2 Sheets--Sheet 1.

J. ARMSTRONG & D. CHENEY.

Outlet-Valves for Water-Tanks.

No. 141,747. Patented August 12, 1873.

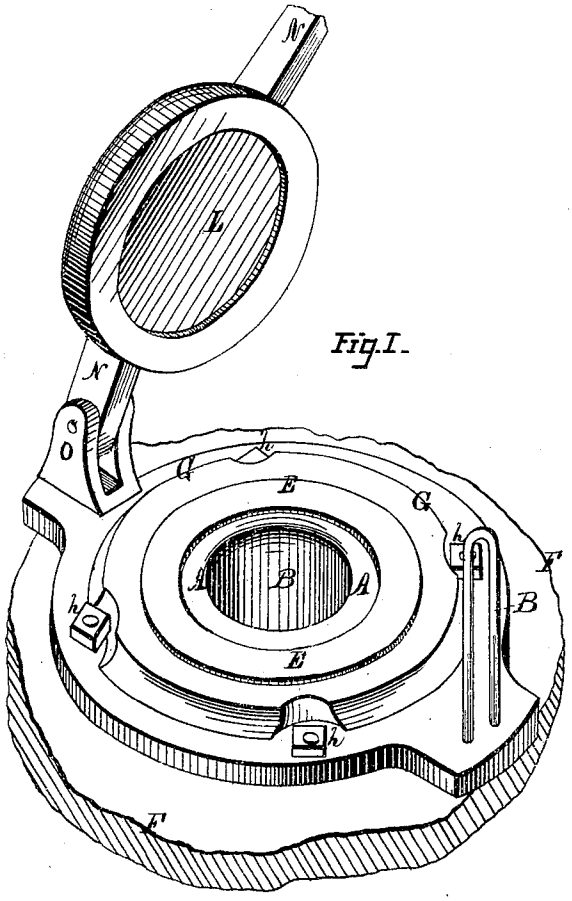
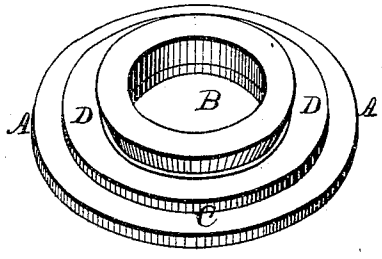
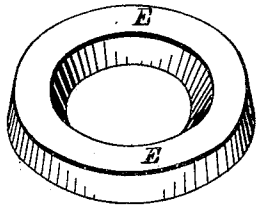


Fig. 1.

Fig. 2.





WITNESSES:

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2 Sheets--Sheet 2.

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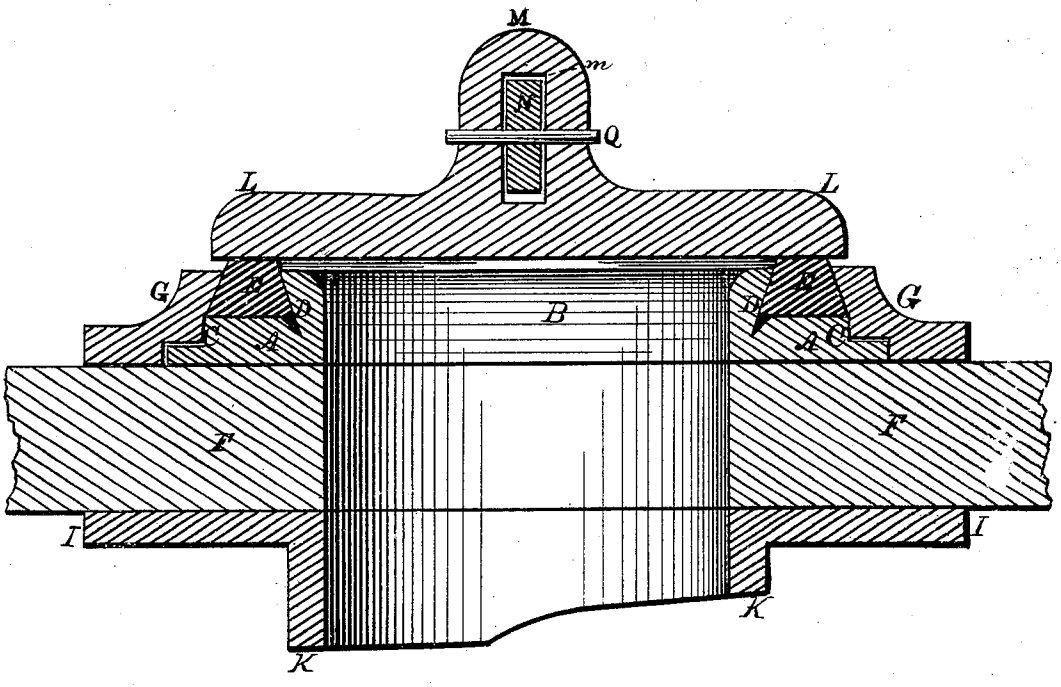
Fig. 3.



