J. RUHL.

CLOSET VALVE.

APPLICATION FILED JULY 15, 1908.

910,958. Patented Jan. 26, 1909.

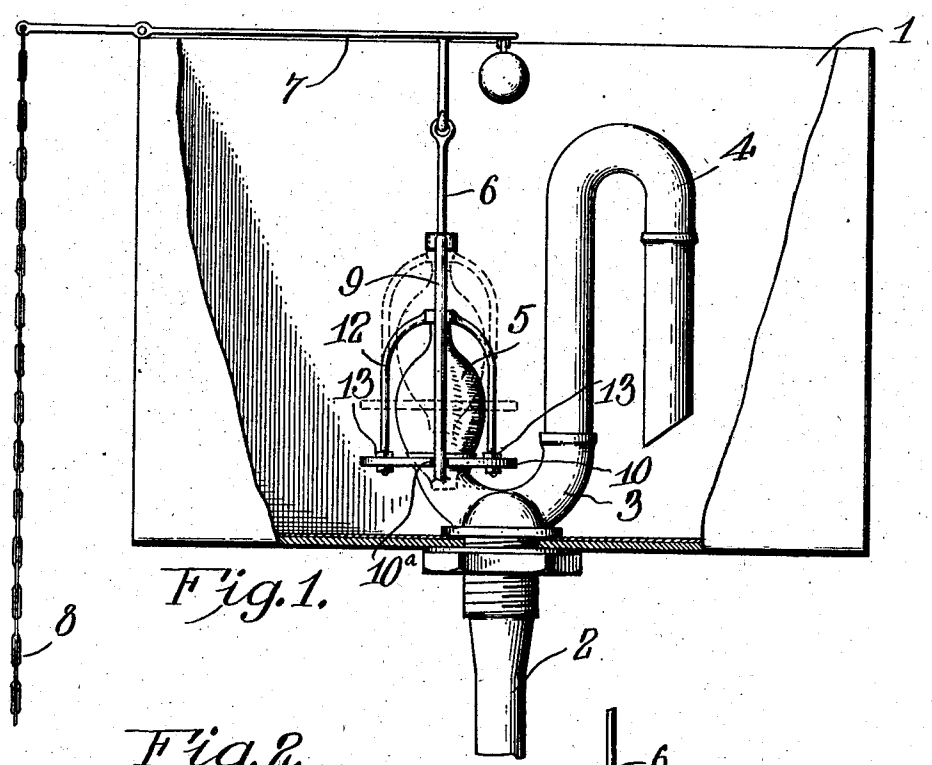


Fig. 1.

Fig. 2.

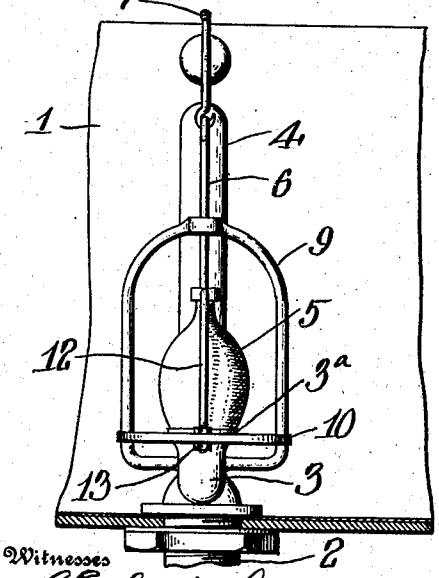
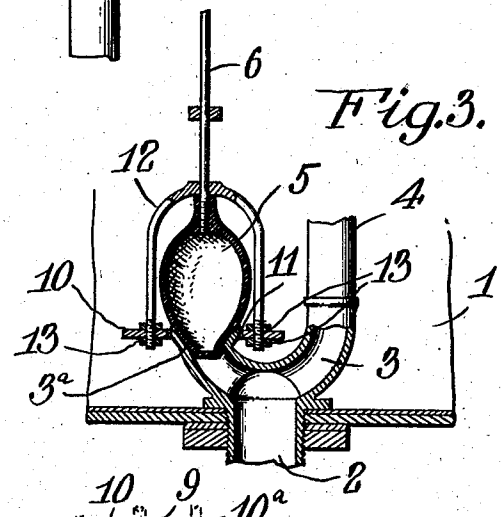


Fig. 3.



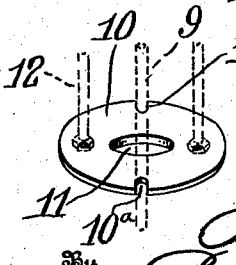


Fig. 4.

