F. W. BASSETT & W. A. HUNTER, JR.

FLUSHING VALVE.

APPLICATION FILED JUNE 28, 1909.

957,029.

Patented May 3, 1910.

FIG. 1

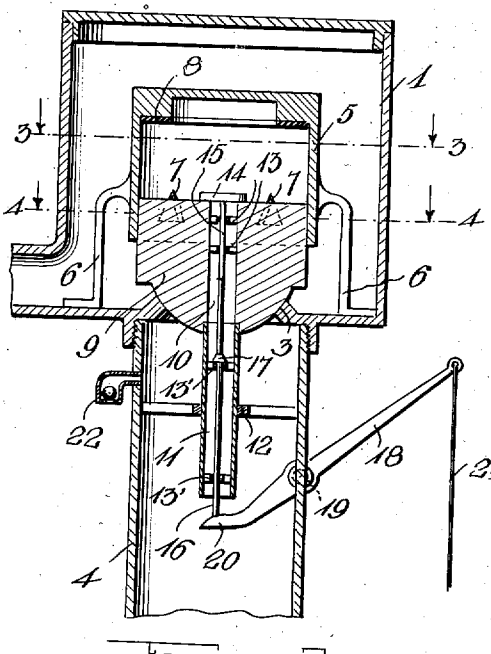


FIG. 3

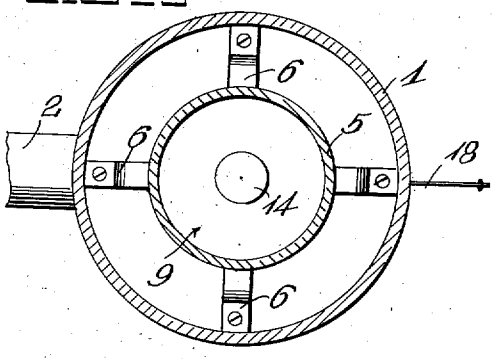


FIG. 4

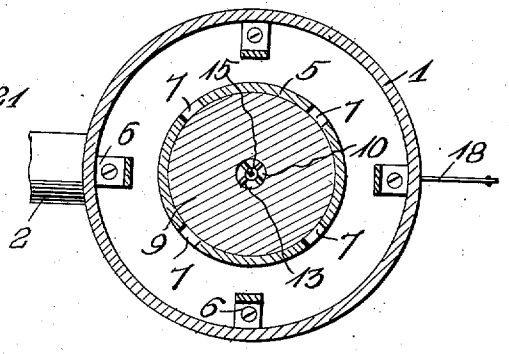


FIG. 2

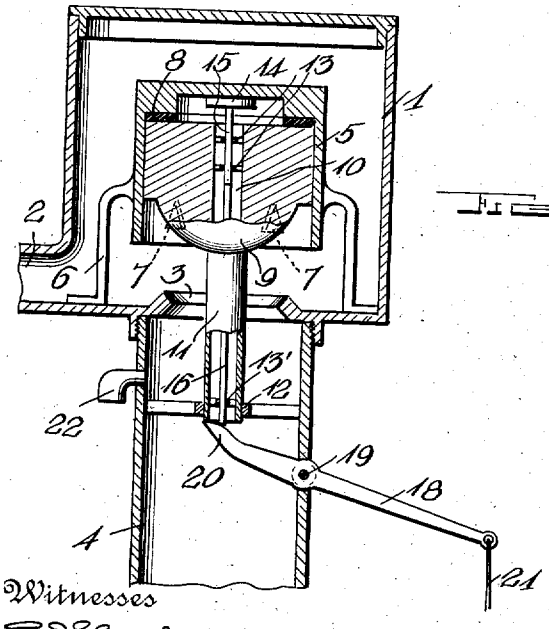
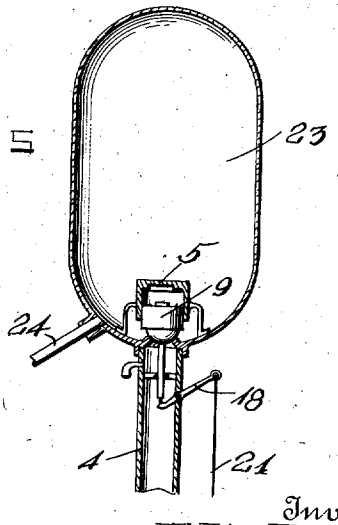


FIG. 5



Witnesses

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UNITED STATES PATENT OFFICE.

FOSTER W. BASSETT AND WILLIAM A. HUNTER, JR., OF LOS ANGELES, CALIFORNIA.

FLUSHING-VALVE.

957,029. Specification of Letters Patent. Patented May 3, 1910.

Application filed June 28, 1909. Serial No. 504,792.

To all whom it may concern:

Be it known that we, FOSTER W. BASSETT and WILLIAM A. HUNTER, Jr., citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Flushing-Valves; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates the construction of a flushing valve provided with means for controlling the flow of the flushing water arranged to be located at a point distant from the supply tank and near to the eduction point.

One of the objects of the invention is the production of a flushing valve capable of being operated from a point distant from the supply tank, comprising a chambered casing having a main valve and an auxiliary valve, the main valve being partially controlled by water pressure.

