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C. M. MEIGHAN

FLUSH TANK

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Fig. 1.

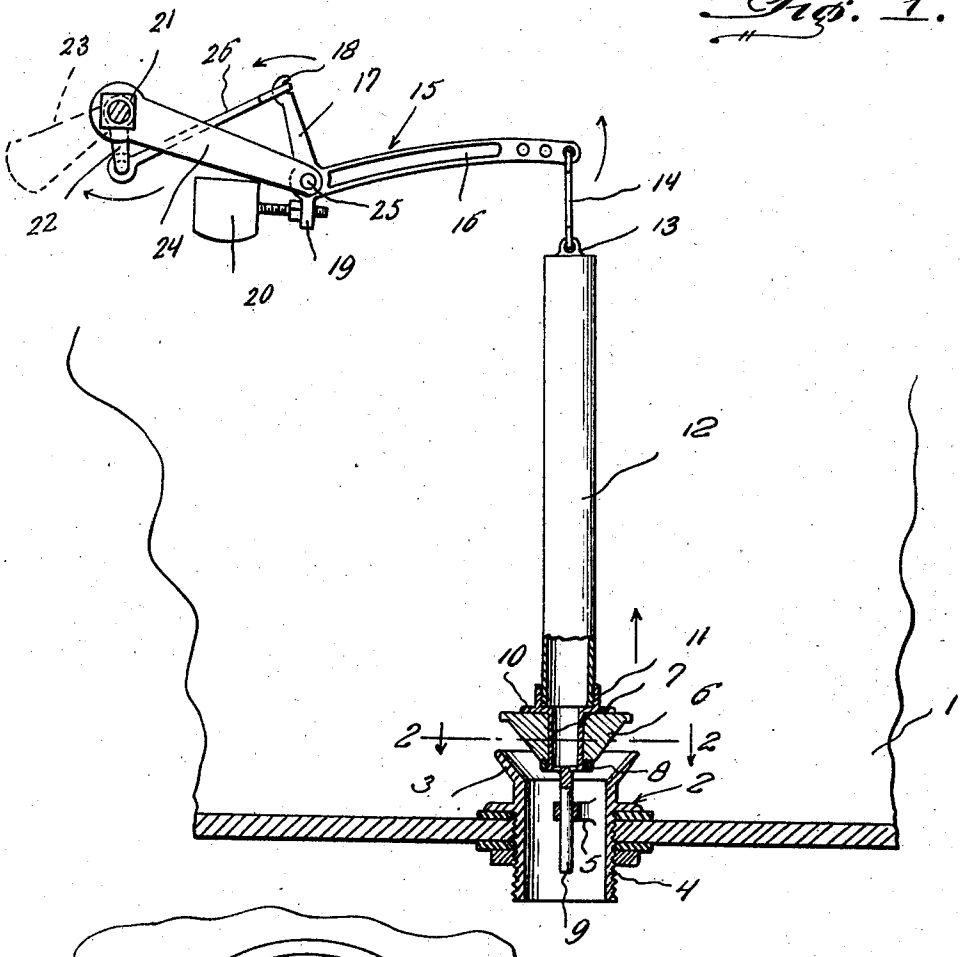
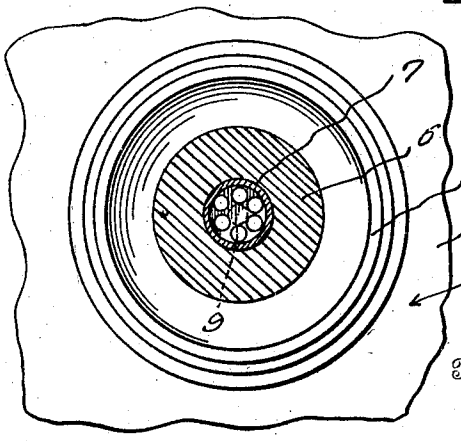


Fig. 2.



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FLUSH TANK.

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This invention relates broadly to an improved flush tank, but has more specific reference to an improved valve structure and operating mechanism therefor.

In the majority of flush tanks, now commonly employed, there is an especially designed fixture attached to the bottom and designed to provide a valve seat and a support for an overflow pipe. Various forms of valves are employed for cooperation with the seat, and in most instances there is a flexible connection between the valve and the operating mechanism. The connection in some instances consists of slidably connected wires and in other instances consists merely of a single wire.

