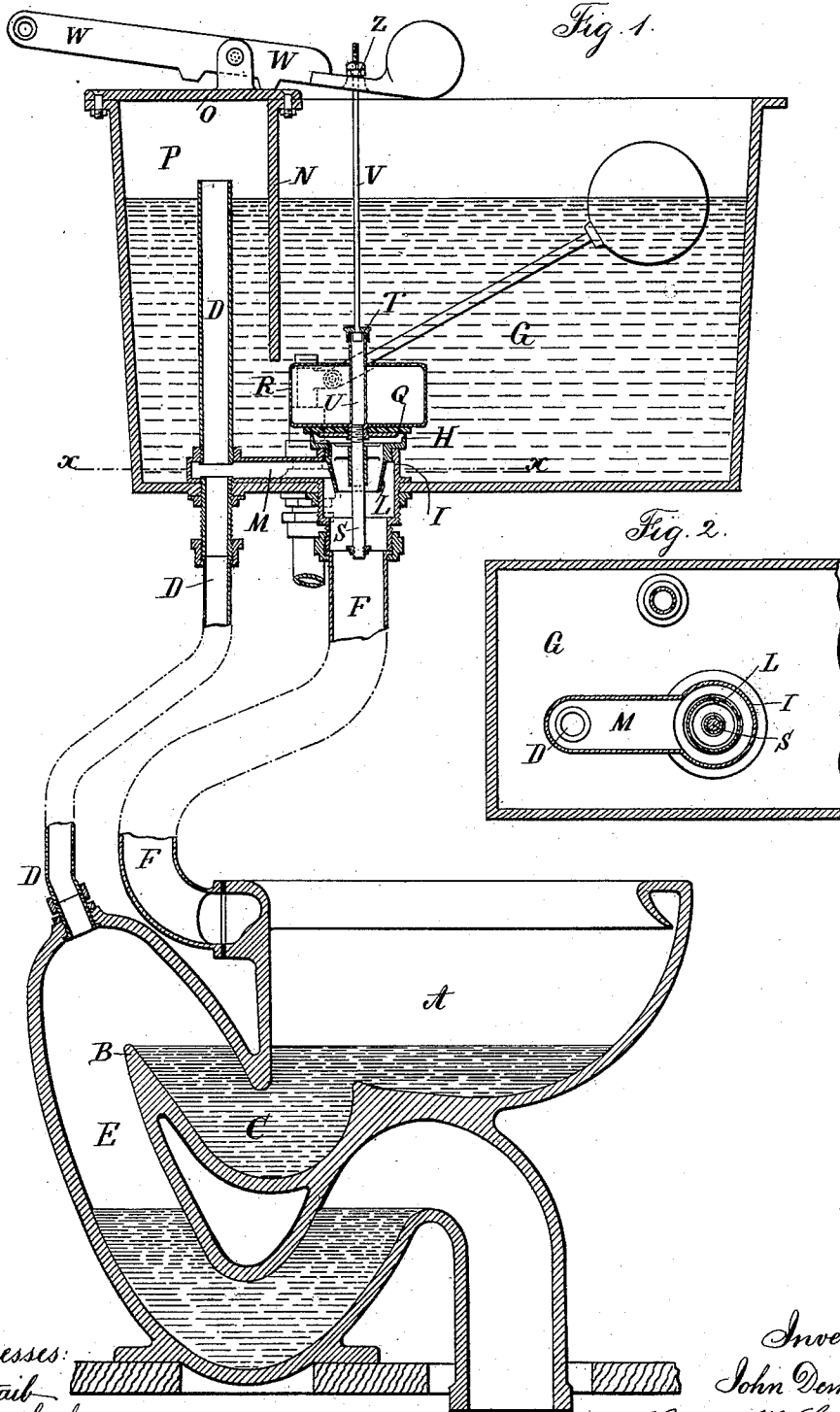


(No Model.)

J. DEMAREST.
WATER CLOSET CISTERN.

No. 378,664.

Patented Feb. 28, 1888.



Witnesses:
J. Stail
Chas. H. Smith

Inventor:
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UNITED STATES PATENT OFFICE.

JOHN DEMAREST, OF NEW YORK, N. Y., ASSIGNOR TO THE J. L. MOTT IRON WORKS, OF SAME PLACE.

