O. COLLIER.

Check-Valve for Bib-Cocks and Faucets.

No. 199,694. Patented Jan. 29, 1878.

Fig 1.

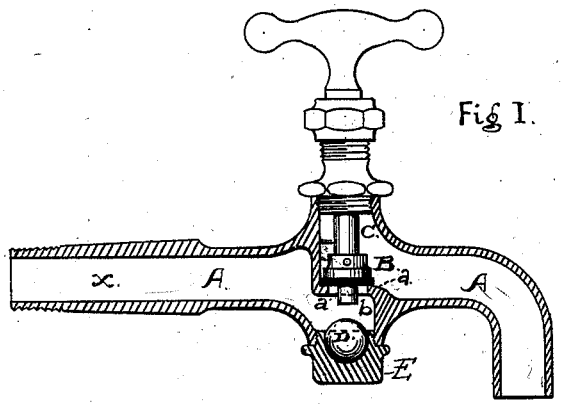


Fig 2.

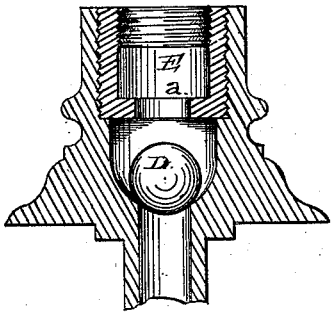
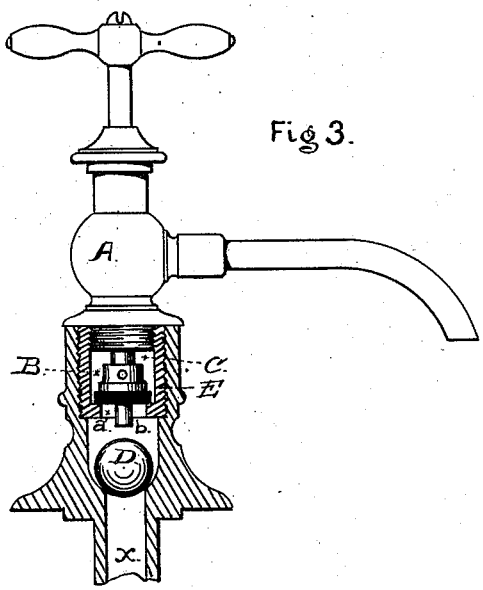


Fig 3.



Witnesses.

A. G. Curtiss

Edward C. Osborn

Inventor

Orrin Collier

By C. M. Smith his Atty

UNITED STATES PATENT OFFICE.

ORRIN COLLIER, OF SACRAMENTO, CALIFORNIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO CHESTER J. LANE, OF SAME PLACE.

IMPROVEMENT IN CHECK-VALVES FOR BIB-COCKS AND FAUCETS.

Specification forming part of Letters Patent No. **199,694**, dated January 29, 1878; application filed October 10, 1877.

To all whom it may concern:

Be it known that I, ORRIN COLLIER, of the city and county of Sacramento, in the State of California, have invented a new and useful Improvement in Automatic Check-Valves for Bib-Cocks and Faucets, which invention is fully set forth and described in the following specification and accompanying drawings, in which—

Figure 1 is a longitudinal section through a bib-cock with my invention applied thereto. Fig. 2 is a detail view of the valve and valve-seat. Fig. 3 is the same applied to a basin-faucet.

The object I have in view is to apply a ball-valve to a bib-cock or basin-faucet, for the purpose of automatically checking the flow of water when the main valve is removed for repair, in such a manner that the ball-valve can be removed when worn uneven, so that its operation is impaired, and replaced by a new one; and my invention therein consists in the combination, with a cock or faucet having a main valve and a ball check-valve, of a screw-plug adapted to allow the ball check-valve to be removed when desired.

Similar letters of reference indicate like parts in all the drawings.

A represents, in Fig. 1, a bib-cock, and in Fig. 3 a basin-cock or faucet, both in vertical section. B is the valve proper, operated by the spindle C. D is the check-valve, and *a* is the double seat, serving for both valves. The valve D is formed of a ball placed beneath the valve-seat *a*, and between it and the inlet-opening *x*, and it is made of proper size to fit against the under surface of the valve-seat, to close the opening when held up by the pressure of the fluid behind it. This action of the ball is counteracted by the spindle *b* upon the end of the main valve, which projects within the valve-opening a sufficient distance to bear against and hold down the check-valve D clear of its seat when the main valve is pressed down to its seat *a*.

The length of the spindle *b* is in proportion to the movement given to the main valve B, for when this valve is raised from its seat to admit the fluid the check-valve must still be held down by the spindle *b* a proper distance from the seat *a* not to interfere with the flow through the opening. At this position a movement of the spindle C either forward or downward will arrest the flow of fluid from the cock by bringing either the valve B or the valve D into action to close the opening.

When the valve B is raised to its highest point clear of the seat, so that the spindle *b* is free from contact with the check-valve, the spindle and its valve B can be taken out of the faucet for repairs, and the flow will be shut off at this point without cutting off the supply from the entire place or premises.

The ball-valve, when applied to a bib-cock, Fig. 1, rests in a recess in the top of a screw plug or nut, E, which enters a hole tapped through the under side of the cock directly below the main valve. By means of this plug the ball-valve can be taken out when worn uneven, and a new one inserted in its place. The use of the screw-plug also permits the ball-valve to be applied to any ordinary faucet or cock.

In a basin-faucet, Figs. 2 and 3, the screw-plug E is hollow, and contains the valve-seat *a*, and is inserted from the top of the faucet. It permits, as in the bib-cock, the ball-valve to be replaced when worn.

By this construction and arrangement of the parts a simple and effective check-valve is provided in cocks and faucets, which is quickly brought into action when required, and operates without the aid of springs.

I am aware of the patent granted October 10, 1876, to J. A. Ayres, and hereby disclaim the same.

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

The combination, with a cock or faucet having main valve B, of a ball check-valve, D, and a screw-plug, E, for allowing the ball check-valve to be removed from the cock or faucet when desired, constructed substantially as described and shown.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 24th day of August, 1877.

ORRIN COLLIER. [L. S.]

Witnesses:

C. W. M. SMITH,

WILLIAM HARNEY.