J. H. McPARTLAND.

BALL COCK.

APPLICATION FILED JUNE 9, 1916.

1,231,399. Patented June 26, 1917.

Fig. 1.

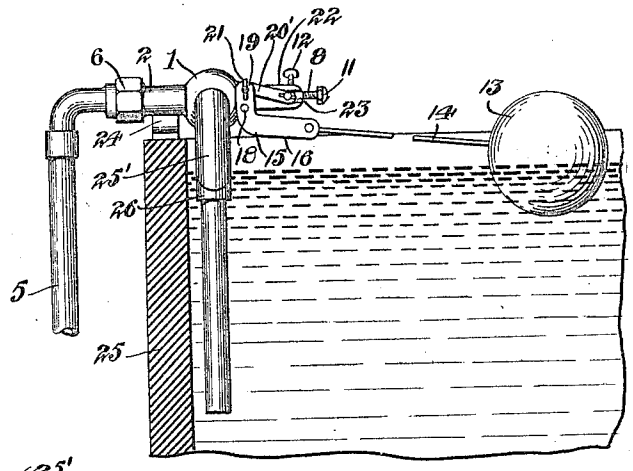


Fig. 2.

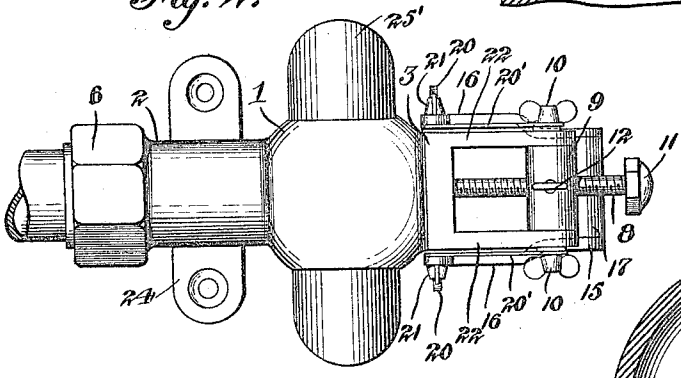


Fig. 4.

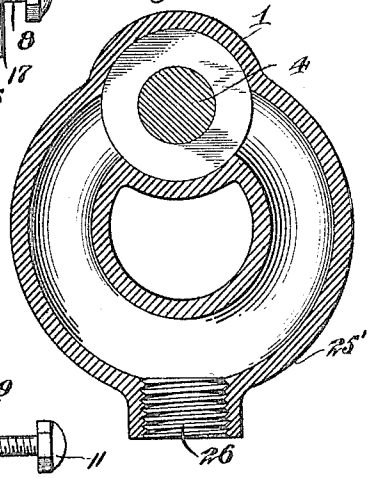
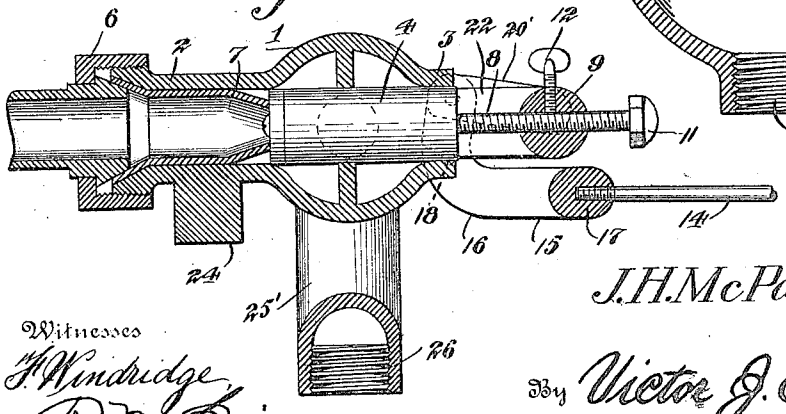


Fig. 3.



Witnesses

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BALL-COCK.

1,231,399. Specification of Letters Patent. Patented June 26, 1917.

Application filed June 9, 1916. Serial No. 102,733.

To all whom it may concern:

Be it known that I, JAMES H. McPARTLAND, a citizen of the United States, residing at Houlton, in the county of Aroostook and State of Maine, have invented new and useful Improvements in Ball-Cocks, of which the following is a specification.

This invention relates to ball cocks, the object in view being to provide a ball cock having a novel arrangement of intake and outlet portions and a valve coöperating with an internal seat within the casing so as to render the device practically noiseless in operation.

