

(No Model.)

J. R. ALLAN.

BALL COCK FOR TANKS FOR WATER CLOSETS, &c.

No. 503,339.

Patented Aug. 15, 1893.

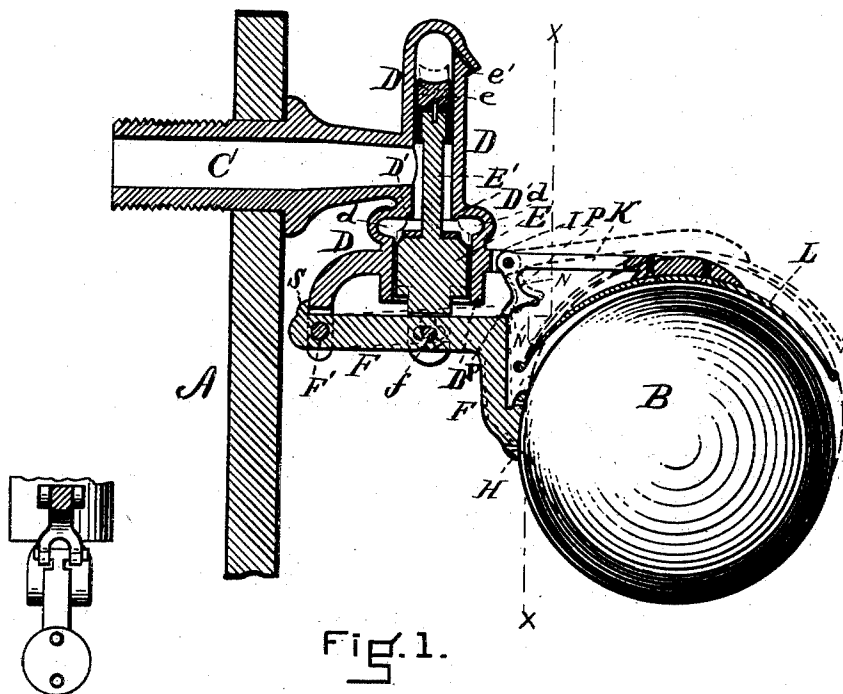


Fig. 1.

Fig. 3.

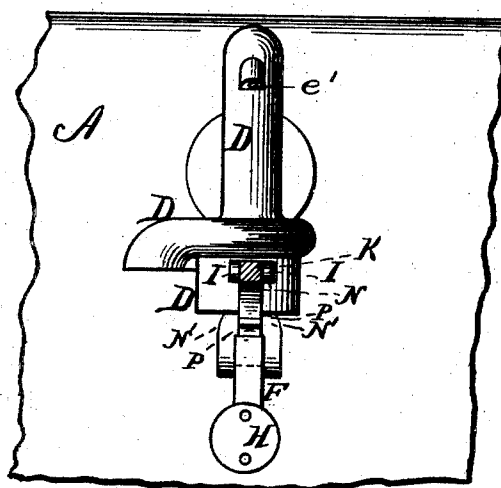


Fig. 2.

WITNESSES

J. M. Hartnett.

B. M. Williams

INVENTOR

INVENTOR
John R. Allan
By his Atty
Henry Williams.

By his Atty

Henry Williams

UNITED STATES PATENT OFFICE.

JOHN R. ALLAN, OF BOSTON, MASSACHUSETTS.

BALL-COCK FOR TANKS FOR WATER-CLOSETS, &c.

SPECIFICATION forming part of Letters Patent No. 503,339, dated August 15, 1893.

Application filed March 6, 1893. Serial No. 464,785. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. ALLAN, a subject of the Queen of Great Britain, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Ball-Cocks for Tanks for Water-Closets, &c., of which the following is a specification.

In this invention the apparatus is constructed with a relief attachment which prevents the valve from closing slowly and gradually, but holds it open while the tank is being refilled until it is nearly full, when it allows the valve to close quickly and suddenly. Thus the unpleasant continuous sound produced by a slowly closing valve is avoided.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts, Figure 1 is a sectional view taken vertically of a ball-cock embodying my invention. Fig. 2 is a section on line *z*, Fig. 1, looking toward the left. Fig. 3 is a detail in section on the same line showing a modification.

A represents the wall of a tank, and B the ball or float therein.

C is the supply pipe leading into the casing D of the valve E of which E' is the stem, all constructed as usual. The valve rises and drops in the casing D, rising to its seat D' to stop the supply, and, when in the position shown in Fig. 1 allows the water to flow into the tank through the space or passage *d*.

The construction of the cork *e* and vent-hole *e'* is too common to need explanation.

The valve is provided with a guide-pin *f* which extends into a slot in the bent arm F, said arm being pivoted at F' to the casing D and being provided with a disk H at its outer end which is screwed to, and thereby supports, the float B.

The casing D is provided on the side next the ball with a pair of ears I between which is pivotally secured a bent lever, the horizontal or long arm K of which has secured to the under side of its outer end a concavo-convex disk or cup L, which corresponds in shape with the ball B directly over which it is set. The short arm N of this lever extends down at an acute angle with the long arm K and is provided at its lower end with a foot or toe

piece N' of suitable size and shape to extend to and rest or catch upon the corner of the arm F, as shown in Fig. 1.

A vertical shoulder S extends from the outer end of the arm F against the outer surface of the casing D. When water is used and drawn from the tank, the float B drops with the surface of the water into the position shown in Fig. 1, but cannot drop any farther as it is held by the shoulder S against the casing D, so that it is held in suspension above the surface of the water should the water recede sufficiently.

When the water, replenished through the supply pipe C and space *d* in the valve, rises sufficiently the air is trapped under the disk or cup L, and, when the pressure is strong enough, suddenly lifts it and hence lifts the outer end of the lever K into the position shown in broken lines in Fig. 1, moving the toe N' from its position on the arm F, where it is barely caught, with the result that the said arm F, which is secured to the float, being free as the float rises suddenly lifts the valve E and seats it against the part D' and shuts off the supply.

Thus it will be seen that the movement of the float is short and sudden, and it does not begin to rise until the supply is ready to be cut off, and when this is done, it is performed so quickly that it is impossible there should be any long unpleasant sound such as is caused by the water while the valve is slowly closing during the gradual filling of the tank, as is the case in ball-cocks constructed as is now common.

In the modification shown in Fig. 3, the short arm N has two feet N' which lie under a T shaped piece P which serves as an aid to the feet catching, in case the water is somewhat disturbed, so that the float and arm F are unsteady.

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

In a ball-cock for tanks for water closets &c., in combination, the valve-operating arm F pivoted to the stationary portion D of the apparatus and having the float secured to its free end, said arm being provided with a check or stop, as S, and the lever K N pivoted to the

casing and consisting of the substantially horizontal long arm K provided at its outer end with the cup or disk L, and the nearly vertical short arm N provided with the projecting foot or toe N' for engaging said arm F at the extreme edge thereof, and adapted to be tripped to release said arm by the rise

of the said cup or disk, substantially as set forth.

JOHN R. ALLAN.

Witnesses:

HENRY W. WILLIAMS,
J. M. HARTNETT.