Witnesses

C. E. Smith.

S. E. Dodge.

Inventor

J. Ruhl,

By Beeler & Cobb

Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH RUHL, OF NEW ROCHELLE, NEW YORK.

CLOSET-VALVE.

No. 910,958. Specification of Letters Patent. Patented Jan. 26, 1909.

Application filed July 15, 1908. Serial No. 443,701.

To all whom it may concern:

Be it known that I, JOSEPH RUHL, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Closet-Valves, of which the following is a specification.

The object of this invention is to provide an extremely simple and serviceable form of flush valve for use particularly in the tank or cistern commonly employed to hold a quantity of water for flushing closet bowls. The majority of valves of this type at present in use involve the employment of washers and are somewhat complicated in structure so that they readily get out of order, or permit leakage of the water from the flush tank.

The present invention aims to eliminate the disadvantages of the common forms of flush tank valves.

For a full understanding of the present invention, and the merits and advantages thereof, reference is to be had to the following detail description, and to the accompanying drawings, in which:

Figure 1 is a view showing the invention applied, dotted lines showing the movement of the valve; Fig. 2 is an elevation of the valve mechanism looking in a different direction from that shown in Fig. 1; Fig. 3 is a vertical sectional view bringing out more clearly the form of the valve; and Fig. 4 is a detail perspective view of the guide plate of the valve.

Similar reference characters refer to similar parts throughout the drawing and description.

In the drawings the numeral 1 denotes the flush tank or cistern with the bottom of which is connected the usual pipe 2 leading to the closet bowl. The pipe 2 is suitably secured to the tank 1, and connected with the upper end of the pipe 2 is a U-coupling or branch pipe 3. With one branch of the pipe 3 a goose neck 4 is connected in the customary way. The upper end of the other branch of the coupling 3 is flared to form a valve seat 3^a upon which a bulb valve 5 is adapted to be seated. The valve 5 is preferably hollow and made of resilient substance such as rubber so that it will conform readily to the shape of and fit snugly at its lower end in the valve seat 3^a when the valve is closed. Connected with the upper end of the valve 5 is a lift rod 6 which in turn is connected with a suitable operating lever 7 adapted to be actuated by a chain 8, or the valve 5 may be raised and lowered with respect to its valve seat by any suitable means desired. Rigidly attached to the upper end of the coupling 3 just below the valve seat 3^a thereof is a guide yoke 9 provided in its upper end with an opening through which the rod 6 passes, and mounted for vertical movement in the space between the sides of the yoke 9 is a circular guide plate 10. The plate 10 is provided with a central opening 11 permitting said plate to pass below the upper portion of the coupling 3 formed with the valve seat 3^a.

Notches are provided in the opposite edge portions of the plate 10, as shown at 10^a, and these notches receive the sides of the yoke 9 and guide the plate 10 in its vertical movement with the valve 5. The plate 10 is secured to the lift rod 6 by means of a lifting yoke 12, the lower ends of which are secured to the plate by detachable fastenings, such as nuts 13. Any suitable means may be employed to attach the lifting yoke 12 to the rod 6, and it will be apparent that the movement of the valve 5 upwardly is limited by engagement of the yoke 12 with the guide yoke 9 before described. The parts connected with the valve are so arranged that accurate seating of the valve is obtained in the operation thereof, the yoke 12 and plate 10 not only serving as advantageous guide means for effecting proper vertical movement of the valve, but also constituting weight means adapted to exert a downward force sufficient to cause the valve to enter and fit closely against its seat 3^a, the plate 10 assuming a position below the seat 3^a when the valve is at the lower limit of its movement.

It will be obvious that the present invention is readily adapted to be used in various ways and places where it is required to employ an absolutely tight and reliable working valve.

Having thus described the invention, what is claimed as new, is:

In a closet valve, the combination of a pipe element provided at its upper end with a valve seat, a guide yoke the opposite sides of which are secured rigidly to said pipe, a bulb valve arranged to open and close with respect to said seat, a lift rod attached to the valve

and passing through the guide yoke at the upper end of the latter, a lifting yoke having its middle portion connected with the lift rod and the sides of which are arranged at opposite sides of the valve, and a guide plate having a central opening for the valve and surrounding the upper end of said pipe when the valve is closed, said plate having notches in its opposite edges receiving the sides of the guide yoke therein.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH RUHL.

Witnesses:
WILLIAM J. MCDONNELL,
I. FRANK FELLEMAN.