WATER-CLOSET CISTERN.

SPECIFICATION forming part of Letters Patent No. 378,664, dated February 28, 1888.

Application filed May 17, 1886. Serial No. 202,352. (No model.)

To all whom it may concern:

Be it known that I, JOHN DEMAREST, of the city and State of New York, have invented an Improvement in Water-Closet Cisterns, of which the following is a specification.

This invention relates to that class of water-closet cisterns in which the water, as it flows to the closet, exhausts the air from the discharge-pipe of the closet between the two traps, and thereby forms a siphon that draws the contents of the closet away rapidly. The cisterns and flushing apparatus heretofore employed having these objects in view are more or less complicated and difficult to keep in repair.

My present invention consists in the combination, with the exhausting-chamber and the pipe leading to the closet, of a valve and float constructed in such a manner that the valve will be sustained by the float until after the air has been admitted into the exhausting-chamber of the closet, thereby insuring the proper flow of water for flushing the closet-basin after the siphon action has been interrupted by the admission of the air.

In the drawings, Figure 1 is a vertical section of my improved cistern and valve and a portion of the closet with which it is connected, and Fig. 2 is a sectional plan view at the line *x x*.

The closet A, with the overflow-dam B and trap C, is of any desired character; and D is the suction-pipe through which the air is exhausted to fill the siphon portion E and cause the water to be drawn out of the basin A and discharged rapidly.

F is the flushing-pipe from the cistern G to the flushing-rim of the closet.

H is the valve-seat within the closet-cistern at the top of the coupling I, that connects the flushing-pipe F with the cistern G.

L is a funnel-shaped exhauster within the coupling and extending downwardly from the seat H, and open at the lower end.

M is a lateral branch pipe connecting with the suction-pipe D where the same passes up inside the cistern G, and there is a partition, N, and air-tight cover O, forming an exhaust-chamber, P, within which the pipe D rises, and is open at the upper end.

The valve-seat H is of a large diameter, and upon it rests the valve Q at the under side of the float R; and S is a guide-stem through a bridge within the valve-seat.

T is a cap at the upper end of the tube U within the float, and through this cap T passes the headed rod V; and W is the pull-lever through which the rod V passes, and Z are lock-nuts on the said rod.

The float R is broad and shallow, and is of sufficient size to easily sustain the valve and its stem when the valve is raised from its seat; but, the valve-seat being of large diameter, the pressure of water will hold the float down as soon as the valve rests upon the seat.

The water is to be supplied into the cistern by a cock and float in any usual manner, and it rises around and submerges the float, and it also rises in the exhaust-chamber P, as the air therein is free to pass out through the upper part of the pipe D, the lateral branch M, and the flushing-pipe F to the rim of the closet. When the closet-pull is operated, the lever W lifts the float R and valve Q, and the float will sustain the valve whether the lever W is allowed to drop or not. The water now rushes through the valve-seat H and through the exhauster L, and the air is thereby drawn out of the lateral branch M, pipe D, chamber P, and siphon E of the closet, bringing the said siphon into action and rapidly discharging the contents of the closet A; and this operation is further promoted by the descent of the water in the cistern G and chamber P. As the water descends the float R also descends; but before the valve Q reaches its seat H the water has descended below the lower edge of the partition N, and thereby admitted air into the chamber P, suction-pipe D, and siphon E, instantly stopping the flow of water through the siphon E. The water now continues to run from the cistern G through the flushing-pipe F to fill the bowl of the closet A up to the top of the overflow-dam B, and the parts are so proportioned that when this takes place the valve Q has descended to and rests upon the seat H, so that the parts assume their normal position, and the cistern is refilled by water admitted by the ball cock and valve, as usual.

I claim as my invention—

The combination, with the flushing-pipe F and an exhausting-pipe, D, leading to the closet, of a supply-cistern, G, and a minus pressure-chamber, P, into which the exhausting-pipe D opens, a valve, Q, at the upper end
5 of the flushing-pipe F, and a float, R, to hold up such valve until after the water has descended to admit air into the minus pressure-chamber P, substantially as set forth.

Signed by me this 11th day of May, A. D. 1886.

JOHN DEMAREST.

Witnesses:

HENRY MORFORD,
MAX GOEBEL.