Nov. 29, 1932. W. E. BELL 1,889,626

TOILET FLUSH VALVE

Filed April 30, 1931 2 Sheets-Sheet 1

Fig. 1.

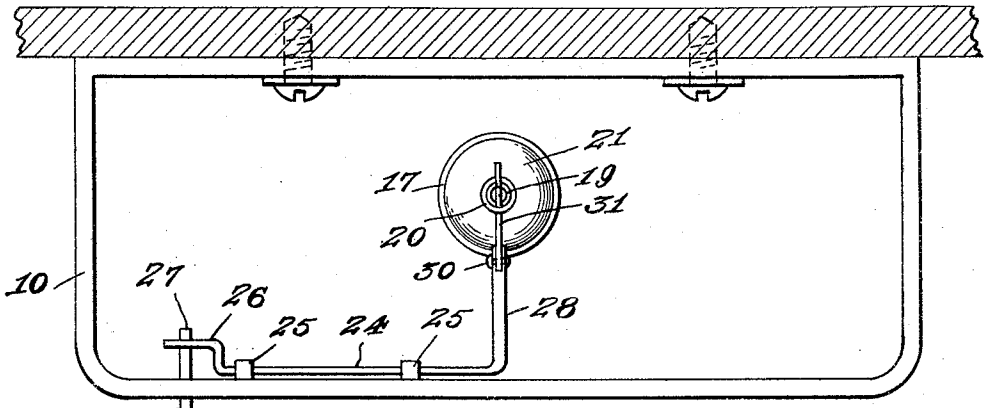


Fig. 2.

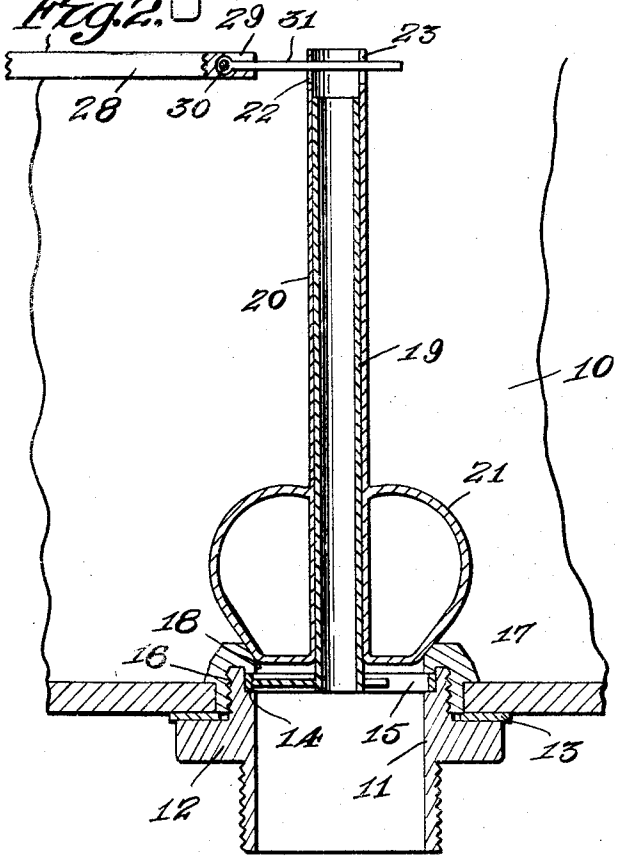
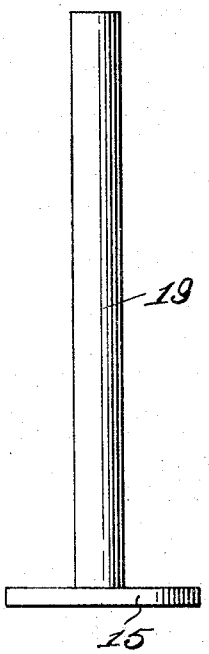


Fig. 4.



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TOILET FLUSH VALVE

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Fig. 3.

