L. UNCKLESS.

BALL COCK.

APPLICATION FILED MAR. 6, 1911.

1,016,458. Patented Feb. 6, 1912

Fig. 1.

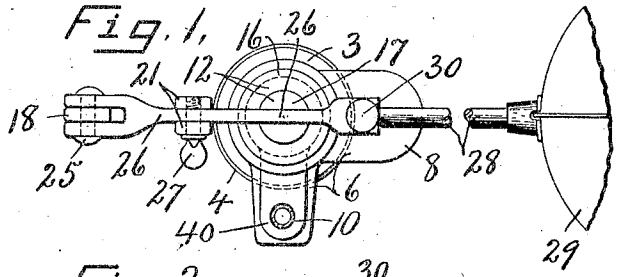


Fig. 2.

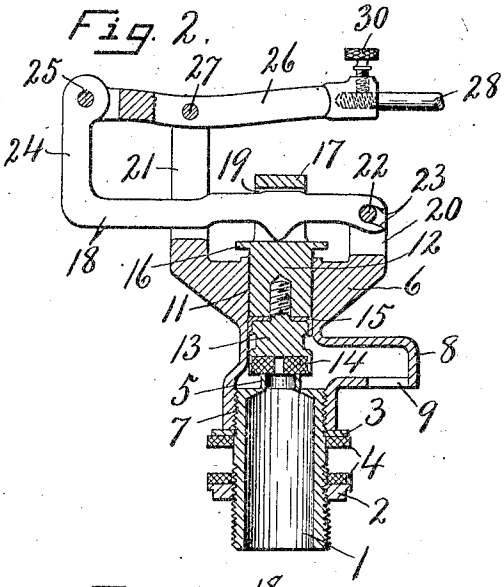
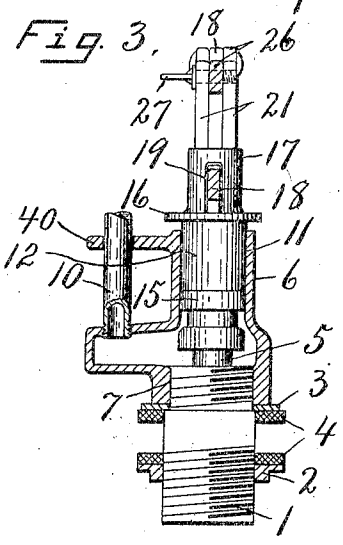


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

LESLIE UNCKLESS, OF EASTWOOD, NEW YORK, ASSIGNOR TO CENTURY SANITARY MANUFACTURING COMPANY, OF EASTWOOD, NEW YORK, A CORPORATION OF NEW YORK.

BALL-COCK.

1,016,458. Specification of Letters Patent. Patented Feb. 6, 1912.

Application filed March 6, 1911. Serial No. 612,508.

To all whom it may concern:

Be it known that I, LESLIE UNCKLESS, of Eastwood, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Ball-Cocks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in ball cocks for flush tanks and similar reservoirs in which it is desired to automatically regulate the supply of water thereto. These valves are generally located in the bottom of the tank or reservoir where they are not easily accessible and are submerged the greater part of the time in water and require more or less frequent repairing.

As usually constructed it is very difficult to disconnect the parts for repacking of the valve or other slight repairs without removing the entire valve from the tank, and one of the main objects of my invention is to enable the valve proper and all or any of its connections with the ball float to be easily and quickly removed for repairs or replacing a new valve when necessary without disturbing the valve case or any of its connections with the supply pipe and tank.

Another object is to reduce the number of parts of the valve and to enable such parts to be more economically assembled than has heretofore been practiced.

Other objects and uses will be brought out in the following description.

In the drawings—Figure 1 is a top plan of the ball cock embodying the various features of my invention, a portion of the ball float being also shown. Figs. 2 and 3 are vertical sectional views of the same valve taken at right angles to each other except that in Fig. 3 the plunger valve is shown in elevation.

