Dec. 1, 1925. 1,563,457

J. VAN DYKE

TANK OR BALL VALVE

Filed March 27, 1922

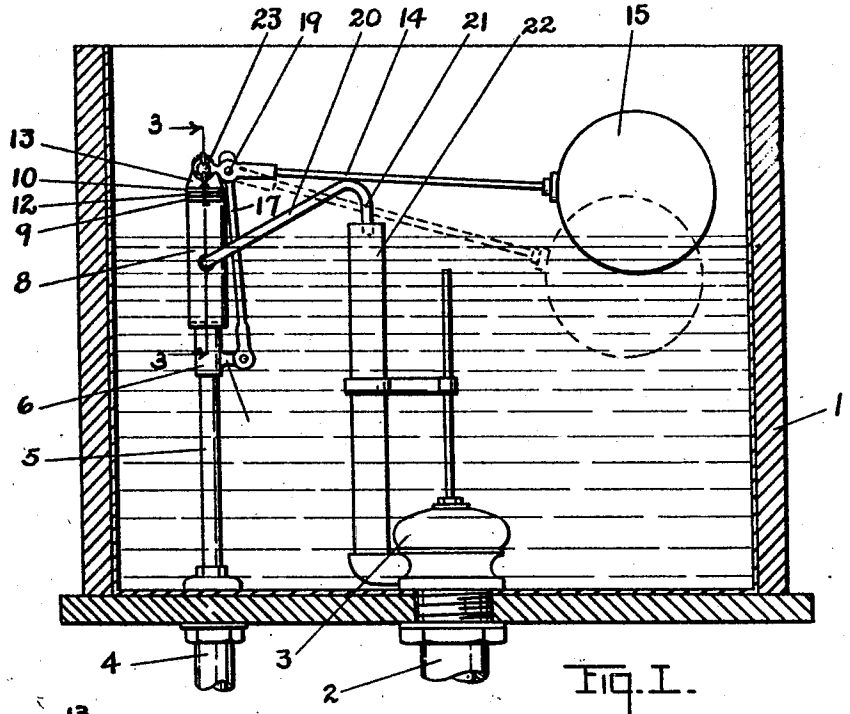


Fig. I.

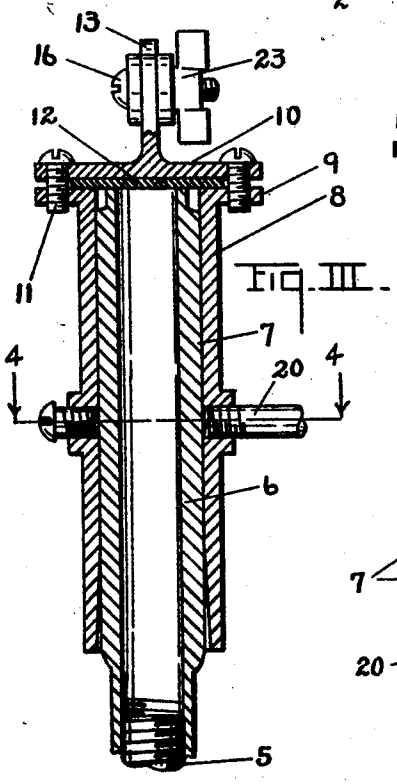


Fig. III.

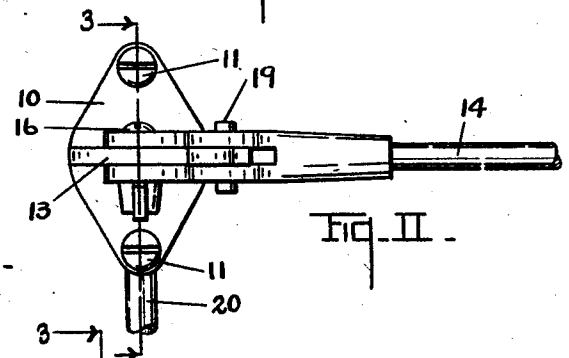


Fig. II.

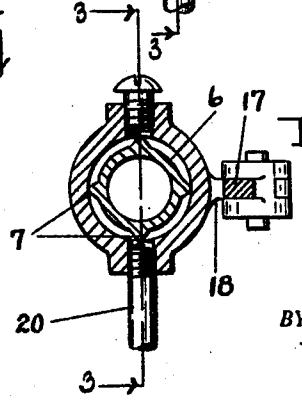


Fig. IV.

