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TOILET DEODORIZING DEVICE

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FIG. 1

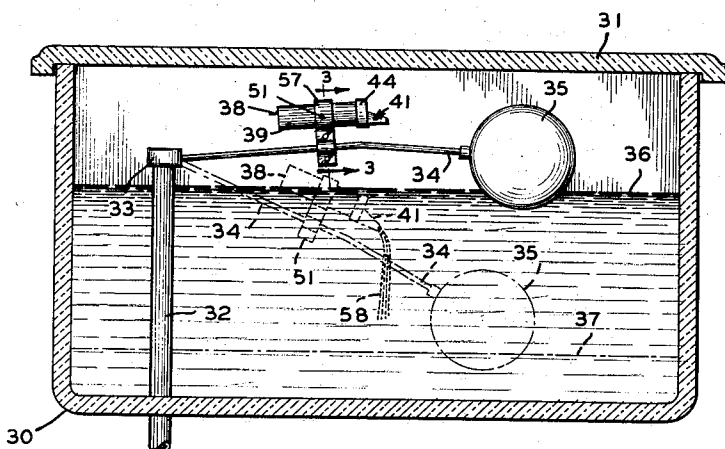
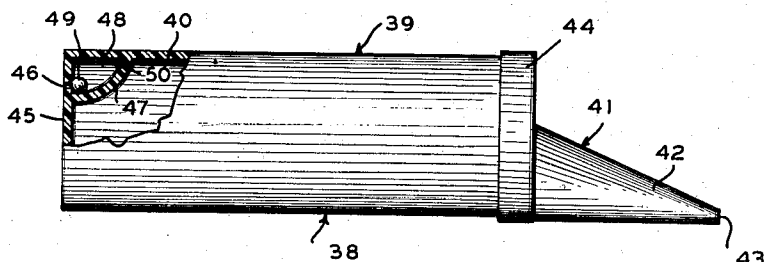


FIG. 2

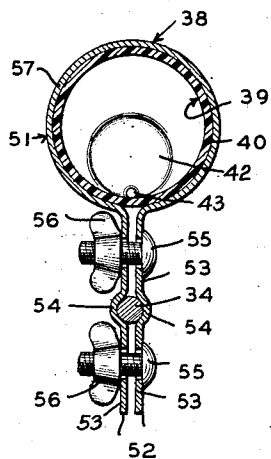


FIG. 3

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TOILET DEODORIZING DEVICE

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5 Claims. (Cl. 4—227)

This invention relates to a toilet, and more particularly to a deodorizing or disinfecting device for a toilet.

The object of the invention is to provide a device which is adapted to be mounted in a toilet flush tank, so that as the toilet is flushed, a quantity of deodorant or disinfectant will be automatically dispensed so that the deodorant or disinfectant will be carried into the toilet bowl as the toilet is flushed.

A still further object of the invention is to provide a dispensing device which is adapted to be releasably connected to the movable rod which is mounted in a toilet flush tank, so that when the toilet is flushed, and the level of water in the flush tank decreases as the float moves downwardly, a quantity of disinfectant or deodorant fluid will be automatically dispensed into the water whereby this material will be carried into the toilet bowl to effectively perform the deodorizing or disinfecting function.

A still further object of the invention is to provide a dispensing device for a toilet flush tank, wherein the device can be readily installed in place without requiring any special tools, and wherein the container or dispenser is adapted to be made of a suitable material such as a plastic material whereby it will not be subject to corrosion and wherein it will not break and wherein the device can be readily adjusted so that the desired quantity of disinfectant or deodorant can be discharged as desired.

A further object of the invention is to provide a toilet deodorizing and disinfecting device which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

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

Figure 1 is a vertical sectional view taken through a toilet flush tank, and showing the dispensing device of the present invention mounted on the movable rod.

Figure 2 is an elevational view of the dispenser, with parts broken away and in section.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Referring in detail to the drawings, the numeral 30 designates or indicates a conventional toilet flush tank which includes the usual lid 31 thereon, and the tank 30 is provided with the usual pipe or tube 32 which has a valve mechanism 33 on the upper end thereof. There is further provided the usual movable rod 34 which has a float 35 on an end thereof. In Figure 1 the numeral 36 indicates the water level when the tank 30 is substantially full of water, and in Figure 1 the numeral 37 indicates the position of the water level after the tank or toilet has been flushed.

