREENWICH, CONNECTICUT.

FLUSHING APPARATUS.

938,018.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed May 12, 1908. Serial No. 432,374.

To all whom it may concern:

Be it known that I, FREDERICK OPPERMAN, a citizen of the United States, and a resident of Greenwich, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Flushing Apparatus, of which the following is a specification.

My invention relates to an improved flushing apparatus for low down tanks for water closets, and it consists in certain details of construction to be more fully set forth in the following specification.

To enable others to understand my invention reference is had to the accompanying drawings, in which:

Figure 1 represents a sectional view of the tank and the cabinet or box inclosing the same, and broken view of the flush pipe and water supply pipe; and Fig. 2 is an enlarged broken sectional view of the lower part of the tank, sectional view of the casing containing the valve, piston and other mechanism, and broken view of the flush pipe and water supply pipe.

1 represents the outside wooden cabinet. 2 the water tank secured therein by the screws 3. The casing 4 has the exteriorly threaded neck or nipple 4^a adapted to enter the interiorly threaded nipple 2^a in the bottom of the tank, thereby opening water communication between the interior of the tank and casing. The longitudinally operating rod 5 carries the valve 6 adapted to normally rest against the seat 7 to close communication between the tank and flushing chamber 8. The piston 9 on the inner end of rod 5 is normally located at the entrance of the piston chamber 10 when the valve is seated. The outer end of rod 5 is supported in the bracket 11 and carries the spring 12 and is adapted to be actuated to unseat the valve through the medium of the bell crank lever 13 and its pulling chain 14.

15 is a removable extension of the casing 4, having the relief chamber 16 and outlet 17 to which is secured the drip pipe 17^a connecting chamber 16 with the flushing chamber 8 for the purpose presently to be more fully described.

18 is the flush pipe proper secured to the casing 4.

Between the flanged portions of the casing 4 and its removable extension 15 is the disk 19 having hinged at its upper end the weighted or gravity clapper 20 normally

resting on its seat 21 to close communication between chambers 10 and 16 when the valve 9 is closed or closing.

One very important feature of my construction is the balancing of the flushing valve 6 and the piston 9 so that they will open as easily under a high pressure as under a low pressure. This is due to the water leg or chamber 22 communicating directly with the interior of the tank 2 so that said valve and piston are always in perfect balance, for their areas being the same the pressure of water on one equals the pressure on the other. When, therefore, the rod 5 is actuated to move the valve 6 from its seat to flush, there will be no outward resistance offered to the valve whatever, and it will open, as before mentioned, as easily when the tank is full of water as when entirely empty. When the rod 5 is actuated to move the valve 6 from its seat to flush, the piston 9 is also moved back in the chamber 10 and the slightest tendency to compress the air ahead of the piston will open the weighted valve 20, thus forcing the air, and what water may have collected in said chamber, through and into the chamber 16 and from thence into the drip pipe 17^a, and when this has been effected this weighted valve will drop on to its seat again. Owing to this balanced condition of the valve 6, all that is necessary to flush, is to give a slight pull on the chain, when the valve will not only open easily and without resistance, but it will remain open after the chain is dropped. In other words, the chain is released after a single impulse or pull to open the valve, and said valve will remain open until all the water has left the tank. When this has taken place, the spring 12 will act to close the valve slowly, and to prevent the piston being air bound on its return the needle valve 23 is provided to admit sufficient air and water through the disk on partition to destroy the suction in the chamber 10. Thus relieving the piston of all drag or resistance on its return. The incoming water from the supply pipe 24 will press equally against the valve 6 and piston 9 to give the same balanced effect in closing as in opening.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

In combination with a water tank inclosed within a cabinet and having an outlet through the cabinet, of a flushing apparatus

comprising a casing detachably secured to
said outlet intermediate of its ends, said cas-
ing having a flushing chamber at one end
and a piston chamber at the other end with
5 an intermediate water chamber communicat-
ing with the tank, a supply pipe opening
into the bottom of said water chamber, a
valve rod, a valve thereon adapted to nor-
mally shut off communication between the
10 flushing chamber and water chamber, a pis-
ton on said rod and located in the piston
chamber, means for manually actuating said
rod to open the valve and automatically
close the same, the water in the water cham-
15 ber adapted to balance the piston and valve
as described, a removable extension for the
casing having a relief chamber, a disk hav-
ing a port and a clapper valve located be-

tween the piston chamber and relief cham-
ber, a drip pipe connecting the relief cham- 20
ber with the flushing chamber, said clapper
valve adapted to be opened by the com-
pressed air in the piston chamber due to the
movement of the piston in one direction, and
25 a needle-valve for admitting air through the
disk to prevent the piston from being air
bound when moving in the opposite direc-
tion, for the purpose set forth.

Signed at Greenwich in the county of
Fairfield and State of Connecticut this 16 30
day of April A. D. 1908.

FREDERICK OPPERMAN.

Witnesses:

LOUIS A. HENNESSEY,
GEORGE CLARKSON.