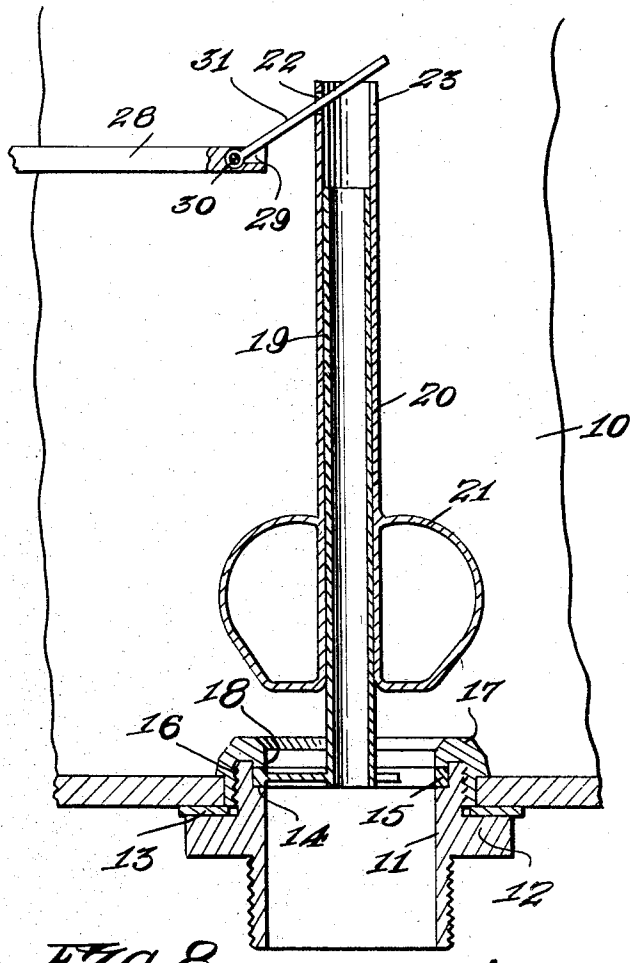


Fig. 5.

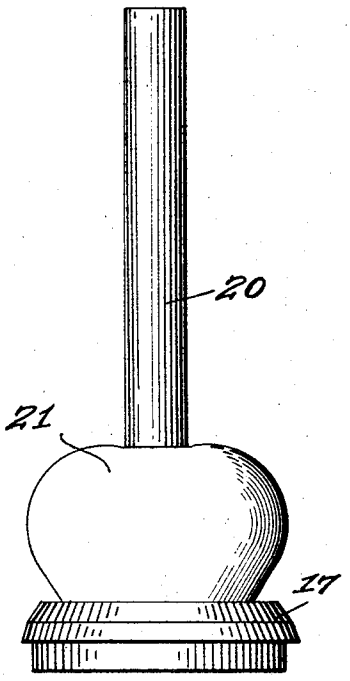


Fig. 6.

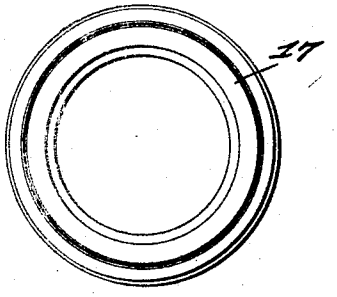


Fig. 8.

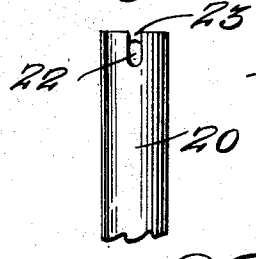
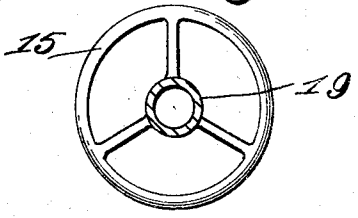


Fig. 7.



WITNESS:

W. E. Bell, INVENTOR

BY Victor J. Evans and Co, ATTORNEY

Patented Nov. 29, 1932 1,889,626

UNITED STATES PATENT OFFICE

WILLIAM E. BELL, OF HONOLULU, TERRITORY OF HAWAII, ASSIGNOR OF ONE-HALF TO L. L. McCANDLESS, OF HONOLULU, HAWAII

TOILET FLUSH VALVE

Application filed April 30, 1931. Serial No. 534,064.

The present invention has reference to float valves and more particularly to valves of this character used in closet flushing tanks.

It is an object of the present invention to provide a valve of the class in question, which when installed does not require adjustments from time to time, and insures proper seating of the valve under all conditions and circumstances, thereby giving the desired results.