The present invention is directed to a dispenser which is indicated generally by the numeral 38, and the dispenser 38 is adapted to be used for dispensing a predetermined quantity of deodorant or disinfectant into the water in the tank 30, so that as the water enters the toilet bowl,

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the deodorant or disinfectant will be carried into the toilet bowl. As shown in Figure 2 the dispenser includes a body member which is indicated by the numeral 39, and the body member 39 is hollow and may be made of a suitable material such as a suitable plastic. The body member 39 includes a cylindrical wall portion 40, and the numeral 41 indicates a nozzle or head which is releasably or detachably connected to the body member 39. The nozzle 41 includes a tapered discharge portion 42 which is provided with a small outlet apertured end 43, and the nozzle 41 also includes a rim portion 44 which is releasably connected to an end of the wall portion 40. As shown in Figure 2, the body member 39 further includes an end portion 45.

There is arranged adjacent the end wall 45 of the body member 39, a partition 47 which defines in the body member 39 a compartment 48. The partition 47 has an aperture 50 therein, and a spherical ball-like member 49 is mounted for movement in the compartment 48, and the ball member 49 is adapted to move into and out of open and closed relation with respect to the aperture 46 in the wall 45, and the aperture 50 in the partition 47.

There is further provided a clamping means which is indicated generally by the numeral 51, and the clamping means 51 permits the dispenser 38 to be releasably connected to the rod 34. The clamping means 51 includes a circular portion 57 that surrounds the wall member 40 of the body member 39, and extending from the circular portion 57 is a pair of spaced apart arms 52. The arms 52 include flat portions 53 and arcuate sections or portions 54 that engage the cylindrical rod 34, Figure 3. Bolts 55 extend through the arms 52, and wing nuts 56 threadedly engage the bolts 55.

From the foregoing, it is apparent that there has been provided a device wherein a predetermined or selected quantity of deodorant or disinfectant can be automatically dispensed into the water of a flush tank so that the deodorant or disinfectant will flow into the toilet bowl during the flushing operation. In use, the nozzle 41 may be removed from the body member 39, and with the body member 39 or dispenser disconnected from the rod 34, it will be seen that the body member 39 can be filled with a suitable quantity of fluid or liquid deodorant or disinfectant, and this fluid material may be of any suitable or conventional composition. Then, the nozzle 41 can be arranged on the body member 39, and the clamp mechanism 51 can be used for connecting the body member 39 to the rod 34, as for example as shown in Figure 3. Thus, it will be seen that the circular portion 57 of the clamp 51 straddles the wall member 40 of the body member 39, and the pair of arms 52 extend from the circular portion 57. The arms 52 are provided with the flat portions 53 through which extend the bolts 55, and the wing nuts 56 on the bolts 55 serve to maintain the parts in their proper assembled position. The arms 52 include curved sections 54 which snugly receive or engage the rod 34. As previously stated, the partition 47 defines the compartment 48 in which is mounted the ball valve 49, and this ball valve 49 is mounted for movement into and out of engagement with the apertures 46 and 50. Normally, with the parts in the solid line position shown in Figure 1, the ball 49 will be in one position, and when the dispenser 38 moves downwardly to the broken line position of Figure 1 from the solid line position of Figure 1, the ball 49 will move to a different position, and this ball will permit air to enter the dispenser or body member whereby the proper amount of fluid can be dispensed out through the tilted nozzle 41 and through the outlet end 43. This deodorant or disinfectant is shown in dotted lines in Figure 1 and is indicated by the numeral 58. This fluid material from

the dispenser will be dispensed into the water in the tank 30 and this mixture of deodorant and water can then be discharged to the toilet bowl in the usual manner.

If desired, the nozzle 41 can be rotated on the body member 39 so that the position of the nozzle can be shifted as desired in order to provide a means for helping to regulate the discharge of material 58. Furthermore, by loosening the wing nuts 56, the body member 39 can be rotated so as to provide an additional means of adjusting the device. By disengaging the bolts 55 and nuts 56, the device can be disconnected from the rod 34 so that the device can be readily removed when it is not being used, or also the device can be readily removed when the quantity of fluid 58 therein is to be replenished or replaced.

