J. J. TONKIN.
Pump-Valve.

No. 209,525. Patented Oct. 29, 1878.

Fig. 1.

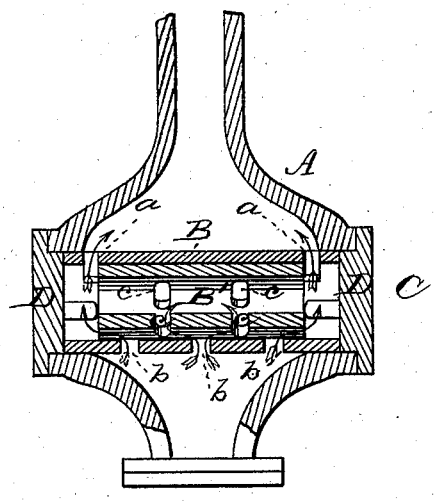


Fig. 2.

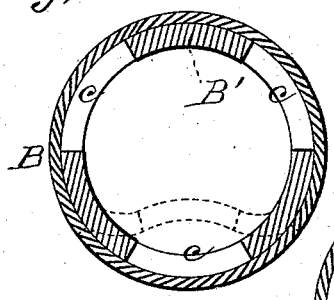


Fig 3

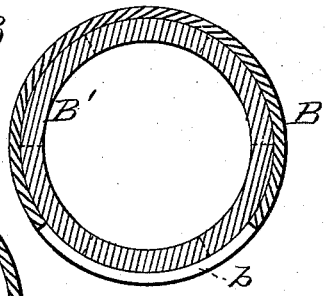


Fig. 4.

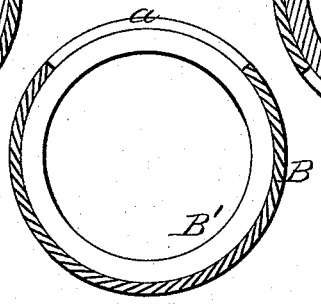
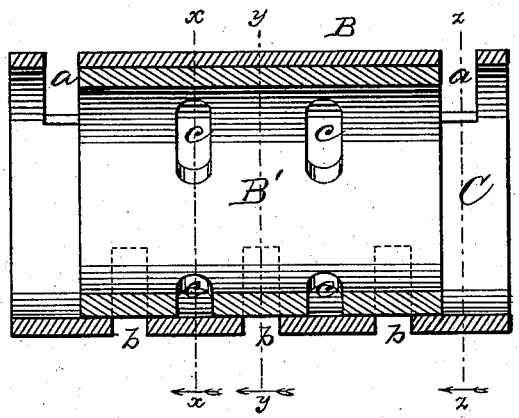


Fig. 5.



WITNESSES
Villette Anderson.
F. J. Masi.

INVENTOR
Jno. J. Tonkin,
by E. W. Anderson.
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN J. TONKIN, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN N. VAN LEW, OF SAME PLACE.

IMPROVEMENT IN PUMP-VALVES.

Specification forming part of Letters Patent No. **209,525**, dated October 29, 1878; application filed September 23, 1878.

To all whom it may concern:

Be it known that I, JOHN J. TONKIN, of Richmond, in the county of Henrico and State of Virginia, have invented a new and valuable Improvement in Pump-Valves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of the valve applied to its chamber. Figs. 2, 3, and 4 are cross-sections of the valve, taken, respectively, at the dotted lines *x x*, *y y*, and *z z* in Fig. 4; and Fig. 5 is a longitudinal section of the same detached.

This invention has relation to improvements in pump-valves; and it consists in a valve composed of a stationary cylindrical metallic tube, having educt-slots formed in it near its ends and induct-slots opposite the educts inside of the same, and a rubber tube arranged inside of and fitting closely the metal tube, and terminating at the inner edges of the educts, the said rubber tube being provided between the induct-slots with water-ways, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates my improved valve, composed of a cylindrical metallic tube, B, having at its ends, upon its up side, the oblong educt-slots *a*, and upon its down side the induct-slots *b*. As shown in Fig. 2, the latter are formed in the space on the down side of the tube, opposite the solid portion thereof included between the educts *a*—that is, the said inducts are formed in the tube inside of the educts.

B′ represents a rubber tube fitting snugly inside of the seat-tube, and extending, as shown in Fig. 2, from the inner edge of one of the educts to the corresponding portion of the other. This tube completely closes the inducts *b*, and is provided in the spaces between said inducts with the elongated water-ways *c*, of which there are usually three rows, in order that, should the rubber cylinder turn, one of said rows will always be in position.

These water-ways are not indispensable; but as they add to the speed with which the valve opens and closes, they will usually be used. This valve is passed into a cylindrical chamber, C, open at top and bottom and closed at its sides, at the lower end of the pump or in the pump-buckets, and the open ends of the seat-tube tightly closed by means of the cap-plates D, in such a manner that water can pass from the well or cistern into the supply-pipe, or from the latter into the pump-barrel, only through the valve.

When the plunger is lowered water presses up against the bottom of the valve, causing its rubber cylinder to flex inward, as shown in Fig. 1, uncovering the induct-slots and allowing the water to pass through the valve in the course indicated by the arrows—that is, through the inducts *b* and water-ways *c c*—and at the ends of the rubber cylinder into the space above said valve, and when the said plunger is raised the rubber cylinder springs back into place, covering the induct-slots up, thus preventing the escape of the water downward, and causing it to be lifted until, reaching the spout, it flows out of the same.

It is evident that, whether located in the plunger of the pump or at its bottom, my improved valve operates in the same manner.

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

1. The pump-valve composed of the cylindrical metallic seat-tube having spaced inducts in its down side and educts in its up side, and a stationary cylindrical rubber tube arranged inside of and fitting closely the seat-tube covering the inducts, and leaving the educts uncovered, substantially as specified.

2. The combination, in a valve, of a cylindrical seat-tube, B, having educts *a* in its up side, near its ends, and inducts *b* in its down side, opposite to and between the said educts, and a tubular rubber cylinder, B′, covering the inducts and leaving the educts uncovered, and provided with water-ways *c* between the said inducts, substantially as set forth.

3. A cylindrical rubber valve, B′, having the water-apertures *c c* in its cylindrical wall, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in presence of two witnesses.

J. J. TONKIN.

Witnesses:
JOHN N. VAN LEW,
M. P. CALLAN.