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FLUSH VALVE GUIDE FOR FLUSH TANKS

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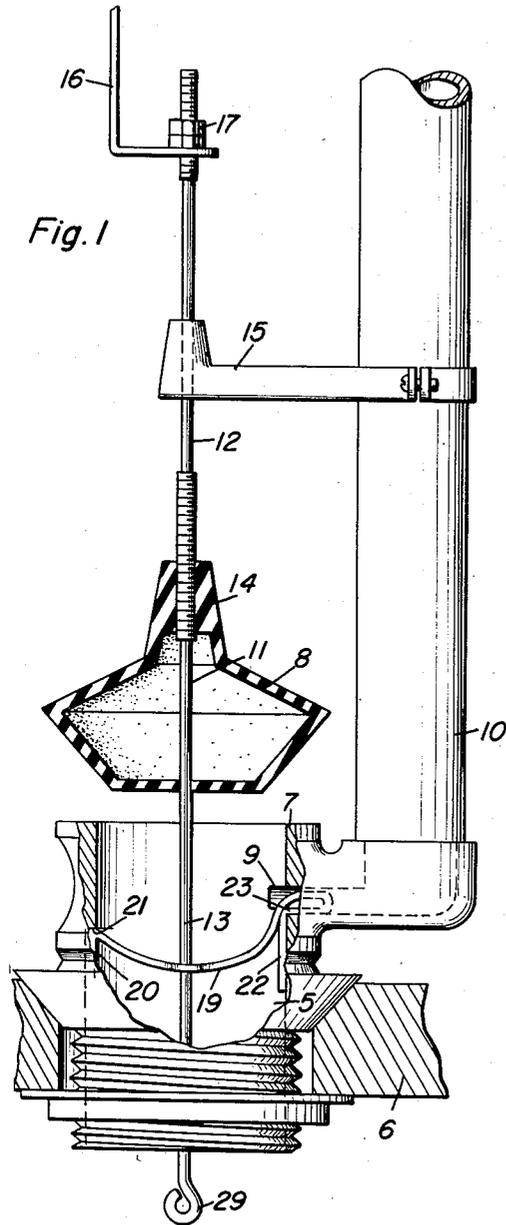


Fig. 1

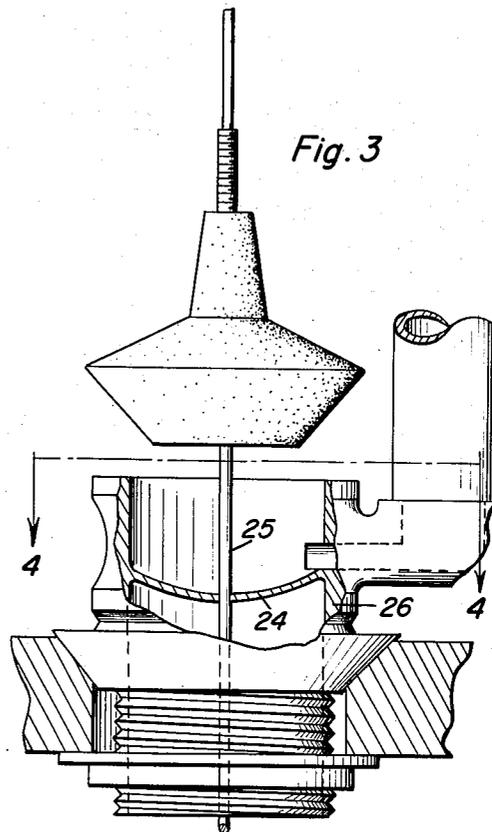


Fig. 3

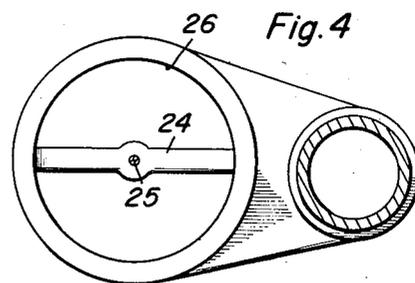


Fig. 4

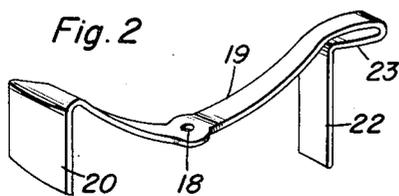


Fig. 2

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FLUSH VALVE GUIDE FOR FLUSH TANKS