The parts can be made of any suitable material and in different shapes or sizes.

The member 39 may have a cylindrical formation, or else it may have other shapes such as an oval shape. The nozzle or head 41 may be releasably connected to the body member 39 in any suitable manner, as for example by means of a threaded connection, or by means of a snap-on connection. The body member or dispenser may be made of different materials such as for example polyethylene may be used. The size of the discharge aperture in the nozzle 42 can be of a size to permit the desired quantity of material 58 to be dispensed therethrough depending upon the amount of deodorizing which is required or desired for each discharge of the tank full of water into the toilet bowl. The movable ball 49 provides a valve mechanism which regulates the admission of air through the aperture 50 which in turn controls the flow or discharge of the fluid 58. The numeral 46 designates the intake aperture or orifice. In the horizontal position the orifice 46 is closed and the orifice 50 is open. However, when the float 35 is in the lowered or broken line position of Figure 1, the dispenser is in a tilted position which is approximately 45 degrees off the horizontal so that the ball 49 closes the opening 50 and permits a predetermined amount of fluid to be discharged into the toilet tank. This cycle is repeated until the dispenser is empty at which time it can be refilled.

It is to be noted that the present invention permits a housewife or other person to readily install the dispenser in any standard or conventional toilet without requiring special tools, and suitable instructions for installation may be included on an instruction sheet which is sold with the device. By making the disinfectant container from polyethylene or the like, it will be non-breakable, and it will not be effected by corrosion so that it will last indefinitely. Furthermore, the construction permits the device to be readily adjusted to a plurality of different positions and this permits a means whereby the desired quantity of material can be discharged, and any desired or suitable type of disinfectant or deodorizing agent can be used.

Thus, it will be seen that with the present invention a small amount of disinfectant or deodorizing solution can be added to the water in the tank 30 of a conventional toilet. The disinfectant or deodorant solution is automatically discharged into the tank water, and as the float 35 follows the water level, the dispenser will be tilted downward so that the fluid will be dispensed or discharged. The material 58 may have germicidal properties and may consist of any suitable material such as soluble pine oil disinfectant, mixed cresols, sodium orthophenyl-phenate or the like.

We claim:

1. In combination with a flush tank having a float mounted on a tiltable float rod, a dispenser mounted on said float rod, said dispenser comprising a container member for containing fluid to be discharged from said dispenser, said container member having a discharge nozzle mounted thereon, said container member tilting with said float rod to dispense a portion of the contents of said container member through said discharge nozzle, valve means on said dispenser, conduit means providing communication between the interior of said container member and the atmosphere, said valve means obstructing said conduit means in the tilted position of said float rod to prevent entrance of air into said container member.

2. In combination with a flush tank having a float mounted on a tiltable float rod, a dispenser mounted on said float rod, said dispenser comprising a body portion, a partition near one end of said body portion dividing said body portion into first and second compartments, a horizontally extending discharge nozzle mounted on the other end of said body portion in communication with said first compartment, said partition having therethrough a first passageway providing communication between said first and second compartments, said body portion having a second passageway providing communication between said second compartment and the atmosphere, and movable valve means in said second compartment, said body portion tilting with said float rod to dispense a portion of the contents of said first compartment through said discharge nozzle, said movable valve means obstructing the first passageway to prevent the entrance of air into the first compartment when the dispenser is tilted.

3. The combination as defined in claim 2 wherein said movable valve means comprises a ball, said ball obstructing said second passageway when the dispenser is in a generally horizontal position.

4. The combination as defined in claim 2 wherein said nozzle is rotatably mounted on said body portion around its horizontal axis.

5. A dispenser for use in combination with a flush tank having a float mounted on a tiltable float rod, said dispenser comprising a body portion, a partition at one end of said body portion dividing said body portion into first and second compartments, a horizontally extending discharge nozzle mounted on the other end of said body portion in communication with said first compartment, said partition having therethrough a first passageway providing communication between the said first and second compartments, said body portion having a second passageway providing communication between the second compartment and the atmosphere, movable valve means in said second compartment, and bracket means for mounting said dispenser on said tiltable float rod so that said body portion tilts with said float rod to dispense a portion of the contents of said first compartment through said discharge nozzle, said movable valve means obstructing the first passageway to prevent entrance of air into the first compartment when the dispenser is tilted.

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