Another object of the invention is the production of a flushing valve comprising means for controlling the admission of air into the flushing pipe in such a manner that the action of the valves will be rendered positive.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be described and particularly pointed out in the appended claim, and in the drawings, in which,

Figure 1 is a vertical sectional view of our improved valve mechanism, showing the main valve and the auxiliary valve positioned on their seats; Fig. 2 is a vertical sectional view showing the main valve and the auxiliary valve raised from their seats; Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1; Fig. 4 is a similar view taken on the line 4—4 of Fig. 1; and Fig. 5 is a vertical sectional view of a modification.

Corresponding and like parts are referred to in the following description and in all of the views of the drawings by the same reference characters.

In the drawings 1 denotes a main casing having connections at 2 to a distant supply tank. The main casing 1 is formed with a valve seat, 3, on a bottom section, and a flushing pipe, 4, is connected to said bottom sections so as to surround the valve seat. A second casing, 5, is supported in the casing, 1, on legs, 6, which rest upon the bottom section of the main casing, 1. The casing, 5, is formed with a plurality of lateral ports, 7, which are V-shaped, with their narrow portions facing upwardly and the upper portion of the valve casing, 5, is provided with a washer, 8, which is positioned against the inner sides of the casing and at a short distance from the inner side of the casing top.

A valve, 9, formed with a semi-spherical bottom portion is adapted to move upwardly in the casing, 5, and is normally seated on the valve seat, 3. Normally the valve, 9, closes the major portion of the ports, 7, and said valve is formed with an opening, 10, which communicates with a tubular member 11. The member 11 extends from the lower portion of the valve, 9, downwardly through the flushing pipe, 4, to a point considerably below the valve seat, 3, and is adapted to move upwardly with the valve, 9, and for this purpose is guided by a spider, 12, which is positioned against the inner side of the flushing pipe, 4. The member 11 is provided with a plurality of spiders, 13′, which are spaced apart and interiorly positioned on said member.

A valve 14 having a stem 15 is adapted to be seated on the upper portions of the valve 9, and the stem 15 is arranged to extend downwardly through the valve 9 and the spiders 13′ therein. An operating rod 16 having a shoulder 17 formed thereon, extends upwardly through the tubular member 11 and is adapted to engage the lower end of the valve stem 15 and is guided by the spiders 13′. The rod 16 and the tubular member 11 are engaged by an operating lever 18 which extends through an opening formed in the flushing pipe 4, and is pivoted thereto as at 19. The inner end is bent as at 20 in order to properly engage the lower end of the tube 11 and the operating rod 16. This lever 18 is operated by a suitable rod 21. An annular snifting valve 22 is mounted on the flushing pipe 4 at a point immediately below the valve seat 3 and the opening of said valve preferably faces downwardly.

Normally the flushing water fills the interior of casing, 5, and casing, 1, so that the pressure in both casings will be substantially equal. When it is desired to open the

valves, the lever, 18, is depressed on its outer end, thereby raising the valve, 14, from its seat on the top of valve, 9, and allowing the water contained within the casing 5 to flow through the tubular member, 11, downwardly into the flushing pipe, 4. As the operating lever, 18, is still further depressed, the tubular member 11 carrying the valve 9 will be moved upwardly in the casing 5, temporarily closing the ports, 7, and opening communication between the casing 1 and the flushing pipe, 4, and as the valve, 9, is thus moved off its seat, the flow of water through the bottom opening in the casing 1 will tend to lift the valve away from its seat and bring the top thereof in contact with the washer, 8, and thereby open the ports, 7. This lifting of the valve 9 will operate to thoroughly cleanse the ports 7 from any sediment that may have accumulated therein. When the water from the supply tank has passed through the flushing pipe, the valve 9 will gradually fall to its seat and the valve, 14, will fall to its seat, while the snifting-valve, 22, will open upwardly so as to allow air to fill the flushing pipe, 4, thereby preventing any lifting or jarring of the valve 9 from or on its seat. This arrangement assures a water-tight connection between the valve, 9, and its seat and prevents any water from flowing through the flushing pipe 4 when the same is normally seated. When the valve 9 normally rests on its seat, the pressure of the water will tend to hold the same thereagainst. The opening in the flushing pipe, 4, through which the operating lever, 18, extends may be closed by any suitable device adapted for this purpose.

In Fig. 5 we have illustrated a modification of our valve mechanism comprising a suitable tank, 23, which is mounted on the flushing pipe and extends above the valve mechanism which it incloses. The tank, 23, is provided with connections, 24, communicating with the main water supply.

Having thus described our invention, what we claim as new and desire to secure by Letters-Patent, is:

A flushing valve mechanism comprising a main flushing pipe, an outer valve casing communicating with said pipe, an inner casing supported in the outer casing and communicating therewith, said inner casing having triangular openings therein, a valve formed with a semi-spherical seat portion movable in the inner casing and adapted when seated to close the broad end of said triangular openings, a second valve movable in the first mentioned valve, a conduit extending through the first mentioned valve and arranged to be closed by the second valve, a snifting valve for controlling the admission of air to the flushing pipe, and means to operate said first and second valves one after the other, the second valve being operated first and the first valve being operated last to permit communication between the conduit and pipe and to completely uncover the said triangular openings.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FOSTER W. BASSETT.
WILLIAM A. HUNTER, Jr.

Witnesses:
M. M. Meyers,
L. Woodling Whitney.