(No Model.)

L. H. BRINKMAN.

BALL COCK.

No. 598,133. Patented Feb. 1, 1898.

Fig. 4.

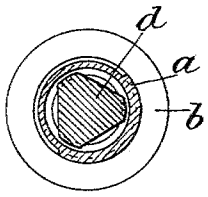


Fig. 2.

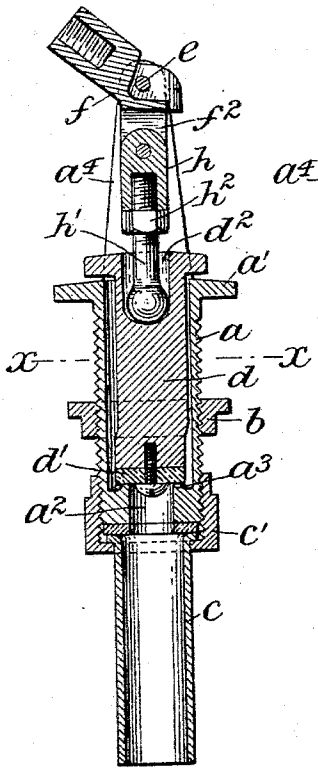


Fig. 3.

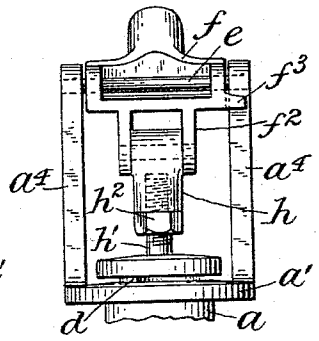
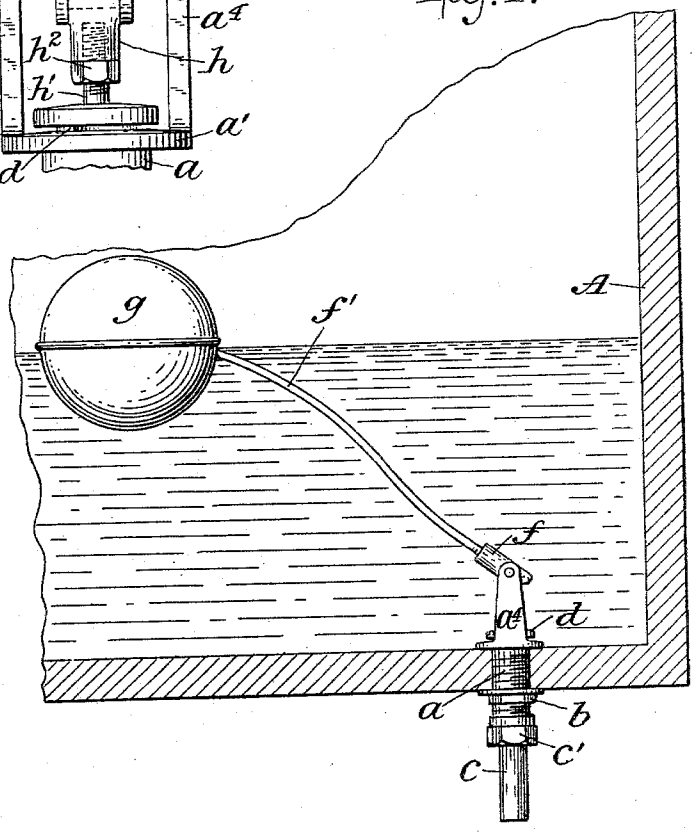


Fig. 1.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIES H. BRINKMAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE NEW YORK PIPE BENDING AND MACHINE COMPANY, OF SAME PLACE.

BALL-COCK.

SPECIFICATION forming part of Letters Patent No. 598,133, dated February 1, 1898.

Application filed February 8, 1897. Serial No. 622,440. (No model.)

