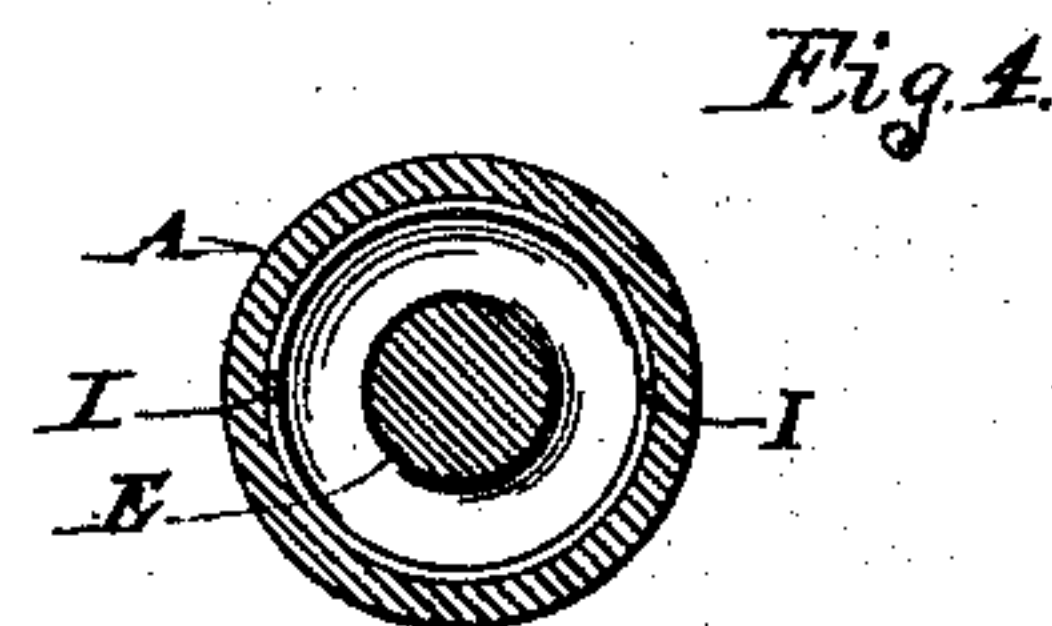
