

No Model.)

J. H. STEVENS, JR.  
BALL COCK.

No. 525,870.

Patented Sept. 11, 1894.

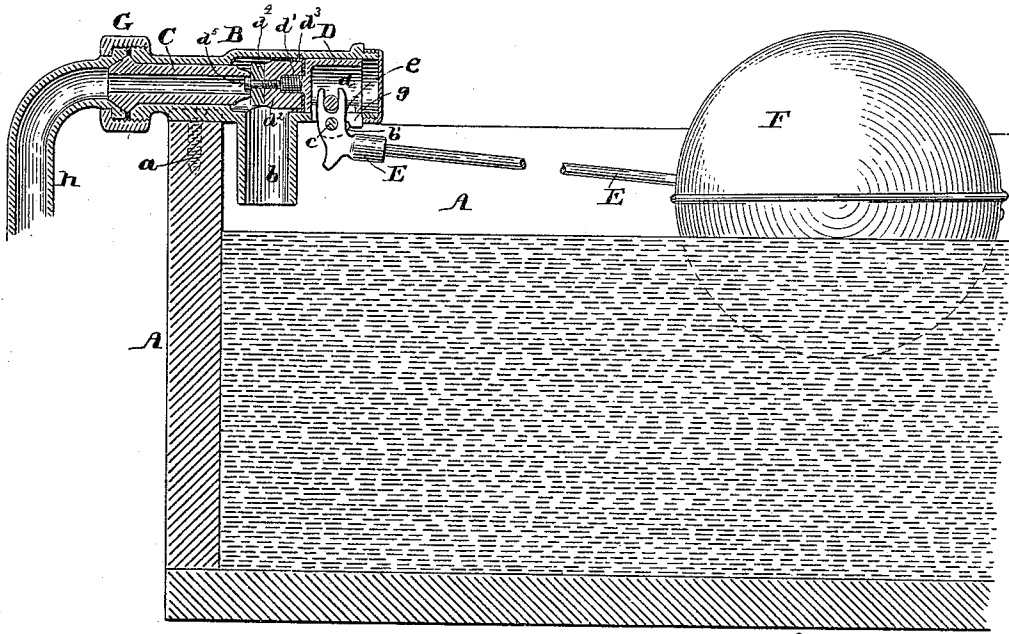


Fig. 1.

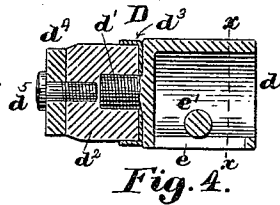


Fig. 4.

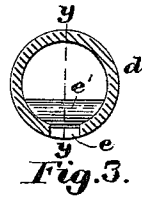


Fig. 3.

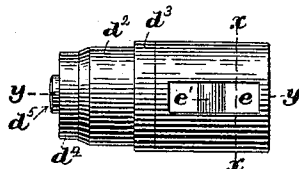


Fig. 2.

Witnesses:

Walter E. Lombard  
Geo. A. Sawall

Inventor:

John H. Stevens, Jr.,  
by N. P. Lombard  
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# UNITED STATES PATENT OFFICE.

JOHN H. STEVENS, JR., OF CAMBRIDGE, MASSACHUSETTS.

## BALL-COCK.

SPECIFICATION forming part of Letters Patent No. 525,870, dated September 11, 1894.

Application filed February 17, 1894. Serial No. 500,540. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. STEVENS, Jr., of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ball-Cocks, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to ball cocks and it consists in certain novel features of construction, arrangement and combination of parts which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended and in which my invention is clearly pointed out.

Figure 1 of the drawings is a central longitudinal section through my improved ball cock and a portion of a water tank the valve operating lever and the ball float being shown in elevation. Fig. 2 is an elevation of the valve. Fig. 3 is a transverse section of the same on line *x, x*, on Figs. 2 and 4, and Fig. 4 is a longitudinal section on line *y, y*, on Figs. 2 and 3.

In the drawings A is the tank, for holding the supply of water, which may be of any well known construction and provided with any suitable discharge pipe and valve, not shown, and B is the ball cock casing bored out, preferably to two different diameters, the inner half of its length being of somewhat larger diameter than its outer half, provided with the discharge pipe *b* and suitable ears by which and screws *a* shown in dotted lines in Fig 1 said casing is secured to the tank in a well known manner.

