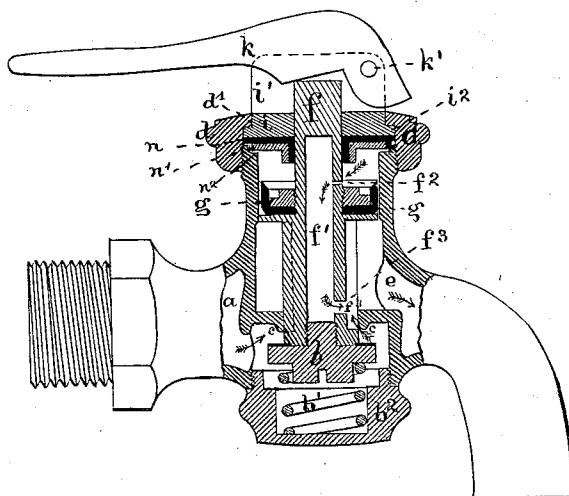


Self-Closing Faucets.

Patented Feb. 4, 1873.



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OF SAME PLACE.

IMPROVEMENT IN SELF-CLOSING FAUCETS.

Specification forming part of Letters Patent No. 135,407, dated February 4, 1873.

To all whom it may concern:

Be it known that I, MINFORD S. CLARK, of the city and State of New York, have invented certain Improvements on Self-Closing Faucets, of which the following is a specification:

My invention is divisible into two parts—the one relating to that class of faucets, valves, or cocks for fluids the closing of which is regulated by the escape of fluid from a “variable chamber,” and the other relating to cocks or faucets which are operated by means of a lever.

The accompanying drawing (a part of this specification) is a vertical section through the center of a faucet containing my improvements. The valve is represented as open, and the arrows indicate the directions of the currents of fluid when the valve is in the act of closing.

Referring to the drawing, A is the induction-passage; *b*, the valve-plug; *c*, the valve-seat; and *e*, the eduction-passage. The valve-stem *f* is bored out longitudinally, and communicates with the valve-chamber by the lateral openings *f*² and *f*³ above and below the cup-leather or umbrella-valve *g*, which is secured to the valve-stem. The space above the cup-leather *g* constitutes the variable chamber. The valve-plug *b* screws into the lower end of the hollow valve-stem, and, together with the valve-stem and connecting parts, is pushed upward by the spiral spring *b*¹, which rests upon the inside of the lower cap *b*². The hollow valve-stem, besides its function of drawing the variable chamber through the lateral opening *f*² elevated above the cup-leather, exhibits another feature, which is of greater importance, to wit: The duct of communication with the variable chamber is prolonged and its lower terminus or mouth enlarged, so that, in operation, currents of fluid are made to pass through it alternately in opposite directions when the valve is opening and closing.

On referring to the drawing it will be perceived that the lower opening *f*² is of greater diameter than the upper opening *f*³. The opening *f*² is made small in order to prevent the too rapid escape of fluid from the variable chamber when the valve is closing. In the drawing the opening *f*² is represented larger than its

real size to make it more clearly distinguishable.

In operation, when the valve-plug *b* is depressed the fluid rushes into the valve-chamber and a portion of it into the enlarged mouth of the duct *f*³, which is in a favorable position to receive the full force of the stream. The hollow interior of the valve-stem is thus filled and the fluid is forced through the opening *f*² into the variable chamber.

The jet of fluid thus injected contributes toward filling the variable chamber, and also washes away any sediment which may be near the opening *f*², and which might otherwise clog it. The variable-chamber duct, therefore, is alternately (as the valve opens and closes) an induction-pipe and an eduction-pipe.

The second part of my invention consists in providing means for the adjustment of the lever by which the valve-stem is depressed, so that it can be made to stand radially in any direction from the valve-chamber. This I accomplish by making the upper cap in two parts, *d* and *i*. The outer part or ferrule *d* embraces the upper end of the valve-chamber and engages a screw-thread thereupon like an ordinary cap. The inner part *i*, which I call a swivel, has on the top two ears, *i*¹, for guiding the lever *k* and holding the lever-pin *k*¹; and its lower edge has a projecting lip, *i*², which catches under a corresponding lip, *d*¹, on the inside of the ferrule *d*. The swivel has a hole bored through it to admit the head of the valve-stem and allow of the action of the lever thereupon. Next below the swivel is an elastic washer or packing, *n*, and next below that a metallic washer, *n*¹, which latter rests upon the wall of the valve-chamber.

It will thus be seen that when the ferrule *d* is screwed hard down the elastic washer *n* is compressed between the swivel and the annular shoulder *n*² on the wall of the valve-chamber, and thus is immovably held in position by friction.

If it be desired to change the position of the lever *k* the ferrule *d* is unscrewed enough to loosen the parts, and the lever, being attached to the swivel, can then be turned to any required radial direction and secured thereon by again screwing the ferrule hard down.

I claim as my invention—

1. In a self-closing cock, a hollow valve-stem provided with openings f^2 and f^3 , respectively, above and below the cup-leather g , when arranged with relation to the induction-passage A, substantially as described, and for the purposes set forth.

2. The combination of the swivel i and the

ferrule d with the shell of a faucet or cock, substantially as described, and for the purposes set forth.

MINFORD S. CLARK.

Witnesses:

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