

Nov. 10, 1953

J. R. MARTINEZ

2,658,206

TOILET BOWL FLUSH TANK DEODORIZER

Filed Oct. 26, 1950

Fig. 1.

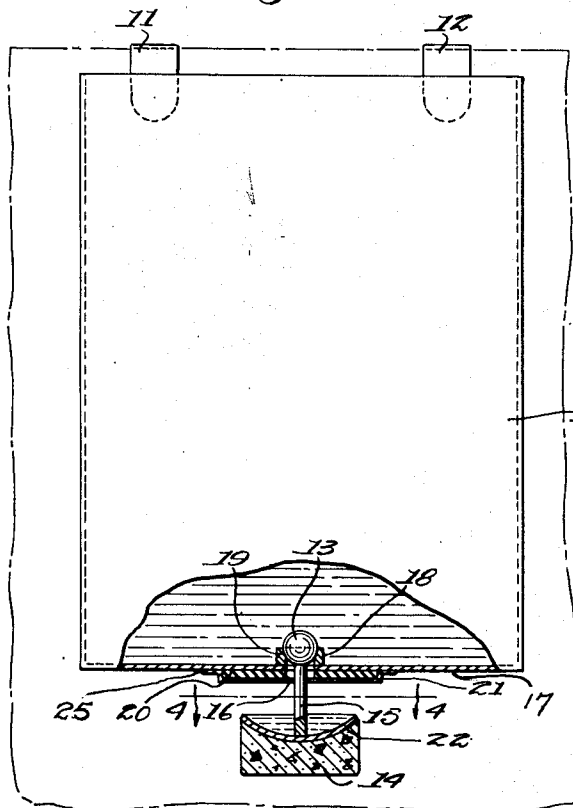


Fig. 2.

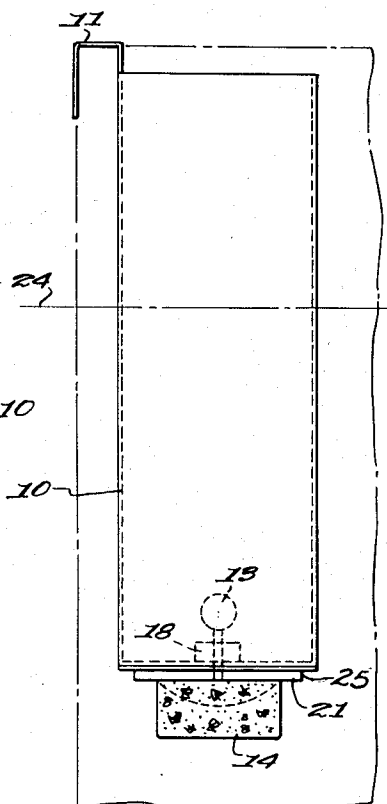


Fig. 3.

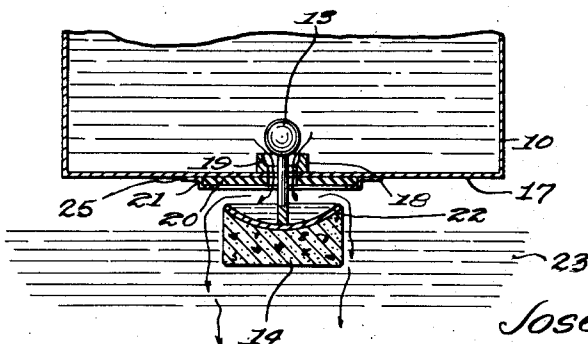
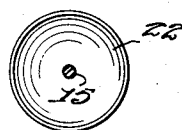


Fig. 4.



INVENTOR.

José R. Martinez,

BY *Victor J. Evans, Inc.*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,658,206

TOILET BOWL FLUSH TANK DEODORIZER

José Rafael Martinez, Miami, Fla.

Application October 26, 1950, Serial No. 192,165

1 Claim. (Cl. 4-228)

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This invention relates to devices for providing deodorants in small quantities of flush tanks of toilet bowls and the like which operate to discharge a chemical with flushing of the tank, and in particular a container suspended by clips from the upper edge of a wall of the tank with a valve positioned in an opening in the bottom of the container and with the valve designed to close the opening when the tank is empty and also to close the opening when the tank contains water the level of which is positioned above the lower end of the container.

The purpose of this invention is to provide means in a container suspended in the flush tank of a toilet bowl for discharging a comparatively small amount of a chemical as the water level drops below and also passes upwardly over the lower end of the container.

