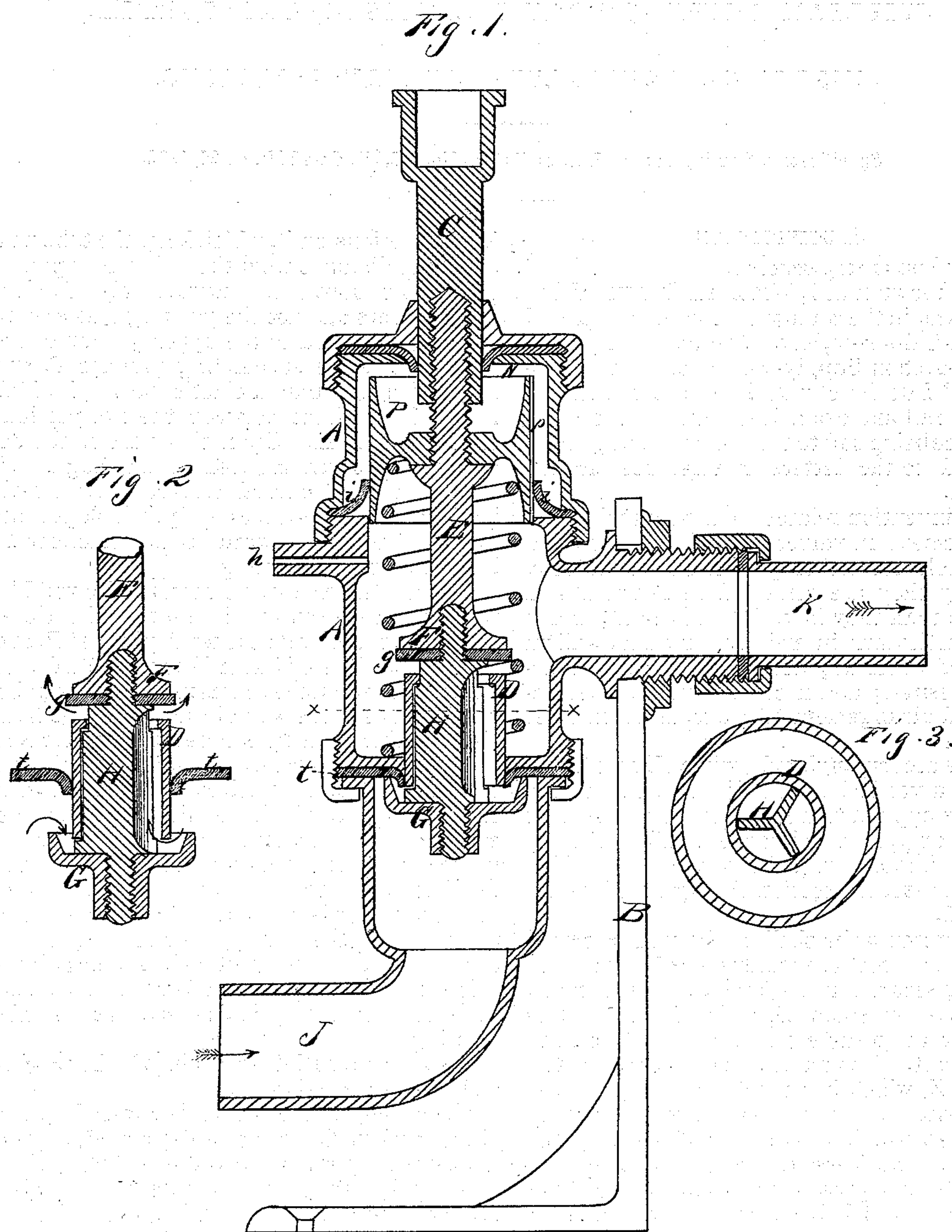


WILLIAM SMITH.
Valves for Water Closets.

No. 125,092.

Patented March 26, 1872.



Witnesses

Geo W. Strong
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WILLIAM SMITH, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN VALVES FOR WATER-CLOSETS.

Specification forming part of Letters Patent No. 125,092, dated March 26, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, WILLIAM SMITH, of San Francisco, in the county of San Francisco and State of California, have invented an Improved Double-Action Supply-Valve for Water-Closets; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention relates to a new and useful improvement in valves for water-closets, and is suitable for either pan or hopper closets, whereby they are rendered more useful and durable than they have hitherto been, and is more particularly intended to prevent a willful waste of water in places where a rigid economy is desired; and it consists in the construction and arrangement of parts, as hereinafter described.

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of the valve as applied to a seat-action hopper-closet to wash only, after being used. Fig. 2 is a detail drawing, showing the valve as open. Fig. 3 is a horizontal section through the line *x x* in Fig. 1.

A represents the shell of the valve, formed of different sections screwed together with packing secured in the joints, and is fastened to a cast-iron stand, B, which is screwed to the floor in suitable position for the seat to act upon it. C is an extension screw on the spindle E, which has a socket at its upper end. A rod extends from the socket to the seat of the closet, which is hinged, and yields to the weight of the person. In this manner the spindle E is depressed and causes the packing *g* of the inward valve F to bear on the tube D, which is depressed a half inch or more. While the valve is in this position no water can pass through it. When the seat of the closet is relieved of weight the spring lifts the valve F from the face of the tube, when the water flows through, as seen in Fig. 2, to the outlet-pipe K to the closet. Inside the tube D is a three-winged guide, which retains it in position and connects the inward and outward valves F and G. The lower portion of the guide

has projections on it, which keep the tube up a sufficient distance from the valve G to permit the water to flow. The outward valve G, when closed, bears against the packing *t*, as seen in Fig. 1. Attached to the upper portion of the spindle E is the suspending plunger P, surrounded by an annular elastic washer, *i*, which is held in the joint between the two portions of the shell A A. Upon this part of the device a patent was granted to me August 27, 1867, and is numbered 68,249. This elastic washer has an up-standing lip, which permits the water to flow upward to the chamber N, but prevents it returning.

In operation the valve acts as follows: The weight of a person on the seat of the closet depresses the rod and socket C, plunger P, and spindle E. The chamber N is now filled with water, and, when the seat is relieved of weight, would prevent the spindle and plunger from rising if there was no escape for the water contained in the chamber. To allow this water to escape, a fine channel, *p*, is cut in the side of the plunger, which permits a gradual escape of the water, and thereby suspends the valve a sufficient length of time to give the requisite wash to the closet. The length of time the water is allowed to wash depends on the stroke of the valve, which is adjusted by the screw C. To prevent leakage, the spindle C is surrounded by a tightly-fitted washer, secured in the screw-joint, as seen at *r* in the drawing.

h is a waste-outlet, to drain off the pipe K and prevent freezing.

The orifice of the waste is covered by the plunger when the valve is depressed, so that it wastes only when the valve is closed. The upper end of the tube D has its orifice smaller in area than the lower portion, the object of which is that, should the spring become defective and not have sufficient strength to lift the plunger the proper distance to close the valve, the tube will rise of itself by the action of the flowing water impinging on the contracted orifice of the tube, and close it against the packing *g*.

It will be seen that the principal improvement in this valve consists in having the tube D and valve F so constructed that, should the

spring become defective, the valve will remain closed and allow no water to pass; and under no circumstances can it be fastened open either by accident or design.

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

In combination with the sliding tube D, the inward and outward valves F and G, also the

guide H, substantially as described, and for the purpose set forth.

In witness whereof I have hereunto set my hand.

WM. SMITH.

Witnesses:

GEO. H. STRONG,
H. S. TIBBEY.