There is a gravity valve structure on the market at the present time. In the said marketed structure, the valve seat is formed integral with a threaded nipple which is fitted through an opening in the bottom of the flush tank. The fitting is constructed with a mounting for a vertical overflow pipe and the overflow pipe is provided with supporting means at its top upon which a lever is rockably mounted. There is a wire connection between the lever and the gravity lowered valve and suitable means on the valve and fitting to guide the valve to its seat.

The present invention contemplates a revision of the special fitting at the bottom of the tank and an elimination of the form of overflow pipe and the mounting recited. More specifically, the improvement resides in a specific means of connecting the gravity lowered valve to the bottom of the overflow pipe and utilizing the overflow pipe as the major portion of the connection between the valve and operating lever of the control mechanism.

The invention also has reference to a slight revision and improvement in the operating mechanism.

The specific features and advantages will become apparent from the following description and drawings.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same:—

Figure 1 is a view in section and elevation showing a fragmentary portion of a flush tank with the improved valve, overflow pipe, and operating mechanism therein.

Fig. 2 is a detail section taken approximately upon the plane of the line 2—2 of Fig. 1, looking in the direction of the arrows.

In the drawings, the reference character 1 designates the flush tank proper. This is of usual construction. As stated, there is a special fitting 2 at the bottom, and this comprises a flared upper end 3 forming a valve seat and a depending neck 4 which is screw threaded to provide an attaching nipple. This extends through an opening in the bottom of the tank as is usual and is held in place by appropriate packing. On the interior of the nipple is a guide bracket or spider 5.

In accordance with my invention, I provide an improved rubber valve 6 of substantially frusto-conical form. This is shaped to conform to the contour of the valve seat to effect a tight closure. It is formed with a central opening. This opening in the valve serves to accommodate a special coupling which in the present instance comprises a tube 7 extending thru and beyond the valve 6. This tube is closed at its bottom, but the water is allowed to escape through the perforations which are formed in its bottom as shown more plainly in Fig. 2. Moreover that portion of the tube extending beyond the valve is screw threaded for reception of a clamping nut 8. In addition, there is a central stem 9 formed integral with the perforated bottom and this extends downwardly through a central guide opening in the spider or guide 5. The top of the tube is formed with an outstanding flange 10 and a central upstanding collar 11.

The screw threaded lower end of an overflow pipe 12 is tapped into this collar, this pipe being formed at its top with an upstanding apertured ear 13 with which a supporting link 14 is connected. Thus, I provide an improved unit comprising a combined connection, valve carrier, and overflow pipe, and guiding means therefor.

The operating mechanism comprises a bell crank 15, the horizontal arm 16 of which is apertured at its outer end for adjustable connection of the link 14. A short vertical arm 17 is formed at its free end with a hook 18 and at its central portion with a depending ear 19 serving as a mounting for a counter-balance weight 20. As is customary, a polygonal bushing 21 is fitted into the front wall of the flush tank and this serves as a bearing for an oscillatory crank 22 to which the usual finger operated member 23

is connected. Formed integral with the bushing 21 is an inclined supporting arm 24 having a bearing at its free end in which the pivot 25 of the bell crank is journaled for rotation.

A connecting wire 26 is connected at one end to the crank 22 and at its opposite end with the hook 18. Thus when the handle 23 is rocked in the usual way, the bell crank will be operated to exert an upward lift upon the overflow pipe 12, whereby to unseat the valve 6, and to allow a discharge of water from the tank.

The features and advantages derived from an arrangement of this kind will be plainly evident after considering the description in connection with the drawings. Therefore, a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

Having thus described my invention, what I claim as new is:—

The combination of a tank, said tank having a discharge, a vertically movable valve for controlling said discharge, an element fixed to and extending upwardly from said valve, a bell crank having one arm connected with the upper portion of said element, and also having a trunnion intermediate of its arms, and a lug pendent from its portion intermediate of its arms, a rod threaded through said lug and thereby adjustably fixed thereto and having a weight at the opposite side thereof, with reference to said vertically movable element, and a manually operable crank connected with the other arm of the bell crank.

In testimony whereof I affix my signature.

CHARLES M. MEIGHAN.