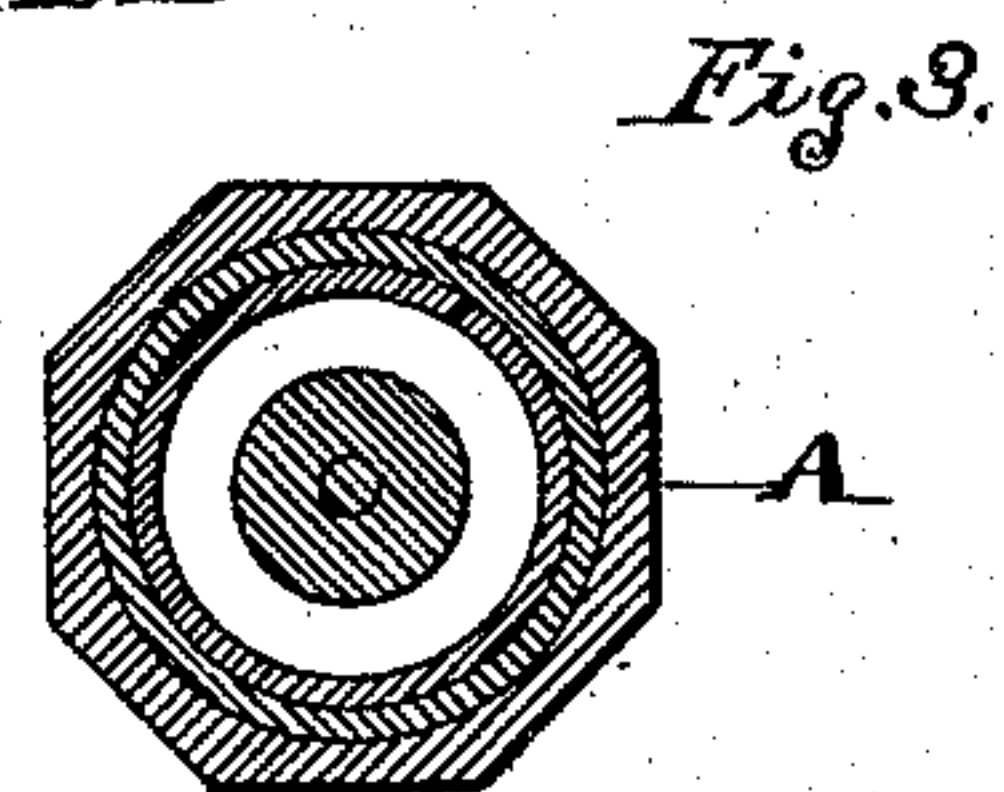
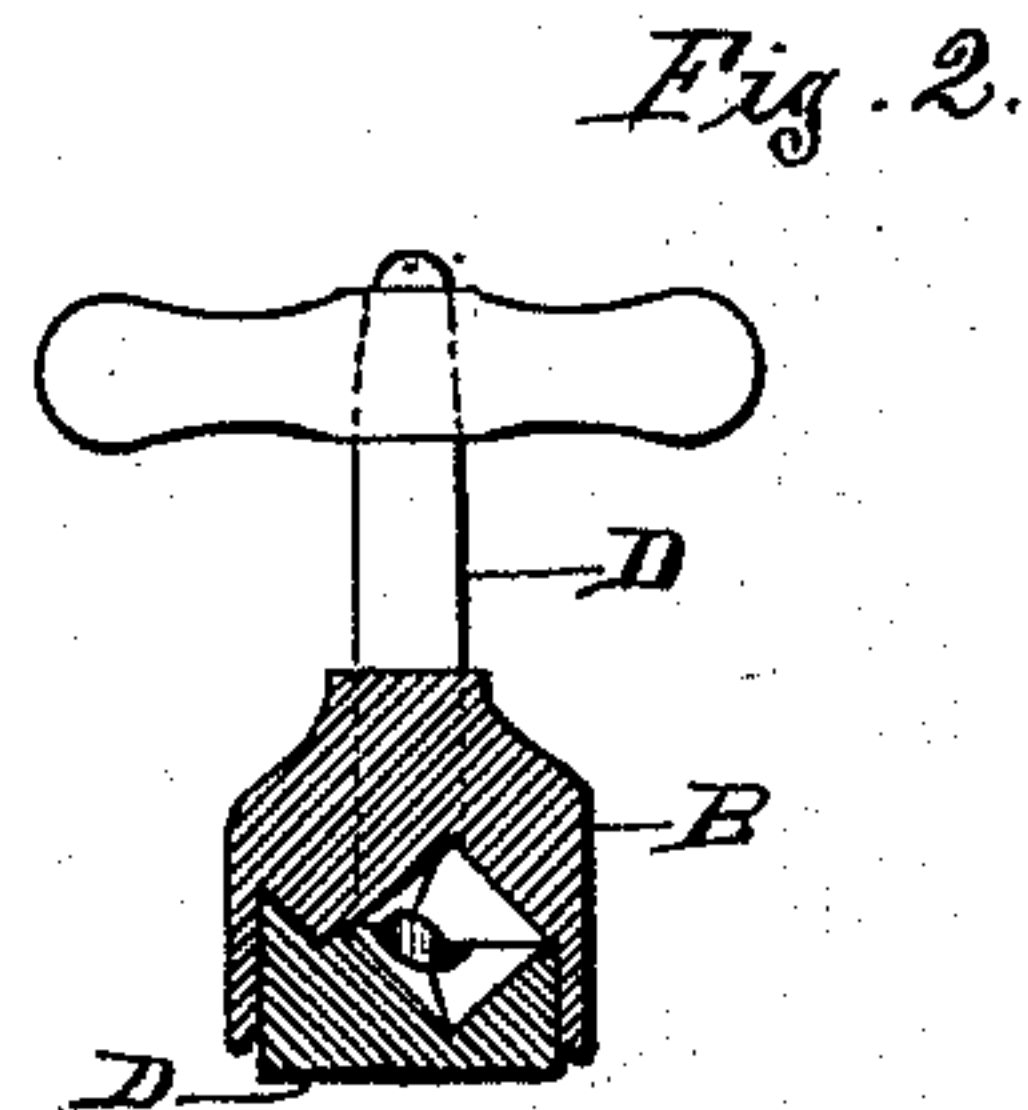
