Feb. 6, 1934. N. BECKER 1,946,267

FLOAT TANK BULB

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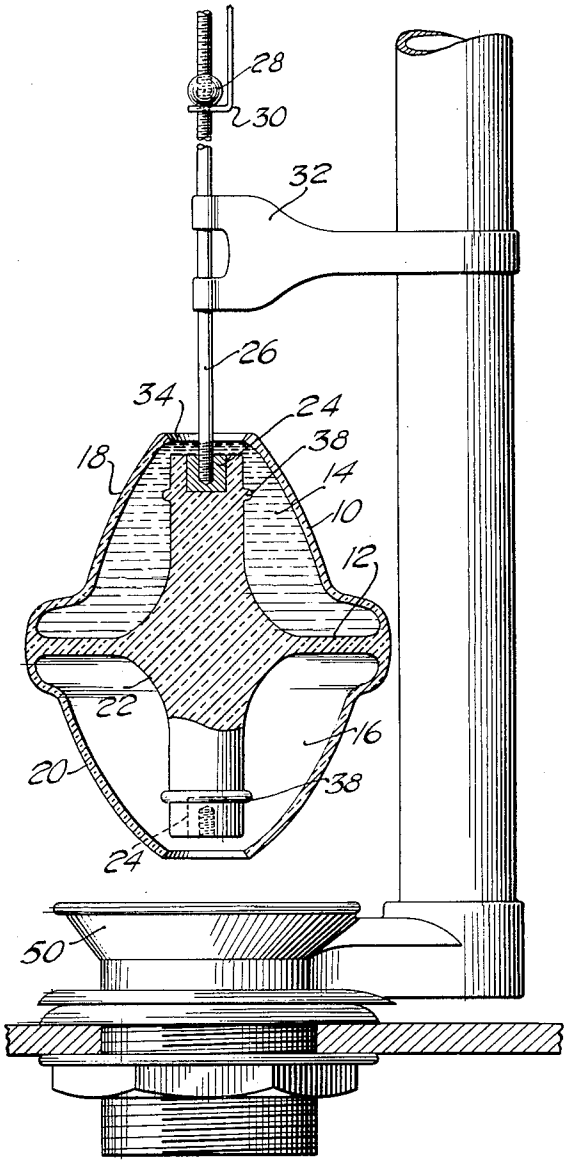
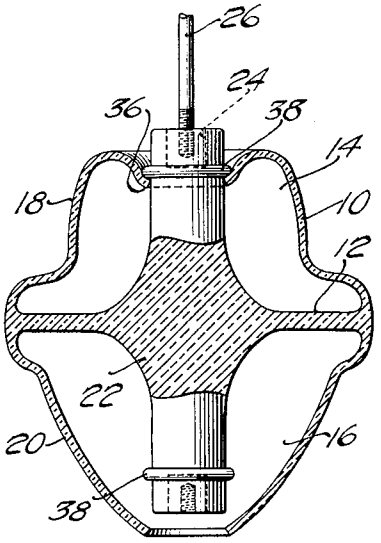


FIG. 1.

FIG. 2.



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FLOAT TANK BULB

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10 Claims. (Cl. 4—57)

My invention relates to valvular means for controlling the flow of water in float tanks, and constitutes an improvement on the invention disclosed and claimed in my co-pending application Serial No. 564,522, filed September 23rd, 1931, entitled "Float tank ball".

It is an object of the present invention to provide a device of the character specified which is adaptable for use under various conditions of rate of water flow and water pressure.

The ordinary and usual method of closing the outlet orifice or valve seat in a flushing tank is by means of a valve of fixed size and weight. Such a valve, while suitable for one installation, where a certain rate of water flow or water pressure prevails, would be less efficient in its action in a tank subject to different rate of water flow and a different water pressure.

In the accompanying drawing

Figure 1 is a side elevation of a flush tank valve, including seat, bulb in elevated position, and operating rod and guide, with the bulb shown in section; and

Fig. 2 is a central vertical section showing the valve adjusted for conditions of fairly high pressure and rapid water flow.

The bulb, as such, is a unitary integrally formed structure, made preferably of a soft and flexible material, rubber for example. The bulb 10 is divided by partition or septum 12, forming the two chambers 14 and 16, the walls 18 and 20 of which act as valve seat engaging portions. Septum 12 has integral bosses 22 formed on opposite sides thereof, each boss having embedded therein the interiorly threaded metal portion 24, adapted to engage rod 26, said rod having ball 28 threaded thereon engaged by hook member 30, serving to raise the bulb when actuated by the usual means, and to permit the said bulb to drop down on and close the valve seat when the ball 28 is released.

When the bulb 10 is immersed in the water filling the closet, the pressure of the air in the seat engaging portion 20 serves to keep the water therefrom. The opening 34 in the upper end of the bulb allows the water to enter into chamber 14. The added weight of the water aids the bulb in its action when the water flow is slow, the bulb closing the outlet with reasonable despatch, so that the water tank quickly refills, ready for the next bowl flushing operation. In cases, however, where the water flow is more rapid, the quantity of water in chamber 14 can be controlled to render the bulb lighter, so as not to interfere with efficient bowl flushing. In some installations, the water flow may be so rapid as to make it desirable to keep the weight of the bulb at a minimum, with no added weight of water.

This is accomplished in the following manner: Mouth 36 of opening 34 is tucked in under the rib or bead 38 formed on the boss 22 near its end, to provide an air and water tight closure. The pressure of the air retained in the chamber 14, by this closure, will be sufficient to keep water out.

As above stated, it may be desirable to increase the weight of the bulb to some extent, and after what the weight should be is determined by a process of experiment, the exact amount of water in the chamber 14 required to give the required weight, is retained therein substantially without variation by tucking the mouth 36 of the opening 34 in under the collar or rib 38.

My invention may be embodied in various forms of bulbs, such as in the reversible type shown, or in the type having but one seat engaging portion, and others.

I claim:

1. A float tank bulb comprising a septum, flexible wall portions above and below said septum, a boss disposed within said bulb, and openings in certain of said wall portions adapted to receive said boss to be closed thereby.

2. A float tank bulb comprising a septum, oppositely disposed hollow seat engaging portions, and means for varying the water receiving capacity of certain of said portions.

3. A float tank bulb comprising a septum, oppositely disposed hollow seat engaging portions, openings in said seating portions remote from said septum, and means on said septum for closing said openings.

4. A float tank bulb comprising a septum, a boss thereon, a bead on said boss, oppositely disposed seating portions having openings remote from said septum, certain of said openings being adapted to engage said bead to close the opening.

5. A float tank bulb comprising an integral boss, the axis of which is coincident with the axis of said bulb, oppositely disposed openings in said bulb, and means on said boss whereby to close certain of said openings.

6. A float tank bulb comprising oppositely disposed seat engaging portions having openings therein, means dividing said seat engaging portions and a beaded boss on said last named means adapted to engage the edge of and close certain of said openings.

7. A float tank bulb comprising oppositely disposed seat engaging portions having openings therein, means dividing said seat engaging por-

tions, and means for varying the water receiving capacity of certain of said portions.

8. A float tank bulb comprising a water receiving chamber and a seating portion, and means for controlling the volume of said water receiving chamber.

9. A reversible float tank bulb comprising a web transverse to its axis, seat engaging means above and below said web, a water retaining chamber above and below said web, and means for varying the water retaining capacity of certain thereof.

10. The device of claim 9 in which certain of the water retaining chambers are of variable volume.

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