To all whom it may concern:

Be it known that I, LOUIES H. BRINKMAN, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings, in the State of New York, have invented certain new and useful Improvements in Ball-Cocks, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to valves such as are commonly employed for the purpose of controlling the delivery of water to a flushing tank or reservoir and which operate in such a manner as to permit the further inflow of water when the supply in the tank or reservoir is drawn off and to check the further inflow when the water has risen again in the tank or reservoir to a predetermined height. Such valves are commonly operated by a lever having at its free end a float which rises and falls with the water in the tank. It has been usual to vary the size of the float according to the pressure of the water in the supply-pipes, a large float being necessary when the pressure of the water is great in order to keep the valve closed when the tank is full. Hollow metal balls are usually employed for such floats and not only does the cost of making them increase rapidly with an increase in size, but the large balls are cumbersome and take up too much room. It has been sought to obviate the necessity of using large floats by employing some form of balance-valve, but such valves are expensive to manufacture and are somewhat liable to leak and get out of order.

With all of the difficulties above mentioned in mind I have sought to produce a valve which can be operated by a small float and when closed will be positively locked against the pressure of the water, so that it shall not be necessary to increase the size of the float, no matter how great the pressure of the water in the supply-pipe may be.

A convenient and desirable construction in which my invention may be embodied is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a valve and float applied to a tank, a portion of the latter being shown in section. Fig. 2 is a longitudinal central section of the improved valve. Fig. 3 is a front elevation of the upper portion thereof. Fig. 4 is a transverse section on the plane indicated by the line $x\,x$ of Fig. 2.

The valve shown in the drawings comprises a tubular body portion a, having a flange a' and adapted to be secured in the bottom or side wall of the tank A by a nut b in the usual and well-known manner. It is also adapted to be connected to the supply-pipe c by a sleeve-nut c' in the usual manner. In the end of the tubular body a is a port a^2 for the admission of water, formed at its inner end with a suitable shoulder or valve-seat a^3. The valve-plug d enters loosely within the body a, and is preferably provided at its lower end with a washer d' to make a tight joint with the valve-seat a^3 when the plug is held down. The plug d is suitably shaped in cross-section, as represented, for example, in Fig. 4, to permit the water which enters through the port a^2 to pass freely between the plug d and the tubular body portion a into the tank or reservoir A.

From the upper end of the body portion a rise two posts or standards a^4 to support a pivot-rod e, upon which is mounted the lever f, which controls the valve. One arm of the lever is extended, as at f', to receive the ball or float g, which rises and falls with the water in the tank and effects the movements of the lever. The other arm f^2 of the lever f is extended toward the valve-plug d, making an elbow-lever. To the extremity of the arm f^2 is connected a link h, which bears upon the plug d, the latter preferably having a recess d^2 to receive the end of the link. If desired, the link may be made in two parts in order to be extensible for purposes of adjustment, the part h' being threaded into the main part of the link and fixed in position by a lock-nut h^2. A projection f^3 is formed on the arm f^2 to bear upon one of the standards a^4 and thereby prevent movement of the lever beyond the position indicated in Fig. 2, in which the center of the connection between the link h and the arm f^2 is but slightly beyond a straight line between the center of the pivot e and the center of the bearing of the link h upon the plug d. It will be seen that the lever f and

the link *h* constitute a toggle-lever, and that when the parts are in the position represented in Figs. 1 and 2, in which it is assumed that the tank is filled to the required extent and that the float *g* is in its highest position, the two members of the toggle-lever are substantially in a straight line and the plug *d* is thereby positively locked upon its seat, so that it cannot be raised therefrom by the pressure of the water against it, no matter how great that pressure may be; but when the water in the tank is drawn off and the float *g* falls the plug is immediately released to admit a fresh supply of water. It will also be seen that as the tank fills again and the float rises the valve is easily closed and that only a small ball is required.

No further description of the nature and mode of operation of my improvement will be required. Obviously the device, while operating with great efficiency and not being liable to get out of order, is of very low cost to manufacture, having but few parts and requiring but very little finishing of the rough castings. It will be understood, of course, that I do not intend to limit my invention to the precise construction and relations of parts which I have shown herein.

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

The combination of a valve-body having a valve-seat, a valve-plug entered loosely within the valve-body and having a washer at its lower end, and a recess in its upper end, a float-lever pivoted upon standards on the valve-body and having an arm extended toward the valve-plug, and a two-part link, one part being pivoted to said arm and the other part being threaded into the first part and provided with a lock-nut, the last-named part entering the recess in the valve-plug to bear thereon, substantially as shown and described.

This specification signed and witnessed this 16th day of January, A. D. 1897.

LOUIES H. BRINKMAN.

In presence of—
ALFRED W. KIDDLE,
W. B. GREELEY.