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UNITED STATES PATENT OFFICE.

JASPER ARMSTRONG, OF ST. JOSEPH, AND DANFORTH CHENEY, OF BROOKFIELD, MISSOURI.

IMPROVEMENT IN OUTLET-VALVES FOR WATER-TANKS.

Specification forming part of Letters Patent No. **141,747**, dated August 12, 1873; application filed July 7, 1873.

To all whom it may concern:

Be it known that we, J. ARMSTRONG, of St. Joseph, Buchanan county, and DANFORTH CHENEY, of Brookfield, in the county of Linn, and in the State of Missouri, have invented certain new and useful Improvements in Outlet-Valves for Water-Tanks; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of our device as applied to the bottom of a water-tank, Fig. 2 is a perspective view of the rubber seat and its holder separated from each other, and Fig. 3 a vertical central section of the device upon a line having a right angle to the operating-lever.

Letters of like name and kind refer to like parts in each of the figures.

The object of our invention is to increase the efficiency and durability, and decrease the cost of, a water-tank valve; and to this end it consists, principally, in the construction of the rubber seat and its holder, and their combination with the frame of the device, substantially as and for the purpose hereinafter specified. It consists, further, in the construction of the valve, and its combination with the operating-lever, substantially as and for the purpose hereinafter shown.

In the annexed drawing, A represents an annular disk of metal, made plain upon its lower side, provided with a central opening, B, and having within its upper side two annular rabbets, C and D, the first of which extends inward from its outer edge, and is formed upon horizontal and vertical lines, while the second rabbet D extends horizontally inward from the inner edge of said outer rabbet, and has its inner side formed upon an outward and upward extending line, as seen in Figs. 2 and 3. Within the rabbet D is placed a correspondingly shaped annular ring of rubber, E, which, at its base, has a width slightly greater than the bottom of said rabbet, and a height sufficient to bring its upper surface considerably above the corresponding portion of the disk A. The outer side of said rubber ring inclines upward and inward at an angle substantially the reverse of that upon which its inner side is formed. The disk A and rubber ring E, thus constructed and combined, are placed upon the bottom F of a water-tank, and secured thereon by means of an annular metal plate, G, which corresponds in interior size and shape to the exterior edges of said disk and rubber, and is fastened in place by means of a number of bolts, H, that pass downward through the outer portion of said plate, through said bottom, and through the flange I of a discharge-pipe, K, which is placed against the lower side of said bottom. The valve L consists of a circular disk of metal, having a somewhat greater diameter than that of the rubber seat. Its lower side or face is made plane, while at its upper side and center is provided a boss, M, through which is formed a horizontal slot, *m*, that has, preferably, a rectangular shape in horizontal section. The operating-lever N is pivoted at one end to or within a suitable bearing, O, and, passing through the slot *m* within the upper side of the valve, has its outer free end contained within a guide, P, which latter permits free vertical movement within certain limits. A pin, Q, passing horizontally and transversely through the boss M and lever N, forms an axial bearing for the valve, and insures the longitudinal position of the same upon said lever.

As thus constructed, by raising the outer end of the lever the valve is removed from its seat, and water contained in the tank is permitted to pass downward through an opening in the tank-bottom, which corresponds in size and shape to the opening B within the disk A.

It will be seen that as no bolts or rivets are directly employed for securing the rubber seat to or upon its holder, said rubber can be easily and quickly removed from or placed in position whenever required, it being only necessary that the nuts *h* upon the upper ends of the bolts H be removed in order to loosen all of said parts and permit of their separation.

The device described possesses the following-named advantages: First, there is no liability to obstruction by frost unless the entire body of water contained within the tub should become frozen. Second, from the greater

thickness of rubber employed than would be practicable if attached to the valve, greater elasticity and durability are secured than would otherwise be possible. Third, the position of the rubber seat renders it safe from injury caused by punching with sticks or metal bars from below, and also from injury caused by the use of heated irons inserted from beneath. Fourth, the entire device is simple in construction, efficient in action, durable, and can be furnished at a comparatively small cost.

Having thus fully set forth the nature and merits of our invention, what we claim as new is—

1. The holder A, provided with the central opening B and rabbets C and D, and the valve-seat E fitted to or within said rabbet D, when said parts are combined with each other and with the covering-plate G, substantially as and for the purpose specified.

2. The valve L, provided with the boss M and slot *m*, in combination with the operating-lever N and pivoted bearing-pin Q, substantially as and for the purpose shown.

In testimony that we claim the foregoing we have hereunto set our hands this 2d day of July, 1873.

JASPER ARMSTRONG.
DANFORTH CHENEY.

Witnesses:
A. J. MEADE,
W. D. CRANDALL.