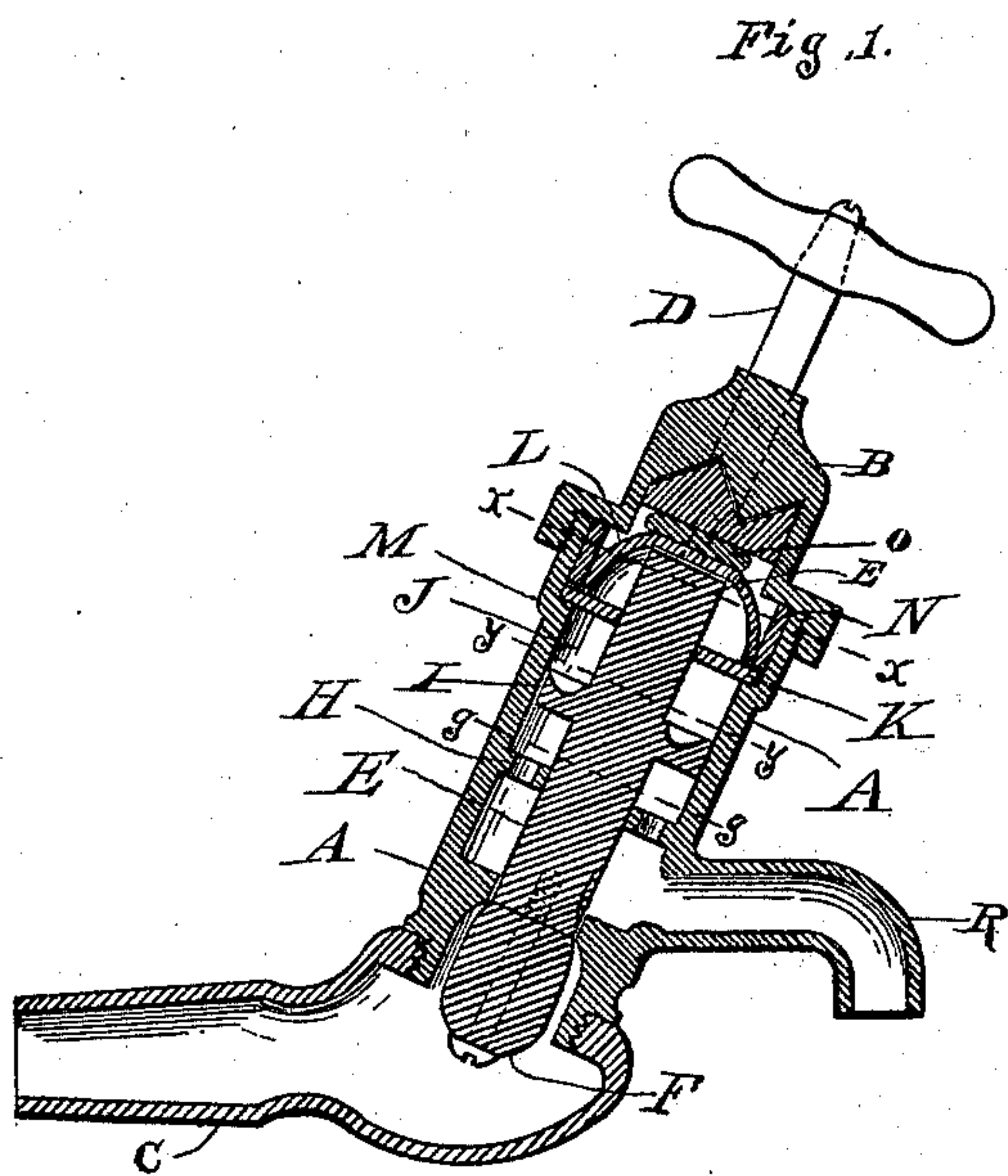