C is a removable valve seat fitted to the smaller bore of said casing and secured therein and to the supply pipe H by the coupling nut G as described in another application of mine of even date herewith.

D is the valve composed preferably of the chambered cylinder *d* provided with the threaded shank *d'*, the cylindrical nut *d<sup>2</sup>*, the cupped packing *d<sup>3</sup>*, the leather disk *d<sup>4</sup>*, and the clamping screw *d<sup>5</sup>*, though the cupped packing *d<sup>3</sup>* may be dispensed with if desired and the parts *d* and *d<sup>2</sup>* be made in one piece without affecting the principles of my invention.

E is a valve operating lever pivoted at *c* to

ears *b'* formed on the casing A and having secured to the end of its long arm the ball float F in a well known manner.

The chambered cylinder *d* has a slot *e* cut through its wall at its under side and has formed integral therewith the cylindrical bar *e'* which bridges said slot within the bore of said cylinder as shown in Fig 3.

In the ball cocks in general use the short arm of the lever which operates the valve projects through a slot in the side of the valve and moves said valve by acting upon the opposite ends of the slot, or the lever is forked and engages the opposite sides of a projecting lug or rib in such a manner that the inner corners of the ends of the fork soon become worn to such an extent as to render the movements of the valve unreliable, and the same is true when the lever acts upon the ends of the slot in the thin wall of the cylinder. To obviate this objection or reduce the liability to wear at this point to a minimum I form in said cylinder the cylindrical bar *e'* and fork the inner end of the short arm of the lever E and cause it to engage said bar, as shown in Fig. 1. By this construction a much more durable connection is made between the valve and its operating lever than those now in use, and at very little, if any, additional cost.

Another advantage of my invention is that the valve D can be removed for repairs without disconnecting the supply pipe H and removing the seat C which has to be done with the ball cocks now in use which have removable seats.

To remove the valve from its casing, when constructed according to my invention, it is only necessary to remove the cap *f* from the inner end of the casing, and remove the fulcrum pin *c* so as to disengage the lever E from the bar *e'* when the valve may be drawn from its casing.

In another application of mine, of even date herewith, a casing and valve constructed substantially the same as shown and described in this application, are shown but not claimed therein, and in this case a removable seat, and clamping devices for securing it in position, which form the subject matter of said other application, are shown but not claimed.

It will be observed that the casing A has

formed in its under side near its inner end a slot *g* for the passage of the short arm of the lever *E* to engage the bar *e'*.

5 What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a ball cock, the combination of the casing *B* having a bore extending entirely through same in a straight line, and provided with the discharge pipe *b*; the tubular bushing *C* fitted to said casing and having a valve seat formed upon its inner end and an annular enlargement upon its outer end to bear against the end of said casing, and adapted to be withdrawn from the same end of said casing; 10 means having provision for clamping said bushing in position in said casing; a reciprocating piston valve fitted to, and removable from the opposite end of, said casing and made in two parts secured together with a cup pack- 15 ing between them, and provided on its inner end with a disk packing to bear against said seat; and means having provision for connecting said valve to a ball float, and causing said valve to be moved endwise when said 20 float rises or falls.

2. In a ball cock, the combination of the casing *B* open at both ends; the bushing *C*

having an axial bore extending the whole length thereof and having a valve seat formed on its inner end, and an annular enlargement at its outer end to bear against one end of said casing; the pipe *H* constructed to abut against the outer end of said bushing, and provided with an outwardly projecting collar at its end contiguous to said bushing; the 35 coupling *G*, screwed upon said casing to clamp said pipe and bushing to said casing; the piston valve *D* provided with the cup packing *d<sup>3</sup>*, the disk packing *d<sup>4</sup>* the slot *e* cut through one side of the wall of said valve, and the 40 cylindrical bar *e'* formed integral with one of the parts of said valve and bridging said slot as set forth; the forked elbow lever *E* pivoted to said casing and engaging said bar; and the float *F*, all constructed arranged and operat- 45 ing substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 14th day of February, A. D. 1894.

JOHN H. STEVENS, JR.

Witnesses:

N. C. LOMBARD,  
JAMES T. MURRAY.