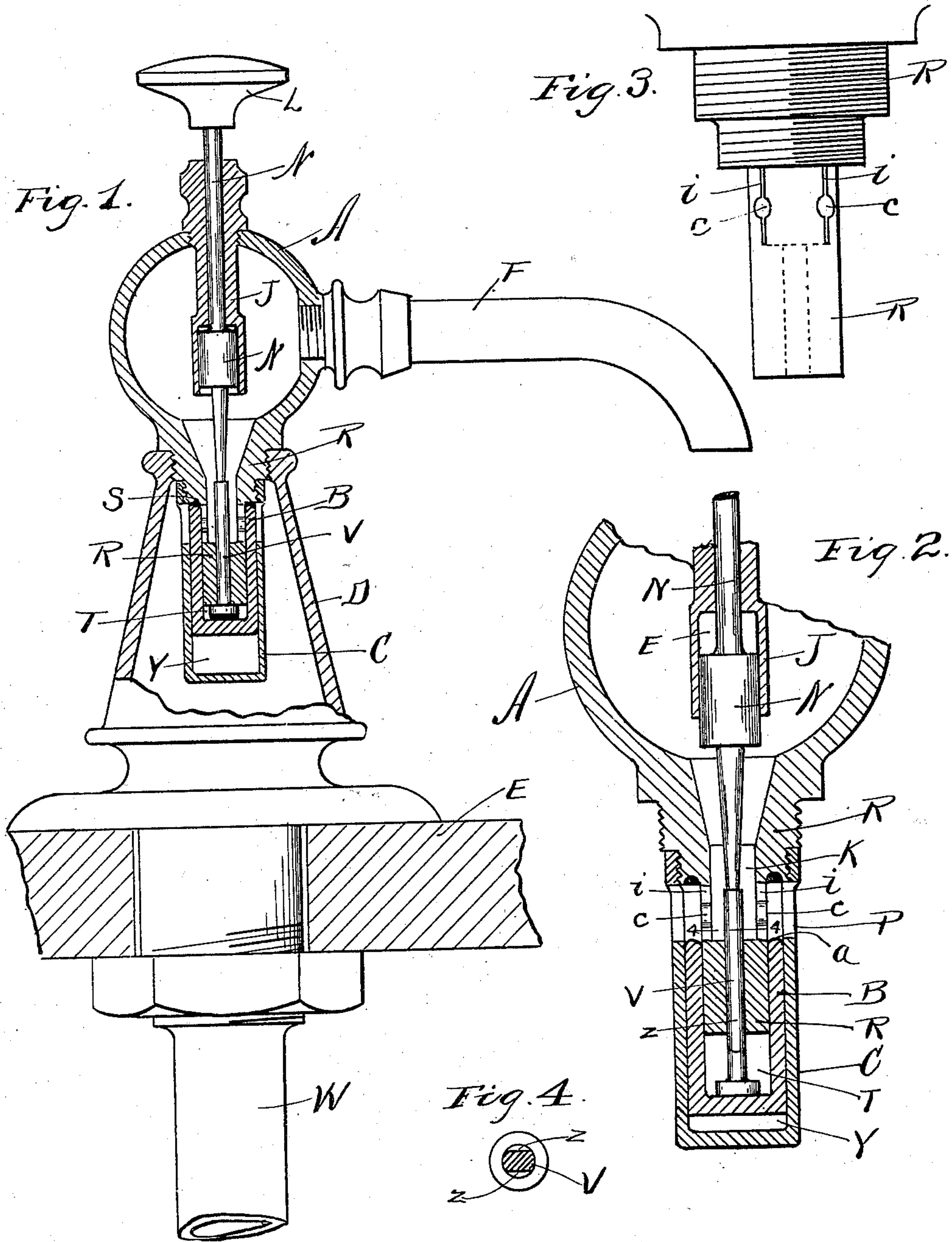


No. 692,024.

Patented Jan. 28, 1902.

J. W. LYON.
SELF CLOSING FAUCET.
(Application filed Sept. 7, 1901.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN W. LYON, OF PROVIDENCE, RHODE ISLAND.

SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 692,024, dated January 28, 1902.

Application filed September 7, 1901. Serial No. 74,657. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LYON, a resident of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Self-Closing Faucets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the class of self-closing faucets in which the closing of the valve is effected by the pressure of the water in the supply-pipe. It is fully described and illustrated in this specification and the annexed drawings.

Figure 1 represents a vertical section of the outer casing of the faucet, the valve, and other moving parts with the valve closed. Fig. 2 is an enlarged vertical section of the valve and moving parts in the lower part of the faucet shown in Fig. 1 with the valve open. Fig. 3 is an enlarged side elevation of the cylinder on which the valve slides separate. Fig. 4 shows a cross-section of valve-pin on line 4 4, Fig. 2.