A further object of the invention is to provide a novel mounting of the operating means employed for actuating the valve to and from its closed position whereby a direct pull or push is obtained on the stem of the valve and better leverage produced by reason of such direct pull.

Another object of the invention is to provide in connection with the valve, a cross head with which the valve is connected, and a regulating screw for the purpose of enabling the desired water level in the tank to be obtained and also for entirely cutting off the flow of water in order to facilitate repair work.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—

Figure 1 is a side elevation of a ball cock constructed in accordance with the present invention, showing a portion of the tank in section, and the float connected with the valve operating lever.

Fig. 2 is a plan view of the ball cock.

Fig. 3 is a vertical longitudinal section through the same.

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Referring to the drawings 1 designates the casing of the valve, the same being provided at one side with an intake neck 2 and provided diametrically opposite thereto with a guiding neck 3 for the valve 4 which is of the reciprocatory type.

5 designates the water supply pipe which is connected by a union 6 to the intake neck 2. The valve 4 is movable toward and away from on internal valve seat 7 within the neck 2. The stem 8 of the valve is threaded through a cross head 9 having oppositely projecting trunnions 10 preferably in the form of thumb screws the inner ends of which are threaded into the opposite ends of the cross head 9. The valve stem 8 is provided at its outer extremity with a head 11 by means of which the valve may be primarily adjusted to the desired distance from the valve seat according to the amount of water desired in the tank. 12 designates a set screw threaded through the cross head 9 and adapted to bind against the threaded valve stem 8 to hold said stem and cross head in fixed relation to each other after the desired adjustment above referred to has been made.

13 represents the usual float, 14 the arm or stem of the float, and 15 a lever which is rocked by the float arm 14. This lever has oppositely arranged arms 16 connected at their free extremities by a cross piece 17 to which the float arm or stem 14 is fastened so that as the float 13 rises and falls, a corresponding movement is imparted to said lever. The two arms of the lever are pivotally connected to the neck 3 of the casing 1 by means of pivots 18 preferably in the form of thumb screws in order that they may be removed with facility. Beyond these pivot points, the arms of the lever are formed with short upward extensions 19 which receive pivots 20 carried by the inner ends of a pair of links 20′. The pivots 20 are preferably in the form of screws adapted to receive thumb nuts 21 which are readily removable. The opposite ends of the links 20′ are formed with holes to receive the trunnions 10 carried by the cross head. The cross head is supported by and slidable in relation to a pair of fixed arms 22 extending outwardly from the neck 3 and formed with open ended longitudinal slots 23 in which the trunnions 10 are slidable. The inlet neck 2 is provided at a suitable point with an attaching base 24 by means of which the ball cock as a whole may be secured in fixed relation to the tank indicated at 25.

The casing 1 is formed at diametrically opposite sides with outlet openings and communicating with said openings is an annular or loop-shaped outlet pipe 25′ having at the lowermost point thereof an outlet or discharge neck 26.

By reason of the construction above described, the water received from the water supply pipe and passing through the inlet neck is divided about equally within the

casing 1 and is carried in opposite directions therefrom and the two streams are brought together and discharged through the outlet neck 26. By reason of this separation or diversion of the water into two streams which again meet, the objectionable hissing noise is practically eliminated and the valve as a whole is rendered practically noiseless. Furthermore, a direct pull and push is obtained on the valve, thus avoiding any cramping of the joints and thus increasing the leverage and sensitiveness of the valve in its operation. The valve may be adjusted by means of the regulating screw to produce any desired level of water in the tank and may also be used for forcing the valve against its seat and holding it there while repair work is being done.

I claim:—

1. A ball cock comprising a valve casing having a valve chamber, an inlet and an internal valve seat, a slidable piston valve operating within said valve casing and movable toward and away from said valve seat, and a circular outlet connection having a single discharge outlet and intersecting the valve chamber at opposite sides of the latter and in a plane at a right angle to the path of movement of the valve.

2. The combination of a valve casing, a valve seat therein, a water inlet neck extending from said casing, a reciprocatory valve movable toward and away from said seat, guide arms extending horizontally from said casing and having horizontally elongated slots therein, a cross head having trunnions slidable in said slots, a valve stem having a threaded connection with and passing through said cross head, a float operated lever, and links connecting the latter to said trunnions.

In testimony whereof I affix my signature.

JAMES H. McPARTLAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."