Another object of the invention resides in the provision of a novel construction of means for unseating the valve and allowing the valve to move away from its seat to permit the water in the tank to more readily flow therefrom.

The nature and advantages of the invention will be better understood when the following detail description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application like numerals of reference indicate similar parts in the several views and wherein:

Figure 1 is a top plan view of a tank showing the invention associated therewith.

Figure 2 is a fragmentary view of the tank showing the valve mechanism in section and the valve seated.

Figure 3 is a similar view showing the valve elevated.

Figure 4 is a view in elevation of the web and overflow pipe.

Figure 5 is a similar view of the valve seat and valve.

Figure 6 is a plan view of the valve seat.

Figure 7 is a plan view of the web showing the overflow pipe in section.

Figure 8 is a fragmentary detail view of the valve sleeve.

Referring to the drawings in detail 10 indicates a tank having an opening in the bottom thereof to receive a tubular casting 11. The casting is provided with a flange 12 arranged beneath the bottom of the tank, and interposed between the latter and flange 12 is a washer or gasket 13. That portion of the casting received within the opening of the tank is provided with an internal shoulder 14 upon which reposes a web 15. The casting is externally threaded as at 16 to accommodate the internal threads of a valve seat 17. This seat is formed with a depending flange 18 which engages and holds the web 15 positioned within the casting. Rising centrally from the web is an overflow pipe 19, while slidably mounted on this pipe is a sleeve 20. Carried by the lower end of the sleeve, and preferably forming an integral part thereof is a float valve 20 designed to effectively engage the seat 17. The sleeve 20 normally projects a slight distance above the upper end of the overflow pipe and is provided with an opening 22 and a diametrically opposed slot 23 for a purpose to be hereinafter described. It will be observed that the threads of the casting 11 and valve seat 17 are located to prevent them from coming in contact with the water and thus preserving these threads from rust or corrosion. Furthermore, the overflow pipe 19 not only serves as a guide for the valve, but insures proper seating of the latter under any and all conditions, so that the valve will give the proper and desired result. It will be further noted that the web 15 is located beneath the seat 17 so that it will not interfere with the proper seating of the valve.

While various means may be employed for unseating the valve as the occasion may require, I preferably make use of a rock shaft 24 journaled in suitable bearings 25 located within the tank. The shaft includes an offset extremity 26 normally reposing on the adjacent end of a trip lever or operating element 27. The opposite end of the shaft is arranged at a right angle thereto as indicated at 28, and this end of the shaft is provided with a short groove 29 to receive the pivoted end 30 of a trip rod 31. This rod passes through the opening 22 of the sleeve 20 and is normally received by the slot 23 thereof.

In practice, in order to unseat the valve it is only necessary to depress the lever 27 which imparts rocking movement to the shaft 24 in a direction to initially unseat the

valve 21, and as the valve floats upwardly within the tank the rod 31 is moved upon its pivot to assume the position illustrated in Figure 3. In other words the rod 31 allows the valve to rise within the tank independently of the shaft 24 so that the opening in the bottom of the tank will be fully uncovered in a manner to allow the water to more readily flow therefrom.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What is claimed is:

1. A valve mechanism for a closet flush tank, comprising a flanged tubular casting received by an opening in the bottom of the tank and exteriorly threaded, a web supported within the casting, a valve seat threaded on said casting and holding the web positioned therein, an overflow pipe rising centrally from said web and terminating above the valve seat, a sleeve slidably mounted on the pipe and projecting above the latter, a float valve carried by the lower end of the sleeve and normally engaging said seat, a rock shaft journaled within the tank, and means including a pivoted rod connecting the rock shaft with the projecting end of the sleeve for unseating the valve, and to permit opening of the valve independently of the shaft.

2. A valve mechanism for a closet flush tank, comprising a valve seat, an overflow pipe rising centrally therefrom, a sleeve slidably mounted on the pipe and projecting above the latter, the projecting end of said sleeve having an opening and a diametrically opposed slot, a rock shaft supported within the tank and having a grooved extremity, a trip rod having one end pivoted within the groove and its other end passed through said opening of the sleeve and normally received by said slot, means for initially rocking said shaft to unseat said valve, and said pivoted trip rod permitting opening of the valve independently of said shaft.

In testimony whereof I affix my signature.

WILLIAM E. BELL.