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1 Claim. (Cl. 4-57)

The present invention relates to new and useful improvements in flush valves or valves for flush tanks and more particularly to guide means to accurately seat the ball on its valve seat.

An important object of the invention is to provide the flush valve or valve with a lower guide rod as well as with the usual upper guide rod and guide means for both rods to ensure a proper seating of the ball.

Another object is to provide a guide for the lower guide rod adapted for detachably mounting in position in the outlet of the flush tank without requiring fastening means of any character and without necessitating changes or alterations in the construction of the flush tank or fittings therefor.

A further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purpose for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a vertical sectional view of the outlet for the flush tank showing the lower guide therein;

Figure 2 is a perspective view of the guide;

Figure 3 is a vertical sectional view of the outlet showing the guide cast therewith; and

Figure 4 is a sectional view taken on a line 4-4 of Figure 3.

Referring now to the drawing in detail, wherein for the purpose of illustration, I have disclosed a preferred embodiment of my invention, the numeral 5 designates the outlet in the bottom of a flush tank 6 and having a valve seat 7 at the upper portion of the outlet for the rubber ball cock or valve 8.

The outlet is provided with an overflow passage 9 beneath the valve seat leading to an upstanding overflow pipe or tube 10.

A rod 11 extends vertically through the ball cock or valve 8 to form an upper guide rod 12 and a lower guide rod 13 and the central portion of the rod 11 is threaded in the neck 14 of the ball cock or valve to adjust the latter on the rod. Upper rod 12 is slidable in a guide 15 attached to the overflow pipe 10 and the upper end of rod 12 is

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threadedly connected to a link 16 which is actuated by the usual flush tank handle (not shown) to raise and open the ball cock or valve. Rod 12 is locked in adjusted position to the link 16 by jamb nuts 17.

The lower guide rod 13 is slidable in an opening 18 in a resilient strap metal guide 19 which is concaved at its central portion and formed with a downwardly projecting flange 20 at one end engaged under a shoulder 21 internally of the outlet 5 and the other end portion of guide 19 is formed with a downwardly projecting flange 22 parallel to flange 20, and adjacent flange 22, the material of the guide is bent upon itself to form a laterally projecting shoulder 23 adapted to enter the passage 9 for the overflow pipe to support the guide 19 in the outlet.

The upper guide 15 and guide rod 12 and lower guide 19 and guide rod 13 maintain the rods centered in the outlet 5 of the flush tank to ensure effective seating of the ballcock or valve 8 on the valve seat 7 and prevent misalignment of the valve with the valve seat and which usually results in leakage of water from the flush tank.

In the modified construction illustrated in Figures 3 and 4, the lower guide 24 for lower guide rod 25 is cast integrally in the outlet 26 as a permanent part thereof. Alternatively, the rod 11 may be reversed and the jamb nuts 17 eliminated by the engagement of the looped end 29 of rod 11 with the link 16. The link 16 may then be, if desired, in the form of a kinkless chain or the like.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

In a flush tank, the combination of an outlet having a valve seat and inner side walls and also having a passage leading to an overflow pipe, a ball valve adapted to engage the valve seat, and upper and lower guide means for the valve, said lower guide means comprising a rod extending downwardly from the valve, a resilient strap metal guide having downwardly projecting flanges at its end portions positioned internally of the outlet, said guide having a concave central portion, said flanges engaging said inner side walls of said outlet, and a shoulder projecting laterally at the junction of one of the flanges and inserted in said passage to support the guide in the outlet.

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