(No Model.)

J. DEMAREST.

FLUSHING VALVE.

No. 260,952. Patented July 11, 1882.

Fig. 1.

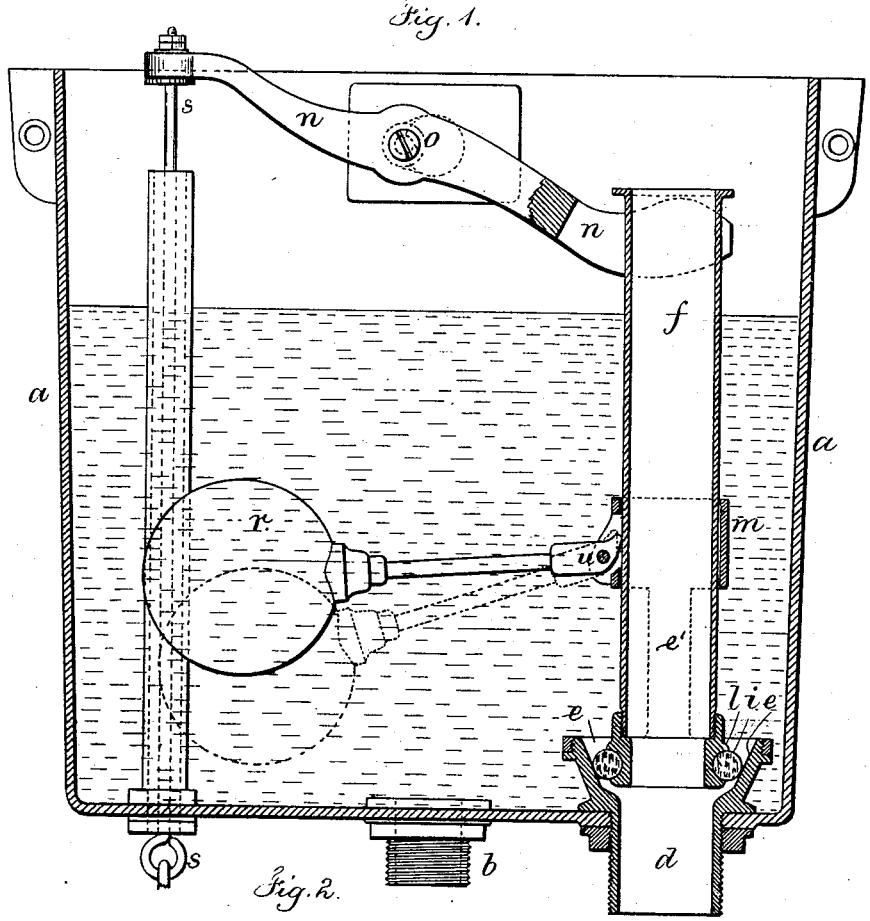
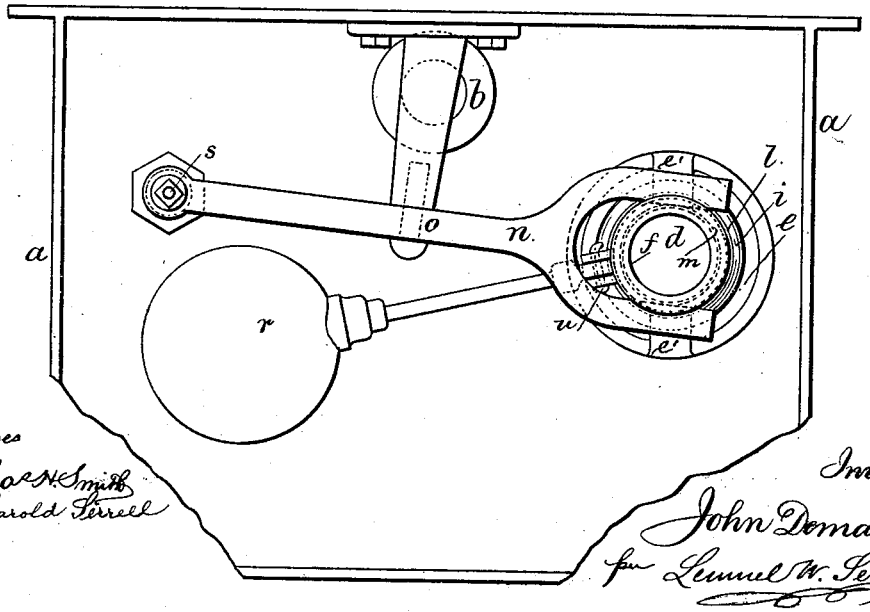


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN DEMAREST, OF NEW YORK, N. Y.

