

UNITED STATES PATENT OFFICE.

OTTO SCHUBERT, OF HANOVER, GERMANY.

SELF-CLOSING WATER-TAP.

SPECIFICATION forming part of Letters Patent No. 470,510, dated March 8, 1892.

Application filed August 27, 1891. Serial No. 403,923. (No model.)

To all whom it may concern:

Be it known that I, OTTO SCHUBERT, a resident of Hanover, in the Kingdom of Prussia, German Empire, have invented a new and useful Self-Closing Water-Tap, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a self-closing water-tap.

The automatically-closing water-supply cocks hitherto used have in practice a great many defects, their construction being too complicated, while they cannot be relied on when operating. Moreover, their passages are generally too narrow and are often obstructed, thus causing great inconvenience, so that these apparatus have to be abandoned as not fulfilling their object. The automatically-closing water-supply cock constituting this invention and hereinafter described is entirely free from the above-mentioned defects.

In the accompanying drawings, Figures 1 and 2 are cross-sections of the water-supply cock, showing the inner closing part in an open position, while Fig. 3 shows the same in a closed position. Fig. 4 is a cross-section of the closing part, showing the spindle. Fig. 5 is a side view of the whole apparatus.

The invention consists of the part A, the casing B, and the closing part. (Shown in Fig. 4.) The casing B surrounds the lower part of A and is readily movable up and down, being guided by the screw *i* and the slot *n*.

The closing part consists of the spindle *a* and the disks *o* and block *p*, firmly soldered in slots formed in the said spindle, and is inserted from below in the part A. The hollow, loose, and movable india-rubber cylinder *d*, carrying inwardly a bush-sheath *r*, is first passed over the spindle *a*, being followed by a plug *z*, furnished with a conical end *v*, then by a disk *e*, resting upon a shoulder of the said plug, and finally by the piston-like disk *b*, with outlets *s*. The whole of this closing part can be easily inserted in a vertical direction in the part A, which is closed air-tight at the top by a lid or cover screwed thereon. When the cock is closed, the closing part can only sink slowly by reason of the pressure of the outflowing water on the piston *b* and

plate *e*, as the india-rubber plate *e* does not allow the water to pass through to the upper side. The first closing is effected by the india-rubber cylinder *d* making contact at *m*, while the second closing takes place subsequently above this point by the india-rubber cylinder or plug *d* by the conical end *v*.

It is noteworthy that this water-closing apparatus is furnished in the manner above described with two closing devices, whereby the greatest security is afforded toward obtaining an unfailing gradual closing action.

When the cock is opened, the casing B is up, as in Fig. 1, and with it the closing part, this being effected by the inner tubular piece. The small passage about the cone *v*, above the cylinder *d*, is first opened, and when the spindle *a* has been raised with the cone the disk *o* strikes in its upward motion against the sheath of the india-rubber cylinder and carries the latter upward. The outlet-opening, and with it the overflow of water, can be increased through conical side depressions or recesses *u*, formed in the cylinder *d*, moving in the cylindrical box of the body or chamber D, Fig. 1, or without lateral depressions or recesses in the cylinder by forming the chamber with a conical box, as in Figs. 2 and 3. By releasing the cock the casing B slides quickly down. The closing part follows closely after. The first closing is effected by the india-rubber cylinder *d* at *m*. The second closing occurs gradually at the top of the india-rubber cylinder *d* through the agency of the conical appendage *v*. Owing to the gradually-reduced outflow due to the arrangement of the india-rubber cylinder furnished with lateral depressions or recesses *u* and moving in the cylindrical chamber or box D, Fig. 1, or of the india-rubber cylinder without lateral depressions or recesses moving in the conical chamber or box D, Figs. 2 and 3, in combination with the subsequent closing by the conical appendage *v* of the spindle *a*, the back wash or flow of the water in the pipes is avoided. The raising or lifting is very soft, so that even the weakest hand can open the cock with ease.

The new cock operates faultlessly in all cases without ever becoming obstructed. It

is of very simple construction, while yet very solid, and, although of cheap manufacture, presents an elegant appearance.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination, the main casing A, the sliding casing B, arranged to move thereon, the box or chamber D within the casing A, having a seat *m*, the spindle *a*, extending within the casing A and connected to the sliding casing B, the flexible cylinder *d*, carried loosely by the spindle, the disk *o* on the spindle for raising the cylinder, the plug *z* on the spindle above the flexible cylinder, having a conical end *v* adapted to fit within the end of said cylinder, the piston-disk *b*, having openings, and the plate *e* to close the same, said disk and plate being carried by the spindle *a*, substantially as described.

2. In combination, the casing A, having the box D with the seat *m*, the sliding casing B, the movable casing on the outside of the casing A, the spindle *a* within the casing A and

connected to the casing B, the loose cylinder *d* of flexible material on the spindle, adapted to the seat *m*, the plug *z* above the cylinder, having a conical end adapted to fit within the cylinder, and the disk *o* on the spindle for raising the cylinder, substantially as described.

3. In combination, the casing A, having a box D with a seat *m*, the casing B, sliding on the casing A, the spindle *a*, connected thereto, the flexible cylinder *d*, loosely carried by the spindle, the disk *o* for raising the cylinder, and the plug above the cylinder, having a conical end adapted to fit within the opening of the cylinder, the said cylinder having the depressions *u* in its side, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

OTTO SCHUBERT.

Witnesses:

AUGUST LEMIER,
DANIEL TRICK.