Disinfectant and deodorant containers of this type have been provided with different forms of valves which are opened or actuated with flushing of the tank but it has been found difficult to provide a valve for this purpose without pivotally mounted levers or other operating instrumentalities which, at some time, become inoperative. With this thought in mind this invention contemplates a container having a float actuated ball valve suspended through an opening in the lower part thereof wherein the valve opens during both the rise and fall of water in a tank in which the container is positioned.

The object of this invention is, therefore, to provide means for constructing a valve in the lower end of a container whereby the valve is opened and closed to permit the escape of a deodorant in the container as the water level drops below the lower end of the container and also as the water level rises above the lower end of the container.

Another object of the invention is to provide a deodorant container having a valve therein actuated by the rise and fall of water in a tank and which may be installed in flush tanks of toilet bowls now in use without changing the design or arrangement of the tank.

A further object of the invention is to provide an automatically discharging deodorant container for flush tanks of toilet bowls which is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a tank having an opening in the lower end with a valve seat in a tube extended upwardly from the opening and with a sealing washer secured to the bottom of

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the tank and positioned around the opening, and a ball valve having a stem with the ball positioned in the container and with the stem, on the lower end of which a float having valve means is provided, extended through the opening in the bottom of the container.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a front elevational view of the toilet bowl flush tank deodorant container with part of the lower end broken away showing the valve structure therein.

Figure 2 is an end elevational view of the deodorant container shown in Figure 1.

Figure 3 is a sectional view through the lower end of the container showing the valve in the open position.

Figure 4 is a sectional plan taken on line 4-4 of Figure 1 illustrating the float structure carried by the lower end of the valve stem.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved deodorant container of this invention includes a substantially rectangular shaped casing 10 having mounting clips 11 and 12 on the upper end with a ball valve 13 and a float 14 on opposite ends of a stem 15 and positioned with the stem extended through an opening 16 in the bottom 17 of the casing.

In the design shown the casing 10 is rectangular shaped, however, it will be understood that the casing may be of any suitable shape or design. In the casing 10 a sleeve 18 having a valve seat 19 in the upper end extends upwardly from the inner surface of the bottom 17 with the valve seat 19 positioned to receive the ball 13, as illustrated in Figure 1.

A sealing washer 20 is positioned against the under surface of the bottom 17 of the container casing and the washer is retained in place by a ring 21. The ring 21 is provided with an annular flange 25 which is secured to the under-surface of the casing. The flange 25 engaging the periphery of the washer serves to retain it in place as previously set forth.

The lower end of the stem 15 is provided with an arcuate or cup-shaped disc 22, on the under surface of which the float 14 is positioned, and the upper peripheral edge of the disc coacts with the sealing washer 20 to close the opening 16 when the float is held upwardly by water in the flush tank, which is indicated by the numeral 23.

With the parts arranged in this manner the

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deodorant container or casing 10 is suspended in a flush tank with the clips 11 and 12 extended over the upper edge of a wall of the tank as shown in Figures 1 and 2 whereby the casing is positioned in the upper part of the tank and with the lower end extended below the water level which is indicated by the numeral 24. The clips 11 and 12 are positioned under the edge of the conventional cover of the tank.

With the container in this position, water in the tank holds the float upwardly with the rim of the disc 22 against the sealing washer 20, as illustrated in Figure 2 whereby the opening is closed and as the water level drops, with flushing of the tank the float drops downwardly as illustrated in Figure 3, opening the valve until the ball 13 drops into the valve seat 19, as shown in Figure 1. In this movement deodorant escapes through the opening as indicated by the arrows in Figure 3.

When water is again supplied to the flush tank the rising water level carries the float 14 upwardly, again opening the valve so that deodorant is discharged into the tank with both downward and upward movement of the water level in the tank.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

A flush tank deodorant container comprising a casing having suspended clips on the upper end and an opening in the bottom with a tube having a valve seat in the upper end positioned

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around the opening and extended upwardly into the casing, a vertically disposed stem extended through the opening and having a ball on the upper end and an arcuate disc on the lower end, said ball on the upper end of the stem positioned to coact with the valve seat in the upper end of the tube in the casing, a sealing washer positioned against the under surface of the bottom of the casing and extended around the said opening, a ring having an annular flange thereon secured to the under surface of the casing and engaging the periphery of the washer to retain the same in position around the said opening, and a float carried by the said arcuate disc on the lower end of the stem and positioned to carry the stem and arcuate disc upwardly with the peripheral edge of the arcuate disc in engagement with the sealing washer within the ring to close the opening in the bottom of the casing.

JOSÉ RAFAEL MARTINEZ.

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