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E. E. HILLEGAS

2,189,345

FLUSH-TANK CONTROL

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FIG. 1.

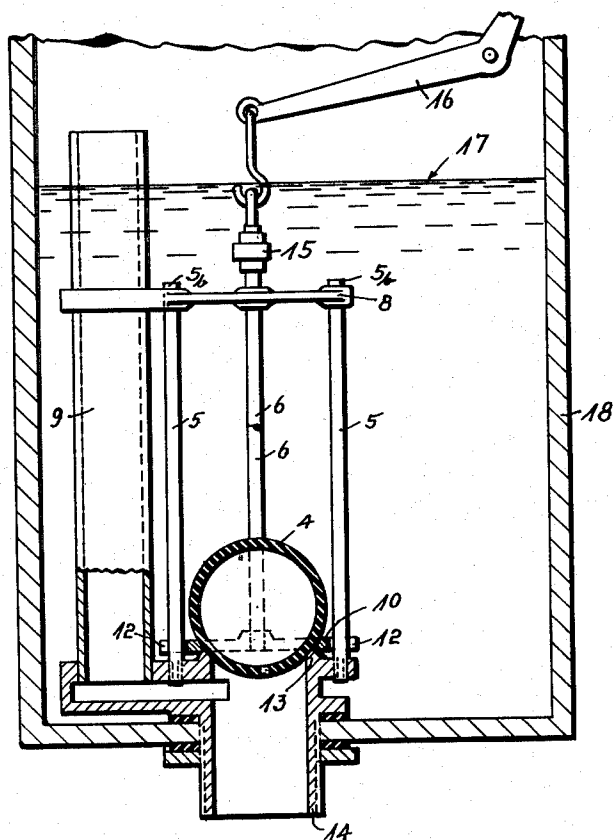


FIG. 3.

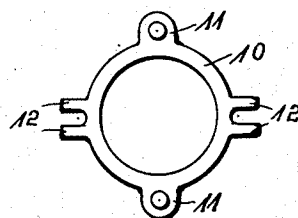
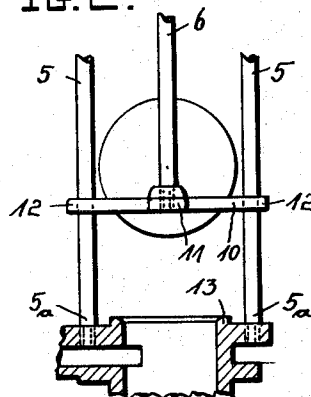


FIG. 2.



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FLUSH-TANK CONTROL

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3 Claims. (Cl. 4—57)

This invention relates to devices used for controlling the flow of water through flush-tanks.

One of the objects of this invention is to provide a simple and effective apparatus.

5 Another object is to provide a valve that may easily and quickly be replaced without any dismounting of other operating parts.

Another object is to provide a flushing device that is as noiseless as possible.

10 Another object is to provide a flushing apparatus for water-closet bowls that will be durable and economical.

Other objects will appear from the following description and appended claims as well as from 15 the accompanying drawing, in which—

Fig. 1 is a fragmentary vertical section through a flush-tank, illustrating the relative positioning of co-operating parts of this new invention.

20 Fig. 2 is a fragmentary vertical section through the valve control, with the valve lifted to open position.

Fig. 3 is a detail top plan view of the valve-lifting ring as located with respect to the guiding and lifting rods.

25 Though balls have been used before, the arrangement whereby a ball may freely move between upright posts that are so disposed as to closely guide the ball above the flushing outlet is designed to function in a novel manner.

30 As illustrated, the valve-ball 4 is free to move vertically between the two guide-rods 5 and also between the two lifting rods 6, the guide-rods 5 being firmly mounted with their lower ends 5a in the base 7 and with the upper ends 5b in the ring-like portion 3a of the arm 8, the arm 8, in turn, being firmly mounted on the stand-pipe 9.

35 The lifting rods 6 are vertically shiftable through suitable apertures in the ring-like portion 3a of the arm 8, so as to be guided thereby, a valve-lifting ring 10 being secured to the lower ends of the lifting rods 6 by means of the lug-portions 11 of the ring 10, there being additional fork-like lug-portions 12, to serve as lower guiding means with respect to the guide-rods 5.

40 The guide rods 5 as well as the lifting rods 6, with this particular illustrated arrangement, are equally spaced about the centrally disposed ball 4, so that the ball is in this manner held rather positively directly above the valve seat 13 in a manner that the ball may freely move for rising and falling actions and still be in perfect control for a proper seating on the flushing conduit that extends below the valve seat 13.

45 The whole arrangement of the rods and co-operating parts is also such that hardly any binding or wedging could ever be expected, so that, on any release of the flushing mechanism, the lifting rods with the attached ring 10 will immediately take the lower, inoperative, position illus-

trated in Fig. 1 so that the ball, also, may drop to closing and seating position without any obstruction of any sort, the ring 10, being, in such closing position, disposed about the valve seat 13 so that the ball may take its proper position on the seat as it drops from the lifted position illustrated in Fig. 2.

5 For properly actuating the lifting rods with attached ring, the upper ends of the lifting rods 6 are attached to a crosshead 15 that, in turn, is attached to any customary actuating lever, such as indicated in part at 16.

15 As the water level in a flush tank may normally be at 17, the pressure of this body of water will be sufficient to keep the ball 4 in seating and closing position on the valve seat 13 above the flushing conduit 14.

Any manipulation of the lever 16 will readily actuate the attached lifting rod 6 with attached ring 10, to lift the ball 4 from its closing and seating position to eventually the point illustrated in Fig. 2 for flushing operations, from which the different parts will again return to their inoperative positions as set forth above.

Having thus described my invention, I claim:

25 1. In a flush-tank control, in combination with the outlet flushing conduit, a ball disposed above the conduit, guiding rods mounted about the conduit and evenly spaced about the lateral sides of the ball, a lifting ring with means in operative relation to the guiding rods disposed above the conduit and about the ball and adapted to lift the ball, and means for actuating the lifting ring and therewith the ball for flushing operations.

30 2. In a flush-tank control, in combination with the outlet-seat of the flushing conduit, a ball disposed to normally seat for closing the conduit, guiding means extending upwardly from the conduit in spaced relation to the ball, lifting means for the ball also in spaced relation to the ball and with means in operative relation to the guiding means, and actuating means for the lifting means.

35 3. In a flush-tank control, in combination with the outlet-seat of the flushing conduit, a ball disposed to normally take a closing position on the seat, guiding rods extending from the conduit upwardly and laterally spaced from the ball, a lifting ring disposed to contact the ball near the lateral periphery from the underside of the ball 50 and having means to be guided on said rods, lifting rods secured to the lifting ring and laterally spaced from the ball equally with the guiding rods, means for firmly holding the guiding rods at their upper ends and for shiftable guiding the lifting rods, and means for actuating the lifting ring and rods and therewith the ball.

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