This valve is connected to the water supply pipe —1— which is adapted to be secured in the usual manner by lock nuts —2— and —3— and packings —4— to the bottom of the flush tank or reservoir not shown, said supply pipe being provided at its upper end with a valve seat —5—. This ball cock or valve comprises a casing —6— having a threaded inlet —7— screwed upon the upper end of the supply pipe —1— and a lateral offset —8— having an outlet —9— in its under side adapted to discharge into the reservoir, said valve casing being also provided with an additional outlet pipe —10— adapted to discharge into the overflow pipe of the flush valve in the usual manner, not necessary to herein illustrate or describe although in some instances this extra pipe —10— may be omitted. The valve casing —6— is also provided with a cylindrical opening —11— above and coaxial with the valve seat —5— for receiving and guiding a plunger valve —12— having a removable section —13— screwed therein. The lower end of the section —13— is provided with a socket in which is located a packing —14— for direct engagement with the valve seat —5—. An additional cup packing —15— is interposed between the section —13— and plunger —12— to form a water tight joint and prevent the passage of water outwardly from the opening —11—. This plunger —12— extends some distance above the valve casing —6— and is provided with an outwardly projecting annular flange —16— and slotted extension —17—, the flange —16— serving to detect downwardly any water which may escape from the opening —11— in case of any imperfections in the packing —15—, while the slotted extension —17— serves to receive a portion of the plunger operating lever —18— and for this purpose is provided with a transverse slot —19— of just sufficient size to permit the free action of the lever —18— therein.

The valve casing —6— is provided at diametrically opposite sides of the plunger —12— with upwardly projecting slotted extension —20— and —21—, the extension —20— being provided with a fulcrum pin —22— extending across the slot for receiving and supporting the adjacent end of the lever —18— while the opposite slotted extension —21— is somewhat longer vertically and forms a guide for the adjacent portion of said lever to hold the latter against lateral displacement. The lever —18— therefore extends through and beyond the opposite sides of the slotted extension —17— and also through the slotted extensions —20— and —21— of the casing —6—, one end of said lever being furcated or provided with an open sided slot or bearing —23— for engagement with the pin —22— whereby the lever may be easily and quickly detached from said pin without disturbing

either the pin or the plunger or valve casing. The opposite end of this lever is provided with an outwardly extending offset or arm —24— to which is pivoted at —25—, a ball lever —26—, the latter being fulcrumed at —27— upon the upper end of the slotted extension —21— directly over the plunger —12— and portion of the lever —18— which extends through said plunger.

The fulcrum —27— for the lever —26— preferably consists of a screw passing through registered apertures in the slotted extension —21— and lever —26— and is tapped or screwed in one side of said extension so that it may be readily removed when necessary.

The free end of the lever —26— is provided with a threaded socket in which is screwed a rod —28— carrying a float or ball —29—, the rod —28— being held against turning by a set screw —30—.

It will be seen from the foregoing description that the levers —26— and —18— may be readily withdrawn by simply removing a single fulcrum screw —27—, thus permitting the lever —18— to be withdrawn endwise or to the left of Fig. 2 out of engagement with the fulcrum pin —22— and through the slotted extension —17—, also permitting the valve or plunger —12— to be removed for repairs if necessary or replaced by a new one as may be required.

The pipe —10— is screwed into the main body of the valve case and unless properly supported is more or less liable to break off or strip the threads by accidental contact with some object and in order to obviate this objectionable result, it is additionally held in place by a superposed bracket —40— having an aperture therein through which the pipe is inserted when being screwed into the valve case, said bracket being spaced apart some distance from the threaded connection of the pipe with the main body of the case so as to relieve the threads from undue strain.

What I claim is:

1. A ball cock comprising a valve-case having an inlet and an outlet, a valve for the inlet, arms projecting upwardly unequal distances from the valve-case at opposite sides of the valve, a fulcrum-pin on the shorter arm, a float lever fulcrumed intermediate its ends on the long arm and extending over the valve toward the short arm, and an additional lever having one end provided with an open-sided bearing engaging said fulcrum-pin and its other end provided with an upwardly projecting offset rigid therewith and pivoted to the adjacent end of the float lever, the intermediate portion of said additional lever being operatively connected to the valve.

2. A ball cock comprising a valve-case having an inlet and an outlet and also provided with a cylindrical valve-opening coaxial with the inlet and extending through the upper side of the casing, a valve in said opening having a transverse slot, arms of unequal length projecting upwardly from said casing at opposite sides of the valve, a fulcrum pin on the shorter arm, a lever passed loosely through and engaging the lower and upper walls of the slot and having one end furcated and engaged with the fulcrum pin and its other end extended beyond the longer arm and provided with an upwardly projecting offset rigid therewith, and a float lever fulcrumed on the longer arm and pivoted to said offset.

3. A ball cock comprising a valve-case, a valve movable therein, bearing pins on the casing at opposite sides of the valve, and levers fulcrumed on said pins and pivoted directly to each other, one of said levers having an open-ended slot receiving its bearing pin.

In witness whereof I have hereunto set my hand on this 25th day of February, 1911.

LESLIE UNCKLESS.

Witnesses:
H. E. CHASE,
E. F. SPEARING.