T. HENNESSY & M. H. DORGAN.

Valve for Basins.

No. 205,549. Patented July 2, 1878.

Fig. 1

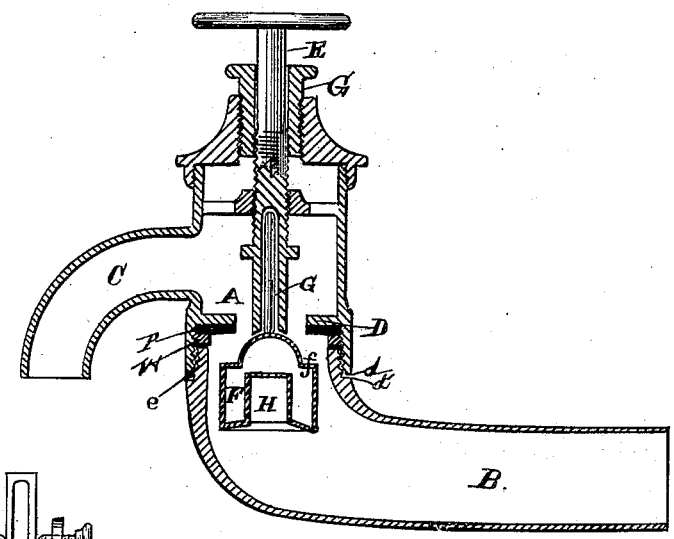


Fig. 2.

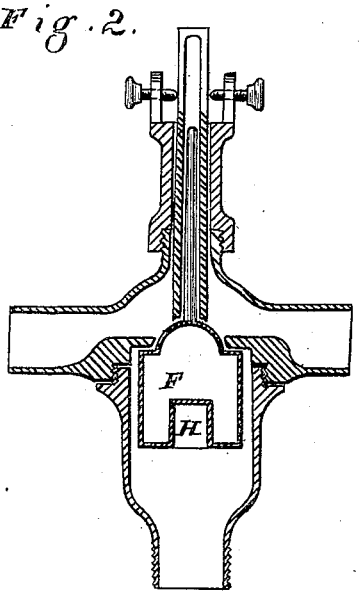
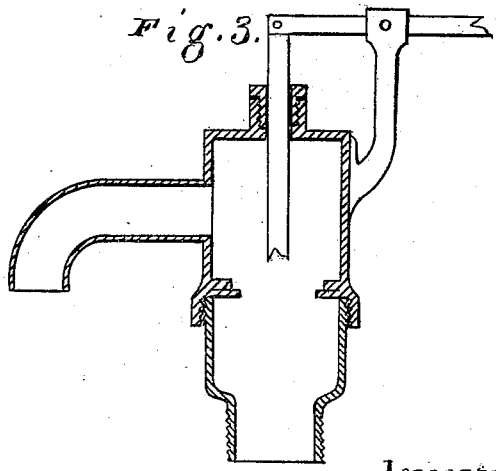


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS HENNESSY AND MICHAEL H. DORGAN, OF SAN FRANCISCO, CAL.

IMPROVEMENT IN VALVES FOR BASINS.

Specification forming part of Letters Patent No. **205,549**, dated July 2, 1878; application filed May 16, 1878.

To all whom it may concern:

Be it known that we, THOMAS HENNESSY and MICHAEL H. DORGAN, of the city and county of San Francisco, and State of California, have invented an Improved Valve; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

Our invention relates to an improvement in that class of valves used for regulating the supply of water or other liquids to basins, tanks, water-closets, and for similar purposes.

It consists in so constructing a vertically-moving valve as to close automatically by the action of the water. This valve has a long stem extending upward into a recess in a spindle projecting through the top of the chamber, so that, when it is desired to allow the water to flow, the spindle is forced down by a screw, lever, or other means, thus pushing the valve clear of its seat by means of the stem. By raising the spindle and relieving the downward pressure the water in the supply-tube, by its upward pressure, forces the floating valve into its seat and shuts off the water.

Referring to the accompanying drawings, Figures 1, 2, and 3 are sectional views of our device.

