

W. N. LONG.
 FLOAT VALVE FOR FLUSHING TANKS.
 APPLICATION FILED FEB. 20, 1908.

912,009.

Patented Feb. 9, 1909.

Fig. 1

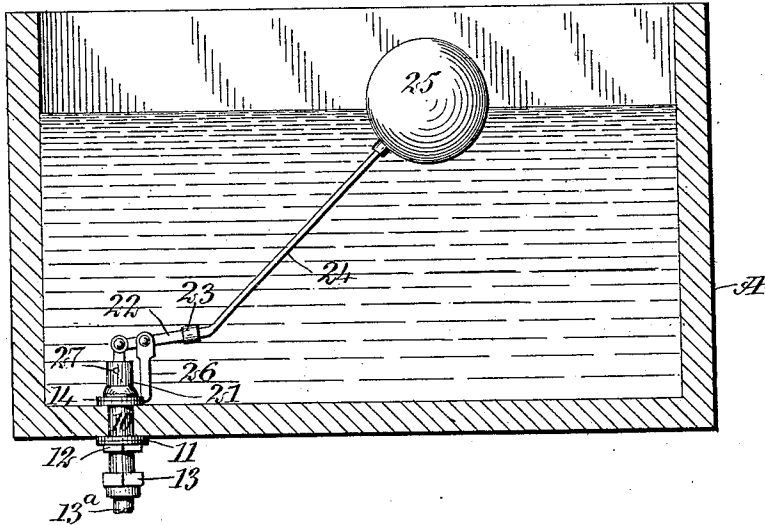


Fig. 2

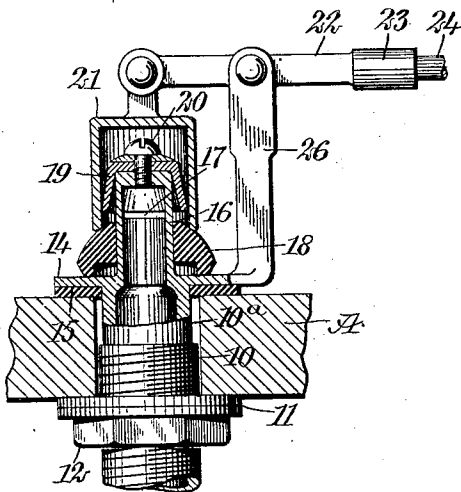
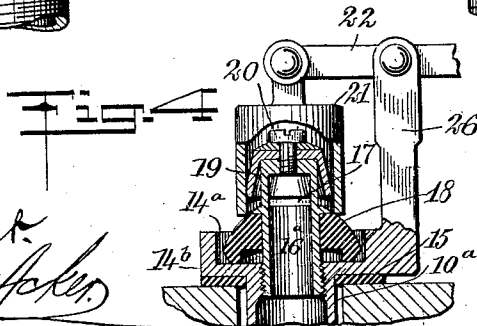
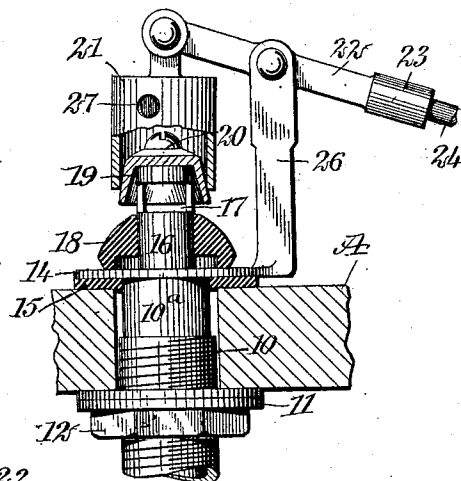


Fig. 3



WITNESSES

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FLOAT-VALVE FOR FLUSHING-TANKS.

No. 912,009.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed February 20, 1908. Serial No. 416,875.

To all whom it may concern:

Be it known that I, WILLIAM N. LONG, a citizen of the United States, and a resident of Eugene, in the county of Lane and State of Oregon, have invented a new and useful Improvement in Float-Valves for Flushing-Tanks, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a float valve for water-closet flushing tanks, that will be effective in operation and very simple in construction.

It is a further purpose of the invention to provide a very quick acting valve, and one that when opened will direct the water to the bottom of the tank, and which when closed will be perfectly concealed, the operation of opening and closing the valve being automatic.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a section through a tank and a side elevation of the improved valve installed therein; Fig. 2 is a vertical section through the valve and a side elevation of an accompanying supply pipe, illustrating the valve closed. Fig. 3 is a sectional side elevation of the valve in open position, and Fig. 4 is a vertical section showing a modified construction in which the gasket is partially inclosed.

