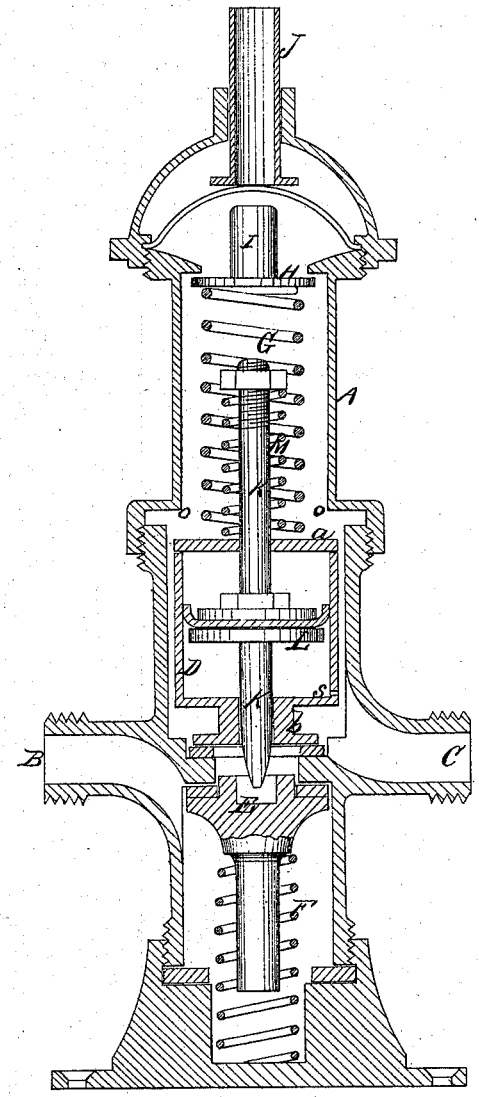
A. J. Smith,

Water Closet Valve.

No. 112,393. Patented Mar. 7. 1871.



Witnesses.
Geo. H. Strong
J. L. Borne

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ALFRED J. SMITH, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 112,393, dated March 7, 1871.

IMPROVEMENT IN WATER-CLOSET VALVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALFRED J. SMITH, of the city and county of San Francisco, State of California, have invented an Improved Water-Closet Valve; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The object of my invention is to provide an improvement in that class of valves which is employed to admit a limited quantity of water to the basins in water-closets for the purpose of cleansing them; and

It consists of an automatic arrangement of valves, which are operated by the weight of the person upon the seat, so that, after the weight is removed, the valves will act and allow the water to flow into the basin for a length of time which is regulated by their adjustment.

Referring to the accompanying drawing for a complete explanation of my invention—

A is a hollow cylinder, made ornamental, according to taste, and having an ingress-pipe, B, and an egress-pipe, C, opening into it near the lower end, as shown.

A short chamber, with two seats, is made between these two passages, and the lower end of the short hollow cylinder D serves as a valve, which rests upon the upper seat.

The lower seat is closed by a valve, E, which is held in its place by the spring F.

The cylinder D fits loosely within the outer case A, and is kept down by a spring, G, which presses upon the cover *a* of the cylinder, while the upper end of the spring rests against the plate H.

This plate has a stem, I, and is moved downward so as to compress the spring G by means of the rod J, which is pressed down upon it by the weight of the person using the seat.

A stem, K, passes through the cylinder D, moving water-tight through the lower end *b* of the cylinder, which forms the upper valve, before described, and extending some distance above the top of the cylinder D and inside the spring G, so that, when the spring G is compressed, the plate H will strike the top of the stem K and press it down. When this is done the spring G will keep the upper valve closely against the seat, and the stem K being pressed down through the cylinder D, its lower end will force the lower valve E away from its seat, thus leaving the lower end of the passage open; but no water can flow, as the upper end remains closed by the valve *b* of the cylinder D.

The stem K carries a piston, L, which moves closely within the cylinder D, and when the stem K is forced down, as above described, this piston will move to the bottom of the cylinder. When the weight of the person is removed and the compression of the spring G ceases, the elasticity of the spring F and the force of the water will raise the valve *b* from its seat by its pressure against the valve E and the lower end of the stem K.

The stem K will lift the whole of the cylinder D, because the piston L fits so tightly that it will only move to the upper end of the cylinder again by the gradual passage of water from the main barrel into the cylinder through the small hole S at its lower side, this being assisted by the tension of the spring M, which surrounds the stem K, inside the spring G, and presses against a nut on the upper end of the stem K till the piston has arrived to its position at the top of the cylinder.

The cylinder D strikes the shoulder *o* as it rises, so that the lower valve E is also kept open by the stem K till the piston L has arrived at the top of the cylinder, closing slowly, so that the water is allowed to flow through the pipes B and C into the bowl during the interval in which the valves remain open. The springs can be so adjusted that the valves will remain open any desired time before shutting off the water, the flow into the basin being thus easily regulated.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The compressing-spring G and cylinder D, in combination with the valve *b* and stem K, when these several parts are arranged and operated substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal this 10th day of December, 1870.

ALFRED J. SMITH. [L. S.]

Witnesses:

GEO. H. STRONG,

WM. H. RUNNELS.