Dec. 26, 1950 W. B. ZERN 2,535,885

TANK FLUSH BALL

Original Filed March 29, 1945

Fig. 1.

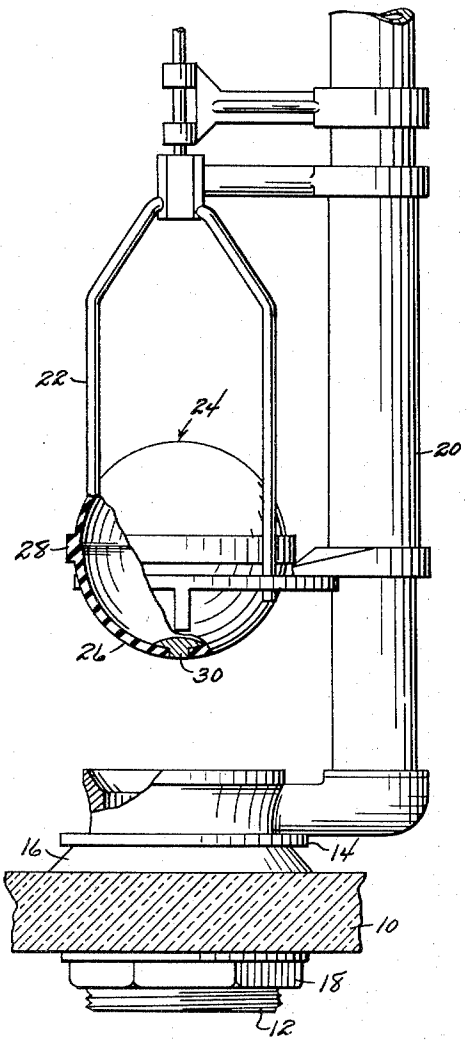


Fig. 2.

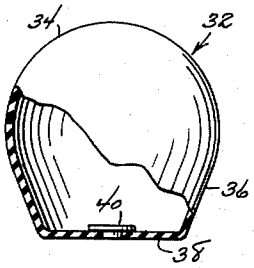


Fig. 3.

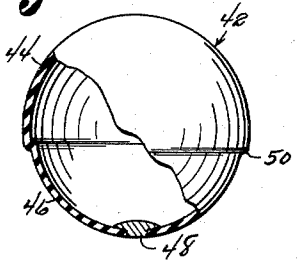


Fig. 4.

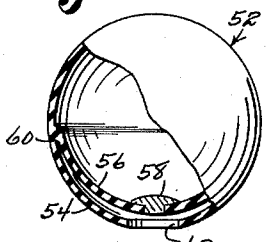
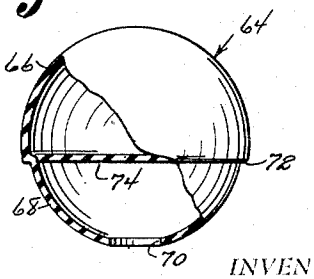


Fig. 5.



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TANK FLUSH BALL

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Original application March 29, 1945, Serial No. 585,556. Divided and this application March 13, 1946, Serial No. 654,032

1 Claim. (Cl. 4—56)

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This invention relates to improvement in ball valves for flush tanks and is a division of my co-pending application for Tank Flush Ball, Serial No. 585.556. filed March 29, 1945 (issued as Patent No. 2,460,114, Jan. 25, 1949).

An object of the invention is to provide a ball valve that by its unique structure will insure accurate and proper seating and a more efficient buoyancy of the valve.

Another object of the invention is to provide a ball-valve that is simple in construction, durable in use, efficient in operation and inexpensive to manufacture.

With the above and other objects and advantages in view the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawing in which:

Figure 1 is an elevational view of a fragment of a flush tank and an embodiment of the invention shown partly in section in use therewith.

Figure 2 is an elevational view partly in section of a modified form of ball.

Figure 3 is the same of another modified form.

Figure 4 is the same of a further species and

Figure 5 is the same of a further species.

Referring more in detail to the drawings the numeral 10 designates the bottom of a toilet flush tank, having the outlet pipe 12 provided with the flange 14 engaging the packing 16 to provide a water tight joint, the clamping nut 18, vertical overflow pipe 20 on which is mounted the cage 22 for the ball valve 24 embodying the invention.

The ball valve 24 comprises the spherical body 26 which is provided at its center circumference with an outstanding annular rubber flange 28 to engage the cage 22 and the ball at the bottom thereof is provided with a weight 30.

In Figure 2 the ball 32 has a semi-spherical top 34 and a tapered elongated lower circumference 36 having a flat bottom 38 having a weight 40 provided at the center thereof.

In Figure 3 the ball 42 has a semi-spherical top portion 44 and a reduced semi-spherical bottom portion 46 which is provided at its center with the weight 48 and the top and bottom portions at their central meeting line, forms the annular shoulder 50.

Referring in detail to Figure 4 of the drawings, there is shown another modified ball which is indicated generally by the numeral 52. The ball 52 is of spherical shape and includes an arcuate bottom portion 56 that is connected to the top portion of the ball by an offset shoulder 60. The bottom portion 56 is smaller than the top portion of the ball 52. The ball 52 further includes an arcuate skirt member 54 which is preferably fabricated of live rubber, the skirt member 54 being arranged in spaced relation about the bottom portion 56. The upper annular edge of the skirt member 54 is secured to the top portion of the ball 52 adjacent the offset shoulder 60, in any suitable manner, as for example by vulcanization. A weight 58 is mounted on or secured to the bottom portion 56, and the skirt member 54 is provided with an air opening 62 at the center thereof.

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In Figure 5 the ball 64 is similar in shape to the ball shown in Figure 3 having the semi-spherical top portion 66 and a reduced semi-spherical bottom portion 68 which is provided at its center with an air opening 70 and the top and bottom portions at their central meeting line forms the annular shoulder 72. A transverse partition joined to the inner wall of the ball at the shoulder seals the upper part of the ball air tight above the shoulder 72.

In all the types of balls shown their seating is accurate and proper and generally a more efficient buoyancy is obtained.

It is believed that the construction, operation and advantages of the invention will be apparent to those skilled in the art and it is to be understood that changes in the minor details of construction, arrangement and combination of parts may be resorted to provided they fall within the spirit of the invention and the scope of the appended claim.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

In a valve construction for a flush tank, a ball adapted to be supported on a ring, said ball including a bottom portion of a size less than the top portion thereof, there being an offset shoulder connecting said bottom portion to said top portion, a weight secured to said bottom portion, an arcuate rubber skirt member arranged in spaced relation about said bottom portion, said skirt member having its upper edge secured to said top portion adjacent said offset shoulder, there being an opening in said skirt member for the ingress and egress therethrough of air.

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