A represents a flushing tank of the customary construction. A pipe 10 is introduced into the bottom of the tank A, being screwed therein or fitted to place in any suitable or approved manner, and this pipe 10 is provided with one or more washers 11 that bear against the bottom of the tank, being held in position by a nut 12, and a union 13 is illustrated in Fig. 1, that connects the fitting or shorter pipe 10 to a pipe 13^a that supplies water to said pipe 10. A valve is fitted into the upper portion of the shorter pipe 10, and the lower portion 10^a of this valve is shown introduced into the said pipe 10 and is secured thereto in a water-tight manner, and the body or lower portion 10^a of the valve is provided with a flange 14, that is located

above the upper face of the bottom of the flushing tank A, and rests upon a suitable washer 15, as is shown in Figs. 2 and 3: The upper portion 16 of the valve, or that portion that extends beyond the flange 14, is reduced in diameter and may be of any suitable length, and is provided with an opening 17 through which the water escapes into the said flushing tank. This opening 17 may be made in any suitable or approved manner, and just below the opening 17 in the upper portion of the valve, a washer or gasket 18 is made to surround the said upper portion 16, and to bear upon the flange 14, and this washer or gasket 18 is of conical formation and is adapted to act as a seat for the closing member of the valve to be hereinafter referred to. A conical member 19, constructed of rubber or leather, is secured to the upper portion of the valve by means of a screw 20 or its equivalent, and this conical member 19 is made to flare outwardly and downwardly to a greater or less extent, and terminates at its lower end at the upper portion of the opening 17 in the upper section of the said valve, as is illustrated in Figs. 2 and 3. A regulating or controlling cap 21 is used in connection with the upper portion of the valve. This regulating or controlling cap 21 is of metal and is closed at its top and is open at its lower end, and in the closed position of the valve shown in Fig. 2, the said cap 21 at its lower edge rests snugly and tightly upon the rubber gasket 18 surrounding the upper portion 16 of the valve. A lever 22 is attached to the upper portion of the cap 21 in any suitable or approved manner, and this lever 22 is provided with a socket 23, in which socket the stem 24 of the float valve 25 is fitted in any suitable or approved manner. This lever 22 is fulcrumed upon an arm 26 that extends up from the flange 14, forming a portion of the body of the valve, as is clearly shown in Figs. 2 and 3. The regulating or controlling cap 21 is provided with an opening 27 that permits the outward passage of air or any water that may be contained therein, and therefore enables the said cap 21 to operate with accuracy and with despatch.

In the form shown in Fig. 4 the parts 15, 18, 19, 20, 21, 22, 26 have the same construction as described in relation to the other figures. The gasket 18, however, is seated in a depression 14^a in the flange 14^b. The tube 16^a corresponding to the upper portion 16 of

the valve, as shown in the other figures, is threaded at its lower end and screwed into the flange 14^b, which is threaded for the purpose of receiving it. By this arrangement
5 the tube 16^a is rendered detachable.

In the operation of this valve, when the water is drawn off in the customary way from the flushing tank A, the volume that passes out is greatly in excess of the water
10 that enters the tank through the valve 10^a. Consequently, as the level of the water in the tank A is lowered, the float 25 descends and the cap 21 is proportionately raised, permitting the water from the inlet pipe 13^a to gain
15 access to the said tank A, and as the water enters the tank it is directed downward toward its bottom by the conical member 19, and the entrance of the water to the tank is thus rendered more or less noiseless. When
20 sufficient water has been received in the tank to carry the float 25 to its upper position, the regulating or controlling cap 21 is carried down to its seat on the rubber gasket 18 and the supply of water to the tank is conse-
25 quently cut off.

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

1. In a valve for flushing tanks, a valve
30 having an enlarged inlet and a small outlet, the outlet being located near the upper portion of the valve, which upper portion is closed, a conical outwardly flaring member secured to the upper portion of the valve
35 extending down to the outlet thereof, a conical gasket located on the said valve below its outlet, and a float-controlled regulating cap operating over the upper portion of the said valve and its conical member,
40 which cap is adapted to be seated upon the aforesaid conical gasket.

2. In a valve for flushing tanks, the combination with a body portion larger at its lower end than at its upper end, said body
45 portion of the valve being closed at its upper end and provided with an outlet opening adjacent to said upper end, a member constructed of flexible material and secured to the upper end portion of the valve, and extending down to a point adjacent to the
50 upper portion of the outlet of the valve, an elastic gasket of conical formation located around the body portion of the valve at a point adjacent to and below the lower edge
55 of the outlet of the valve, a bracket, a lever carried thereby, a float connected with the said lever, and a cap pivotally connected with the said lever and having a movement

around the outlet portion of the valve to and from the aforesaid conical gasket.

3. In a valve, the combination of a member provided with an opening for discharging a liquid, a valve seat encircling said member, a controlling cap movable relatively to said seat and adapted to engage the same for the
60 purpose of stopping the flow of liquid through said opening, float-controlled mechanism connected with said controlling cap for the purpose of moving the same relatively to said seat, and mechanism connected with said
65 controlling cap and with said first-mentioned member for the purpose of rendering noiseless the flow of said liquid through said opening.

4. The combination of a valve seat, a stationary valve member movable relatively to said valve seat and adapted to engage the same for the purpose of checking the flow of liquid therethrough, said stationary valve member being provided with an opening,
80 means for actuating said valve member relatively to said valve seat, and mechanism disposed adjacent to said valve seat and to said valve member for the purpose of dead-
85 ening the sound of liquid passing through said opening.

5. The combination of a valve seat, a valve member having generally the form of a cap for engaging said seat, said valve member being provided with an opening, means
90 for moving said valve member toward and from said seat, and a conical member mounted adjacent to said seat and so disposed as to cover said opening, said conical member being of flexible material and disposed partially within the path of travel of said valve member.

6. The combination of a tubular member provided with an opening through which a liquid may be discharged, a gasket encircling said tubular member and serving as a
100 valve seat, a cap movable relatively to said valve seat for controlling the flow of a liquid through said opening, and a conical member of resilient material disposed adjacent to
105 said opening and partially covering the latter, said conical member being disposed partially within the path of travel of said controlling cap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM N. LONG.

Witnesses:

C. A. WINTERMEIER,
C. W. BELL.