(No Model.)

G. WOODALL.
SELF CLOSING FAUCET.

No. 410,306.

Patented Sept. 3, 1889.



WITNESSES:

James E. Muller
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UNITED STATES PATENT OFFICE.

GEORGE WOODALL, OF DENVER, COLORADO.

SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 410,306, dated September 3, 1889.

Application filed December 8, 1888. Serial No. 293,223. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WOODALL, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Improvement in Self-Closing Faucets, of which the following is a specification, reference being had therein to the accompanying drawings, in which similar letters refer to corresponding parts.

Figure 1 is a longitudinal section taken through the center of my improved self-closing faucet. Fig. 2 is a view, partly in elevation and partly in section, showing the means of forcing the valve-stem downward and opening the faucet. Fig. 3 is a section taken on the line *x x*, Fig. 1. Fig. 4 is a section taken on the line *y y*, Fig. 1. Fig. 5 is a section taken on the line *g g*, Fig. 1. Fig. 6 is a section taken through the valve-stem near the valve, and showing the manner in which the stem is cut away to allow the water to enter freely when the valve is depressed.

In the drawings, A is the shell of the faucet, provided with threads at the top and bottom, by means of which the cap B is screwed on at the top and the pipe C attached at the bottom. The cap B is stationary, and is provided with double-inclined oppositely-disposed cams, as shown.

D is a rod or shank extending up through an aperture in the cap B and formed to receive at its top a handle or other means of rotating it. At its lower end it carries a shoulder, taking in the upper or recessed part of the cap, the upper side of which shoulder is formed into cams the counterparts of and coacting with those in the cap.

E is the valve-stem, rising within the shell to such distance that the collar N on the end thereof may be immediately beneath the under side of the shoulder on the rod or shank D.

The valve F is fastened to its stem by means of a screw which passes through the valve into the bottom of the stem, which is fashioned to receive it. The valve, when closed, rests against a suitable seat formed on the inside of the shell. The stem just above the valve is cut away, as shown, to allow the water to enter freely when the valve is depressed.

H is a guide for the valve-stem, and is formed

on the inside of the shell, as shown in Fig. 4. The guide H is provided with openings, as shown in Fig. 4, which allow the water to pass through freely and come in contact with the rim I, which is made stationary on the stem, as shown. This rim fits nicely within the shell, but is provided with one or more small notches I' on its outer surface, which allow the water to pass slowly into the chamber J above. The upper surface of the rim is not flat, but hollowed out around the stem. The top of this chamber is closed by the washer K surrounding the valve-stem and resting upon a suitable shoulder formed on the inside of the shell, as shown.

L is a rubber diaphragm fitting tightly around the small threaded extremity of the valve-stem, with its central portion resting upon a suitable shoulder M, formed upon the valve-stem considerably above the washer, as shown. This diaphragm fits tightly within the shell, its outer edge resting upon the washer, thereby preventing any water from passing above the washer. The position and shape of this diaphragm when in place, as described, are distinctly shown in Fig. 1. Above the diaphragm, resting upon its outer edge and holding it in place, is a collar N, which fits nicely within the shell. Above the diaphragm, holding its central portion in place and screwed down tightly upon the small threaded extremity of the valve-stem, is a small button O. The small extremity of the valve-stem projects above the button O and enters a suitable opening in the bottom of the lever D, so that the bottom of this lever rests upon the button O when the valve L is closed and the lever occupies its highest position. Cap B, when screwed into position upon the shell, as shown in Fig. 1, holds collar N tightly in place.

The operation of my improved self-closing faucet is as follows: When lever D is turned, it is forced downward by the combined action of its cams and the double-inclined cams on the inside of the cap B. This movement of lever D forces the valve-stem downward and opens the valve by virtue of the mechanism heretofore described. The valve being open, the water passes freely into shell A and out of the spout R. It also rises above

guide H, comes in contact with rim I, and passes thence slowly into chamber J through the small notches in the rim, heretofore described, until this chamber is full. As soon
5 as lever D is released the pressure of the water upon the valve has a tendency to return it suddenly to its seat, which would be the case were it not for the water in chamber J, which acts as a cushion on rim I, compelling
10 the valve to return gradually to its seat, since the water can pass out of chamber J only through the small notches in rim I through which it entered. By locating the valve-stem entirely within the casing and allowing only
15 enough thereof to pass up through the diaphragm L as suffices to give a good seating to the collar N all danger of water passing up to the top of the cap is obviated, and the annoyance so common with many faucets of
20 leakage around the valve-stem is entirely done away with.

In the self-closing faucets heretofore used as soon as the lever is released the valve re-

turns suddenly to its seat, cutting off the discharge so quickly that oftentimes the pipe is
25 burst to which the faucet is attached. The object of my improvement is to overcome this difficulty; hence

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

In a self-closing faucet, the combination of
30 the casing A, extended upwardly to form the chamber J and having an interior shoulder M, a valve-stem located entirely therein and having the rim I, with one or more notches
35 I', a valve at the lower end thereof, the washer K, diaphragm L, collar N, the cap B, having the double-inclined oppositely-disposed cams in its interior, and the rod D, having a shoulder at its inner end with cams corre-
40 sponding to and coacting with those in the cap, substantially as set forth.

GEORGE WOODALL.

In presence of—

B. L. POLLOCK,
A. J. O'BRIEN.