

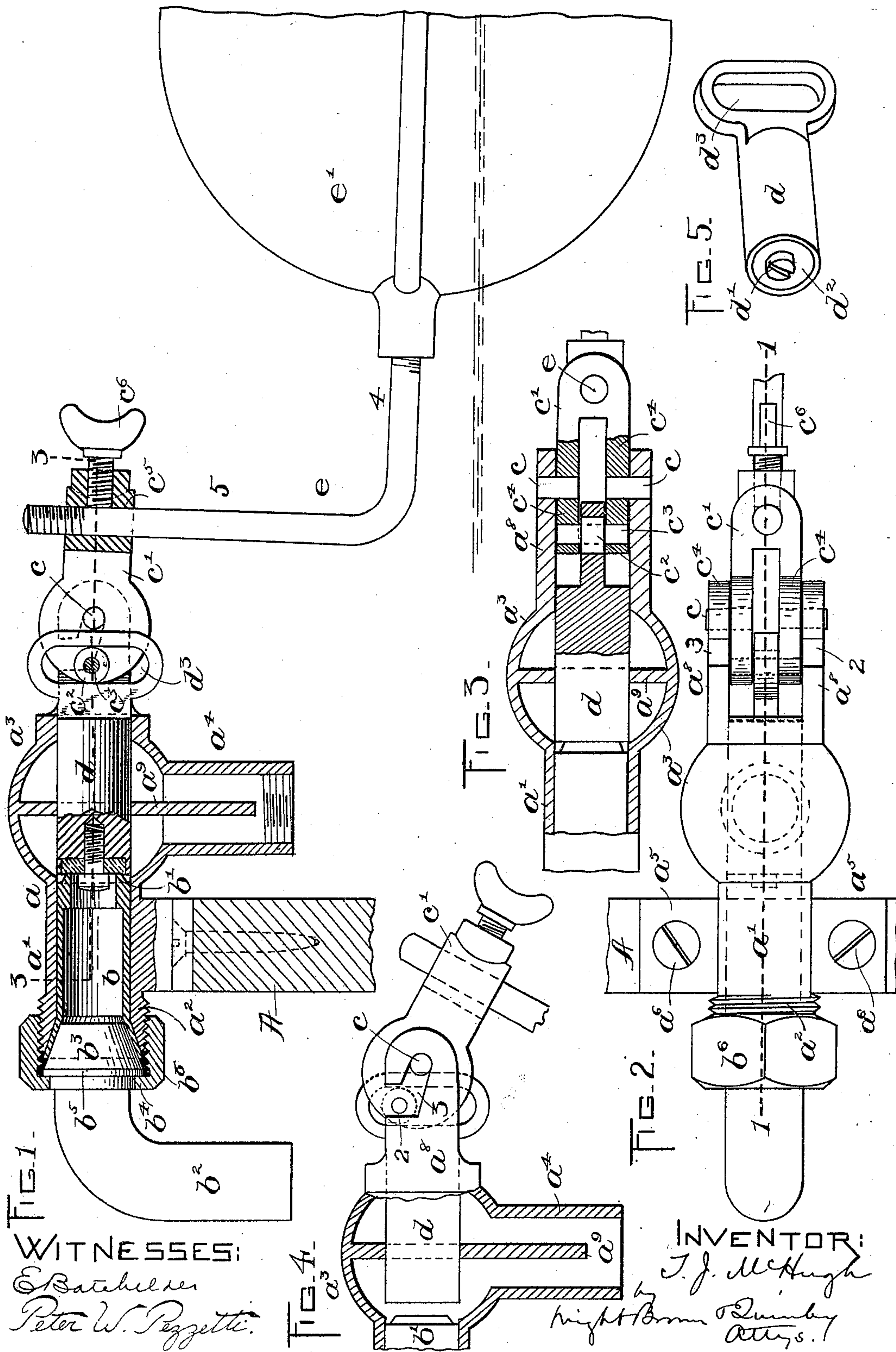
No. 617,597.

Patented Jan. 10, 1899.

T. J. McHUGH.  
BALL COCK.

(Application filed Sept. 7, 1897.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

TIMOTHY J. MCHUGH, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM H. GALLISON, OF BOSTON, MASSACHUSETTS.

## BALL-COCK.

SPECIFICATION forming part of Letters Patent No. 617,597, dated January 10, 1899.

Application filed September 7, 1897. Serial No. 650,720. (No model.)

*To all whom it may concern:*

Be it known that I, TIMOTHY J. MCHUGH, 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 is a specification.

This invention has relation to ball-cocks for supplying water to flushing-tanks and other like purposes; and it consists of a device of the character mentioned possessing certain features of construction and arrangement which are clearly illustrated upon the drawings and are now to be described and claimed, in which the valve is seated against the pressure of the water in such way as to prevent pounding.

