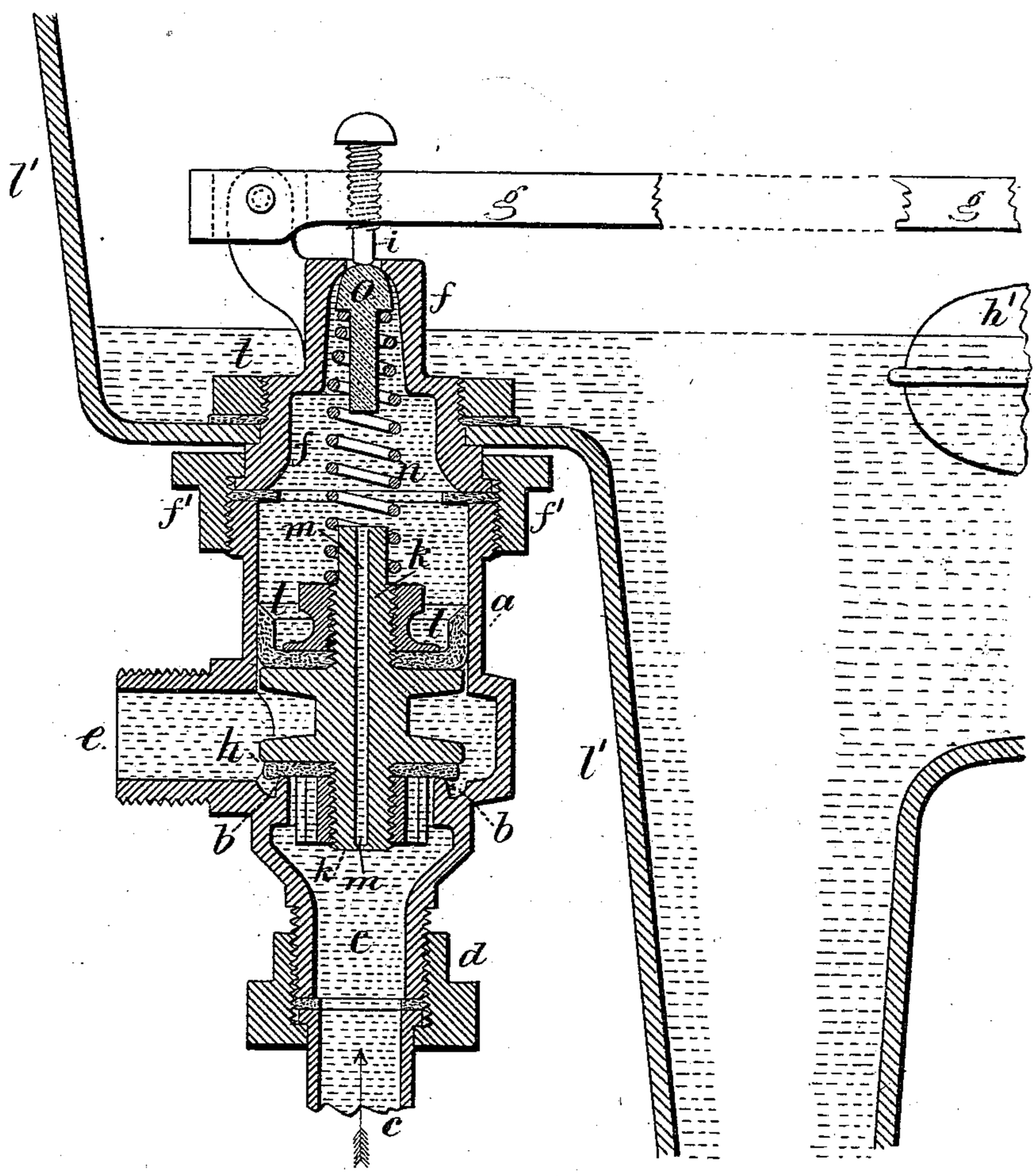
J. DEMAREST.

Valve for Water-Closets.

No. 226,224. Patented April 6, 1880.




Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN DEMAREST, OF NEW YORK, N. Y.

## VALVE FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 226,224, dated April 6, 1880.

Application filed February 9, 1880.

*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 Valves for Water-Closets, of which the following is a specification.

This valve is designed for use in water-closets wherein there is a cistern or vessel adjoining the closet, from which the water runs when the pull is operated, and in which cistern there is a float that causes the valve to open as the water runs out and to close when the proper water-level is restored.

I make use of a valve-case with a seat at the lower end for a valve that closes downwardly thereon, and there is a cup-leather on the valve-stem, and a spring and small valve at the upper end of the valve-stem, closing an escape-opening at the top of the valve-case, and there is a small hole through the valve-stem. When the float descends the lever of the float, by a small pusher, acts upon the small valve, and allows the confined water to escape from above the cup-leather and the valve to rise by the pressure of water, and the water passes to the closet and cistern. When the rising of the water lifts the float and allows this small valve to close the water continues to pass into the space above the cup-leather, and by the accumulation of volume and pressure forces the cup-leather, valve-stem, and valve downwardly, closing the valve against the water-inlet.

In the drawing I have shown this improved valve by a vertical section.

The case *a* is cylindrical and has a valve-seat, *b*, at the lower end, and there is a water-supply pipe, *c*, at this lower end, connected by the coupling *d*. The pipe *e* at the side of the case *a* passes to the water-closet.

The screw-cap *f* is at the upper end of the case *a*, and upon it the lever *g* to the float *h'* is pivoted; and *i* is a pusher entering freely into the hole in the center of the cap *f*.

Within the case is the valve *h*, valve-stem *k*, cup-leather *l*, spring *n*, and small valve *o*.

The valve *h* closes on the seat *b*, and the small valve *o* is kept by the spring *n* toward the seat formed on the inside of the cap at the hole through which the pusher passes. *l'* shows a part of the closet-cistern, and *h'* part of the float.

When the valve is at rest both valves *h* and *o* are upon their seats, and the water-pressure is operative within the case in consequence of passing through the small hole *m* in the stem *k*, and filling the chamber above the cup-leather, and forcing the valve to its seat.

When the water in the cistern *l'* is allowed to run out the float *h'* descends, the lever *g* and pusher *i* open the valve *o*, and the water escapes from the chamber above the cup-leather, and the pressure being relieved, the valve *h* and cup-leather *l* rise, in consequence of the water acting at the under side of the valve, and the closet is washed out, and the water continues to run until the float *h'* is lifted and the small valve *o* closed. This causes the pressure to accumulate in the chamber above the cup-leather and force the valve down upon its seat.

The cap *f* passes through an opening in the cistern *l'* of the closet, and is secured by a nut and washer, *t*. A screw union-ring, *f'*, serves to connect the cap *f* to the valve-case *a*, and allows the latter to be disconnected without removing the cap from the cistern.

I claim as my invention—

The combination, in a water-closet valve, of the valve *h*, valve-seat *b*, cup-leather *l*, spring *n*, valve *o*, pusher *i*, float *h'*, and lever *g*, substantially as and for the purposes set forth.

Signed by me this 4th day of February, A. D. 1880.

JOHN DEMAREST.

Witnesses:

GEO. T. PINCKNEY,

WILLIAM G. MOTT.