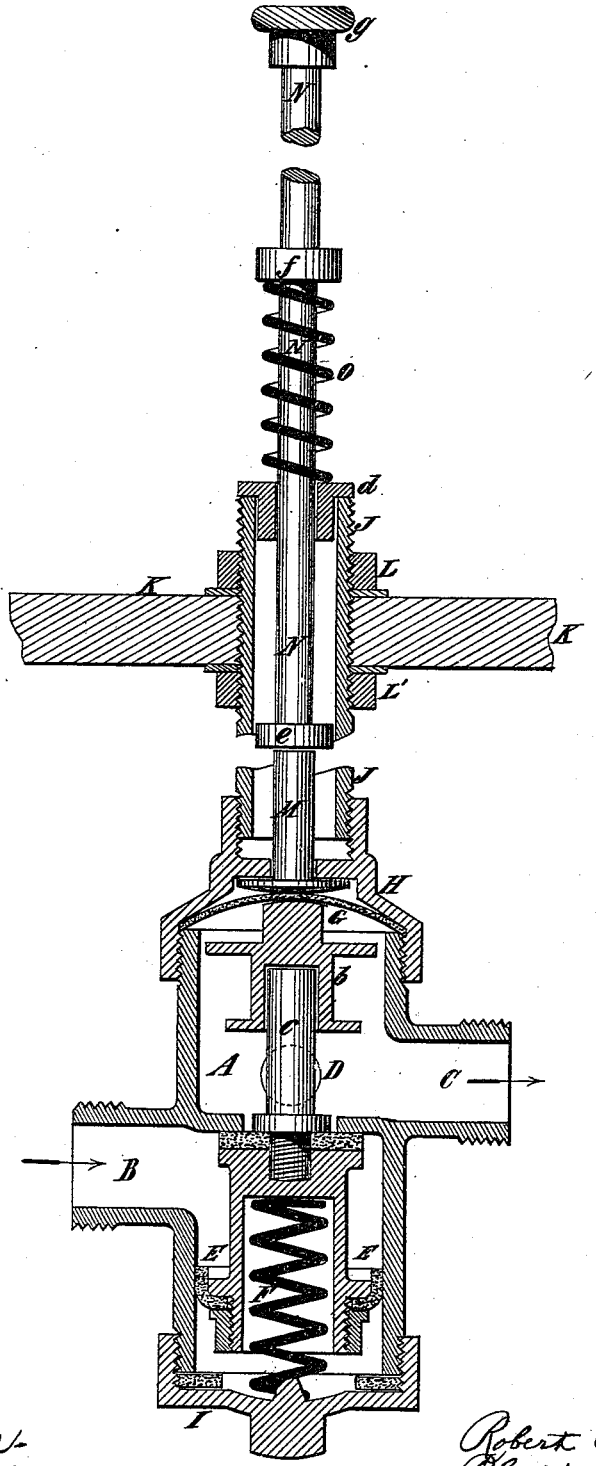
R. SMITH & P. CONNOLLY.
Water-Closet Valves.

No. 208,427. Patented Sept. 24, 1878.



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ROBERT SMITH AND PHILIP CONNOLLY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN WATER-CLOSET VALVES.

Specification forming part of Letters Patent No. **208,427**, dated September 24, 1878; application filed June 5, 1878.

To all whom it may concern:

Be it known that we, ROBERT SMITH and PHILIP CONNOLLY, both of Brooklyn, in Kings county, and State of New York, have invented certain new and useful Improvements in Valves for Water-Closets, of which the following is a specification:

This invention consists in a novel method of constructing and supporting a water-closet valve, whereby its adjustment and operation are facilitated and its repair rendered more convenient than heretofore.

The accompanying drawing is a central vertical section of a water-closet valve embodying the invention, portions being broken away to admit of delineating the valve on a large scale without occupying too much space.

A is the shell of the valve, which is shown as of cylindrical form, and provided with a water-inlet, B, a water-outlet, C, communicating with the basin or hopper of a water-closet, and an overflow, D. E is a valve fitting in the shell A, and impelled by a spring, F, against a seat when not otherwise actuated, so as to control the escape of water from the outlet C. G is a diaphragm extending across the shell over the top of a cap, *b*, arranged on the tip of the valve-stem *c*, whereby the water entering the valve is precluded from entering the top bonnet, H, thereof. Instead of supporting this valve on the floor or a base-piece, it is suspended from a suitable support by devices which will be hereinafter fully described; and this is done to enable the lower bonnet, I, to be removed, so as to obtain access to the valve in case of its needing repairs without detaching the shell from its support.

To facilitate the removal of this bonnet, it is secured to the shell by being screwed thereon, and provided with an angular boss, which may be grasped by a wrench for the purpose of manipulating it.

J designates a pipe, which is shown as being screwed into the top bonnet, H, of the valve-shell, and as passing through a support, K, from which the valve is suspended. It is externally screw-threaded, and has fitted upon it two screw-nuts, L L′, one, L, above the support K, and the other, L′, below said support. By adjusting these nuts properly along the pipe the valve may be raised or lowered and secured in any desired position with facility.

M designates a push-piece fitting in the top bonnet, H, of the valve and impinging against the diaphragm G opposite the cap *b* of the valve-stem *c*.

N designates a rod fitting in the pipe J, passing through a head, *d*, at the end thereof, and provided with a piston or disk, *e*, fitting snugly in the pipe, so that the latter forms a guide for the rod in its movements. The piston or disk *e* abuts against the end of the push-piece M, but when in its normal position the rod N does not exert any pressure thereon, because it and the weight of the water-closet seat, by which it is depressed, are sustained by a spiral spring, O, interposed between the head *d* of the pipe J and a shoulder or flange, *f*, on the rod. A knob, *g*, on the tip of the rod N bears against the seat; and, as the rod is well guided and held against vibrating, a thimble on the seat is unnecessary.

When the seat is occupied the rod N is depressed and the valve forced down, so as to permit the flow of water into the hopper or basin of the water-closet. When the seat is deserted, however, the spring O raises it and the rod N, and the valve closes through the agency of the spring F.

It will be seen that by this invention access to the valve is afforded without detaching it from its support. Provision is had for adjusting the valve relatively to its support, so as to bring the valve-rod in proper position to bear against the seat. A guide is afforded for the valve-rod, and the latter is supported so that it will not interfere at all with the closing of the valve.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A water-closet valve comprising the combination of a detachable top bonnet or cap, a pipe secured to said bonnet for suspending said valve from its support, and clamping devices arranged adjustably on said pipe for adjusting and securing the valve in any desirable vertical position, substantially as specified.

2. The combination, with a water-closet valve provided with a detachable top bonnet or cap, of an externally screw-threaded pipe, connected to the same, serving as a guide for the valve-rod, and provided with two or more adjustable clamping screw-nuts for adjusting and securing the valve in different vertical positions, substantially as and for the purpose specified.

3. The combination, with a water-closet valve, of a detached or unconnected valve-rod, having a shoulder or flange and a spring interposed between said shoulder or flange and the support of said valve, substantially as and for the purpose set forth.

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