Let A represent the chamber in which the valve is inclosed, B the supply and C the discharge pipes. In the lower part of the chamber A is formed a flange, D, which serves as a valve-seat, and from this flange a female screw-thread, *e*, is cut as far as shoulder *d*, and a male screw-thread, shorter than thread *e*, is cut on the upper end of supply-pipe B from shoulder *d'*. Against the valve-seat D, on its lower surface, is secured a proper packing, P, by means of a threaded ring or washer, W. When the washer and packing are in place and the discharge-pipe C and supply-pipe B are screwed together, the shoulders *d d'* abut against each other and make a tight joint. The ring or washer W, being movable from or toward the valve-seat or flange D, allows the insertion of more or less packing, and hence the seat proper of the valve against the packing is adjustable to or from shoulders *d d'*.

On top of the chamber A is the screw-spindle E, said spindle passing down into the chamber. The bottom of the spindle, inside the chamber, is recessed or bored out to receive the stem of the valve, as hereinafter described.

The valve F is formed in a peculiar shape, as shown, the bottom being recessed or provided with a cavity, H, below, and the edges slightly concaved, while the top is convex or dome-shaped above the seat; and this form receives the pressure of water from below, and also directs the current when the valve is open, so as to steady the valve and insure its closing squarely and perfectly and remaining closed and tight thereafter. The top of this valve F has the face *f* formed around it, and the central portion of the top is made dome-shaped, as shown. In the center of the dome-shaped top is fixed the stem G, which projects upward and into the recess in the bottom of the spindle or stem E, fitting loosely in said recess. The valve F is made hollow, so as to float easily, and is air-tight. The pressure of the water from the supply keeps the floating valve with its face *f* firmly against the seat D, and prevents water entering the upper part of the chamber and escaping from the discharge-pipe. When it is desired to have the water flow, by screwing down the spindle E the top of the recess in said spindle pushes in the top of the valve-stem G in said recess and forces the valve down against the water-pressure and away from its seat, thus allowing the water to flow into the upper part of the chamber A and to escape from the discharge-pipe C. Then, by screwing the spindle E up again and releasing the pressure on top of the valve-stem, the pressure of the water under the valve forces it upward to its seat again and stops the flow.

The valve-stem plays loosely in the recess in the spindle, and is not attached to it in any way; but its action is such that the recess forms a guide to keep the valve always in such a position that its face will be on the same plane as the seat and fit closely to it, thus keeping the water-passage tight.

It will be seen that this valve may be used in a variety of cases for regulating water-supply. We have shown it as applied to a bib-cock and operated by screw, stem, or spindle. It may be also used as a water-closet valve

by having the recessed spindle operated by a seat or handle with a spring to force it up again in the usual manner. In tanks on houses, the spindle may be operated by a lever-arm and ball-float in the usual way.

This form of valve will be very useful in cold climates, where the water is apt to freeze at night in the water-pipes in the house. In such places it is customary to disconnect the house-pipes from the mains and draw off the water from the house-pipes by opening a faucet in the lower part of the main supply-pipe. Then all the faucets in the house have to be opened to admit air alone, so the water can flow out. With our improved valve, as soon as the water below is turned off and the cock opened the valve drops from its seat, admitting the air, so that all the water in the house-pipes runs off. This saves all trouble of turning on the various faucets, for as soon as the pressure is relieved each of the valves in the house will drop and allow the water to flow off. The valve thus acts automatically, and allows the water in all of the pipes in the house to flow off by simply turning the lower cock, as described. Just as soon as the water is again turned on the valve is forced to its seat and stops any water escaping, thus acting automatically in each instance.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The chamber A, formed in two parts, with the supply-pipe, having screw-threads at *e*, in combination with the adjustable seat D P W and bearing-shoulders *d d'*, so as to form a double joint, substantially as herein described.

2. The hollow float-valve F, with its concaved lower surface, and the cavity H, dome-shaped top, and stem, in combination with the seat D, whereby the pressure of water balances the valve, either open or closed, substantially as herein described.

In witness whereof we have hereunto set our hands and seals.

THOMAS HENNESSY. [L. S.]
MICHAEL H. DORGAN. [L. S.]

Witnesses:
FRANK A. BROOKS,
WM. H. THOMPSON.