FLUSHING-VALVE.

SPECIFICATION forming part of Letters Patent No. 260,952, dated July 11, 1882.

Application filed February 23, 1882. (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 Flushing-Valves, of which the following is a specification.

This invention is an improvement upon the device for which Letters Patent No. 249,696 were granted November 15, 1881. In this patent the water is supplied into a cistern and there is a valve and a float which acts through a ratchet to hold up the valve after said valve has been lifted and to prevent its descent until the water runs out and allows the float to drop and relieve the valve from its suspending device. This, however, is complicated and expensive to construct, and the valve cannot be held open by the pull in case there is an insufficient amount of water in the cistern. I combine with the valve a guide through which the stem passes, a float, and a finger which acts to hold the valve up at any place to which it may be lifted; but so soon as the water falls from below the float and allows that to descend the finger ceases to hold the valve up, and it drops by gravity and closes the escape-opening to the closet.

In the drawings, Figure 1 is a vertical section of the cistern and valve, and Fig. 2 is a plan of the same.

The cistern *a* is of suitable size and shape, and is provided with a supply-pipe, *b*, from a head of water to which a ball-valve is affixed so as to refill such cistern with water whenever the same has been emptied. It is usual to furnish one small cistern to each water-closet, and where there are several water-closets on the same floor to use one general supply-cistern with ball cock or valve to the water-pipe and to lead a pipe from this supply-cistern to the closet-cisterns and connect each closet-cistern with the same by a rather small pipe, so that said closet-cistern, after being emptied suddenly, as hereinafter described, will be filled again gradually from such supply-cistern.

The discharge-pipe *d* from the bottom of the cistern leads to the water-closet, and at the upper end of this pipe, and within the cistern, there is a tapering valve-seat, *e*.

The overflow-pipe *f* rises above the valve-seat *e*, and it has a valve at *i* to close upon such seat. This overflow-pipe is of a size to discharge into the closet any surplus water from the cistern should such run into the same, the open upper end of the overflow-pipe being considerably below the top edge of the cistern *a*. I make the valve *i* of a ring of round rubber, shrunk on the lower part of the overflow-tube *f* below a supporting-rim, *l*, and above a slight projecting rim, that prevents the rubber ring being drawn off accidentally. If the overflow-pipe is not needed, the valve and stem may be of solid metal and receive the said rubber ring. The overflow-pipe *f* or valve-stem is guided by a stationary ring, *m*, through which it is passed, the same being supported by the standards *e'* from the sides of the valve-seat, and there is a forked lever, *n*, pivoted at *o*, which passes beneath the flange at the upper end of the overflow pipe or stem, and the other end of this lever is actuated by a connection, *s*, to the closet-pull or other device, so that when the valve is raised the water runs out freely and rapidly to the water-closet. Valves acted upon by the closet-pulls have been used; but if the pull is raised and then liberated suddenly the valve is not held up a sufficient time to allow the necessary flushing of the closet.

To prevent the valve falling, I make use of the float *r* and an arm that is pivoted at *u* to the ring *m*, and there is a finger at the inner end of the arm, that presses upon the valve-stem or overflow-pipe *f*, to hold the valve up when raised, but not to interfere with the lifting of the valve by the lever *n*. It is to be understood that the float, being in the water within the cistern, will continue to act upon the finger and hold up the valve until the water falls below the float, so that the same descends and relieves the pressure upon the finger and allows the valve to drop. The surface of the valve-stem may be smooth, in which case the valve will be held up by friction; or the stem may be grooved, to receive the end of the finger, similar to a ratchet and pawl. The overflow-pipe becomes the stem of the valve, and, so far as the action of the float and finger is concerned, the stem may be either solid or tubular. The tubular stem, however, is preferable, because, in addition to its office as an overflow-pipe, it becomes an air-inlet pipe to allow air to pass into the discharge-pipe leading to the closet, so that there will be no concussion

or ram action on the valve as it closes, and the column of water can continue to descend and pass entirely into the closet as the air enters through the tubular valve-stem into the discharge-pipe.

I claim as my invention—

1. The combination, with the water-closet cistern and valve, of a float and a finger acting upon the valve-stem and mechanism for raising the valve, substantially as set forth.

2. The combination, with the water-closet cistern, of an overflow-pipe and valve, a seat for the valve, a guide for the overflow-tube, a float and arm pivoted to the guide, and a finger acting against the overflow-pipe, substantially as set forth.

Signed by me this 14th day of February, A. D. 1882.

JOHN DEMAREST.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.