Reference is to be had to the accompanying drawings, and to the letters and figures marked thereon, forming a part of this specification, the same letters and figures designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 shows in longitudinal section a ball-cock embodying my invention. Fig. 2 represents a plan view of the same. Fig. 3 represents a section on the line 3 3 of Fig. 1. Fig. 4 shows the valve as moved away from its seat to permit the free flow of water. Fig. 5 shows in detail the valve detached.

Referring to the drawings, the valve-casing *a* is formed with the cylindrical portion *a'* threaded, as at *a''*, and with the enlarged portion *a'''*, having the downwardly-extending discharge-spout *a''''*. In the enlarged cylindrical portion *a'''* is placed a pipe *b*, formed on its end into a valve-seat *b'*. A supply-pipe *b''* is formed with a conical end *b'''*, and the threaded end *a''* of the casing is flared, so that the end of the internal pipe *b* is clamped against the casing by the collar *b''*, which has a flange *b'''* to bear against a shoulder *b''''* on the end thereof.

The valve-casing is formed with laterally-projecting wings *a''''*, through which screws *a''''''* are passed to secure it to the side A of a tank. It is also provided with longitudinally-extending arms *a''''''*, each having a slot which extends downward, as at 2, and forward, as at 3, and

in the end of which is journaled the pivots *c c* of the float-lever *c'*, the said pivots being located in the central longitudinal plane of the casing.

The spherical portion *a'''* of the casing is provided with a downwardly-extending partition *a''''*, which is perforated to receive a sliding cylindrical valve *d*, having secured in its front end by a screw *d'* a disk washer *d''*, adapted to be pressed against the valve-seat *b'*. The valve projects through an aperture in the end of the casing and is provided in its projecting end with a transverse slot *d'''* to receive a trundle or roller *c''* on a pin *c'''*, extending between the two arms *c'''' c''''''* of the float-lever *c'*. The said float-lever is provided with a transverse aperture *c''''''* to receive a bent rod *e*, to the free end of which is secured the float or ball *e'*. The rod *e* is provided with a short arm 4 and a long arm 5 and is held in place in the lever by a set-screw *c''''''*, so that by loosening the screw and removing the rod the float *e'* may be placed upon the arm 5 and the arm 4 secured in the lever to obtain a greater leverage. The arrangement illustrated is suitable for small tanks where there is a lack of space and, moreover, causes an immediate closing of the valve when the water reaches the proper level.

The parts are assembled as follows: The lever is swung so as to extend at a right angle to the valve, which latter is inserted in the aperture in the casing until the pivots *c* are even with the slots 2 3 in the arms *a''''*, after which the said pivots are forced into the slots until they rest in the ends thereof. Then the valve-seat is slipped into place, and it and the supply-pipe *b''* are clamped in the casing by the collar *b''*. When the water in the tank has been drawn off, the float-lever swings upon its pivot and allows the water to force the valve back and flow through the discharge nozzle or spout, and when the water reaches the proper level the float throws the float-lever around its fulcrum, and the roll *c''*, moving in the transverse slot *b'''* in the valve, forces the valve up to its seat against the pressure of the water. When the valve is properly seated, the pin *c''* and the pivots



*c c* are in alinement and are located in the central longitudinal plane of the valve, whereby they are at a dead-center, thus locking the valve and preventing any rearward movement thereof even though the pressure of the water may be very great.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A valve comprising a casing having a valve-seat and open-ended longitudinal slots, a valve with a transverse slot, a lever having pivot-studs lying in said slots and also having a pin or projection entering the slot in the valve, said parts being arranged whereby when the valve is seated the pin and pivot-studs are in alinement with the valve, and a collar for preventing the lever from being displaced.

2. A valve comprising a casing having open-ended L-shaped slots, a movable valve-seat, a valve-lever having pivot-studs lying in said slots, said lever being connected to said valve, and a collar pressing against said valve-seat and forcing it forward to prevent the said pivot-studs from leaving the said L-shaped slots.

3. A valve comprising a casing, with a longitudinal through-aperture and a discharge-

spout extending transversely thereof, a tubular valve-seat secured in the aperture in one end of the casing, a cylindrical valve sliding in the aperture in the other end of the casing, a lever removably fulcrumed in slots in the casing and in line with the aperture and having means for forcing the valve against the seat, and a collar for securing the tubular valve-seat in the casing and preventing the lever from being removed.

4. A valve comprising a casing having parallel longitudinally-extended arms, a tubular removable valve-seat in said casing, a valve movable longitudinally of said arms in said casing against the pressure of water, a lever fulcrumed in the said arms, said lever being forked or bifurcated so as to project on either side of the end of the said valve, pivot-studs for fulcruming said lever in said arms, said studs being substantially in a line intersecting the central longitudinal line of the valve, and means such as a pin for connecting the lever and the valve, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 21st day of June, A. D. 1897.

TIMOTHY J. McHUGHII.

Witnesses:

E. BATCHELDER,  
PETER W. PEZZETTI.