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UNITED STATES PATENT OFFICE.

JOHN VAN DYKE, OF KALAMAZOO, MICHIGAN.

TANK OR BALL VALVE.

Application filed March 27, 1922. Serial No. 546,949.

To all whom it may concern:

Be it known that I, JOHN VAN DYKE, a citizen of the United States, residing at the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Tank or Ball Valves, of which the following is a specification.

This invention relates to improvements in tank or ball valves.

The main objects of this invention are:

First, to provide an improved tank or ball valve which is very simple in its parts and not likely to become clogged or inoperative in use, although permitted to stand for considerable periods of time without operation.

Second, to provide an improved tank inlet valve which is of large capacity, that is, one which permits the passage of considerable quantities of water.

Third, to provide an improved valve of the class described in which the parts subjected to wear or deterioration may be readily removed as occasion requires, substantially a flat disk of suitable size of rubber, leather or fabric composition being suitable for the purpose of replacement.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claim.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. I is a vertical section through a flushing tank equipped with my improved ball cock or valve.

Fig. II is a plan view of my improved valve, the float arm and the re-fill pipe or tube being partially broken away.

Fig. III is a detail view mainly in vertical section on a line corresponding to line 3—3 of Figs. II and IV.

Fig. IV is a horizontal section on a line corresponding to line 4—4 of Fig. III.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawings, 1 represents a water closet flushing tank and 2 the discharge pipe thereof controlled by the valve 3. Means for operating this valve 3 are not illustrated. The supply pipe 4 is provided with an extension 5 projecting upwardly within the tank. The body 6 of my improved valve is tubular and is threaded upon the pipe 5, it being provided with longitudinal guide ribs 7. The valve member 8 is also tubular and is sleeved upon or slidably mounted on the body member sliding upon the ribs 7 and held in proper centered relation thereby. The valve member 8 is provided with an outwardly projecting flange 9 at its upper end, the valve member cap piece 10 being secured to this flange 9 by means of the screws 11. The edges of the valve disk 12 leather, rubber or suitable composition are clamped between the cap piece and the flanges, so that the valve disk seats upon the upper end of the body member 6.

The cap piece is provided with a centrally disposed upwardly projecting pivot lug or ear 13 to which the arm 14 of the float 15 is connected by the pivot 16. The supporting or fulcrum link 17 is mounted on an arm 18 projecting at the bottom of the body member,—see Fig. I. The arm 14 is pivoted to the upper end of this link at 19. A re-fill tube 20 having a bent end 21 adapted to discharge to the overflow pipe 22 is mounted on the valve member and opens into the same, so that when the water is discharging through the valve under pressure a portion of the water is discharged through this re-fill pipe and through the overflow pipe to fill the trap.

My improved valve is of large capacity in that a comparatively small movement of the valve provides a large portage, the water being discharged over the upper end of the body member 6 and downwardly around the same out of the lower end of the valve. This has the further advantage of preventing spattering of the water and also the escaping water makes comparatively little noise. The parts are not only few in number but are simple and economical in structure and easily assembled or disassembled should occasion require for the purpose of renewing the disk valve which, however, is subject to little wear.

A further advantage is that the valve is not likely to become inoperative through corroding even though long periods of time

elapse between its operation and, in the event it is desired to disassemble or remove the valve, it is only necessary to remove the pivot 16 and the valve may be lifted off the body 6. The thumb nut 23 is provided to facilitate the assembling and disassembling.

I have illustrated and described my improvements in an embodiment which I find very practical. I have not attempted to illustrate or describe certain modifications and adaptations to different types of tanks as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

The combination of a tubular valve body member adapted for mounting on a pipe and having external longitudinal guide ribs, a tubular valve member slidable upon said body member and having an outwardly projecting flange at its upper end, a valve member cap piece removably secured to said flange, a valve disk disposed with its edge between said cap piece and flange and adapted to seat upon the top of said body member, a pivot lug disposed centrally of said cap piece, a float arm pivoted to said lug, a supporting link pivotally mounted at the lower end of said valve body member and pivotally connected to said float arm, and a re-fill tube carried by and opening into said valve member.

In witness whereof, I have hereunto set my hand and seal.

JOHN VAN DYKE. [L. S.]