The object of the invention is to provide a faucet that will close automatically when allowed to by the pressure of the water in the supply-pipe without any noise and that will not require any packing to keep it from leaking when in operation or when closed. The following is a description of its construction and mode of operation.

A represents the globe or upper chamber of the faucet, with the delivery-spout F attached to one side of it.

D is a lower chamber, to the top of which the projection R on the lower end of the chamber A is attached, said chamber being in communication with the supply-pipe W.

Within the chamber D and connected with the projection R is the cylinder C, with inclosed chamber Y, said cylinder having openings *p p* in its sides at or near the top thereof. A valve-seat S is made on a shoulder of the projection R around the part that extends down into the chamber D. The projection R of the chamber A extends down into the cylinder C and has an opening through its

center, enlarged to form a small chamber K (see Fig. 2) in the upper part, through the sides of which holes *c c* are made, (see Fig. 3,) having slots *i i* made from their lower sides to the bottom of the chamber and from their upper sides to the valve-seat S made around the outside of the chamber. (See Fig. 2.) A valve B, in the shape of a cylinder having its lower end closed, is fitted to slide freely on the lower part of the projection R and also to slide freely in the outer cylinder C and has its upper end *a* made to close on the valve-seat S when the valve B is raised. A pin V is fitted to slide freely in the hole in the lower part of the projection R, and its lower end rests on the bottom inside of the valve B to push it down and open the valve when operated by the stem N.

The parts that operate the faucet consist of a tube J, screwed into the top of the chamber A and extending down into the chamber, with a small chamber E made in its lower end. The operating-stem N, having the usual head or button L on its upper end, is made to slide closely in the tube J and has an enlarged portion on the lower part of it made to slide freely in the chamber E in the tube J and form a water-cushion between its upper end and the upper end of the chamber for the stem N when the pressure of the hand is removed from the button L.

When the faucet is closed, the stem N will have its lower end resting on the upper end of the valve-pin V, as in Fig. 1, and the valve B will be up in contact with the valve-seat S, shutting off the water from the chamber A. To open the faucet, pressure is applied with the hand to the button L to push down the stem N and the pin V, which will depress the valve B and uncover the upper part of the extension R and allow the water to flow through the holes *p p* and *c c* and thence up into the chamber A and out through the spout F. As soon as the pressure of the hand is removed from the button L the pressure of the water in the chamber D, passing down between the cylinders B and C into the chamber Y, will push the valve B up, so that it will press against the valve-seat S, as in Fig. 1, and shut off the water from the holes *c c*, through which it passed to the chamber A.

In opening the faucet the water in the cham-

ber Y forms a cushion and prevents it from opening suddenly and making a noise, and in closing the rising of the valve B over the holes *c c* and slots *i i*, together with the water-cushion in the chamber T (see Fig. 2) and also in chamber E, makes the closing so gradual as to prevent the possibility of making any noise. The object of the slots *i i* is to start the flow of water moderately when under high pressure, as when drawing a glass of water, and one side of the pin V is made flat at Z nearly down to the head to allow the water to pass into the cylinder and shut it off as the head rises and acts as a valve when it reaches the end of the projection R.

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

1. In a faucet, the combination of an upper and a lower chamber, a cylindrical extension of said upper chamber down into the lower chamber, a small chamber made in the upper end of said extension, and having holes in the sides thereof, a cylinder closed at its lower end fitted to slide on said extension and having a valve on its upper end, a valve-seat around the top of said extension, an outer cylinder inclosing the sliding cylinder with a valve, and having its lower end closed and provided with openings in its side at its top, and means for depressing the valve, substantially as described.

2. In a faucet the combination of an upper and lower chamber, a cylindrical extension of the upper chamber down into the lower chamber, a small chamber in the upper end of said extension, having holes in the sides of said small chamber, narrow slots extending upward from said holes, an outer cylinder inclosing said extension and having openings at its top and its lower end closed, a valve fitted to slide freely on said extension and in said outer cylinder, and means for operating said valve, substantially as described.

3. In a faucet the combination of an upper and a lower chamber, a cylindrical extension of the upper chamber down into the lower chamber, a pin fitted to slide freely in a hole in said extension, a head on the lower end of the pin, a flat side on said pin, openings in the side of said small chamber, an outer cylinder inclosing said extension and having openings at its top and its lower end closed, a valve fitted to slide freely on said extension and in said outer cylinder, and means for operating said valve, substantially as described.

In testimony whereof I have hereunto set my hand this 5th day of September, A. D. 1901.

JOHN W. LYON.

In presence of—

HOWARD E. BARLOW,
BENJ. ARNOLD.