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DEODORANT AND ANTISEPTIC DISPENSER

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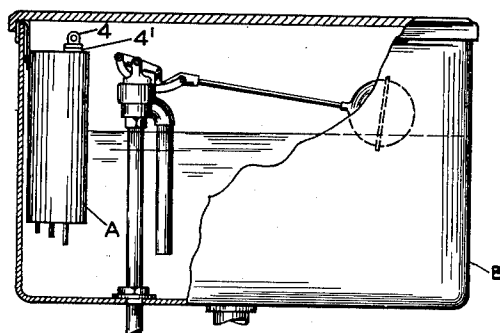


FIG. 1

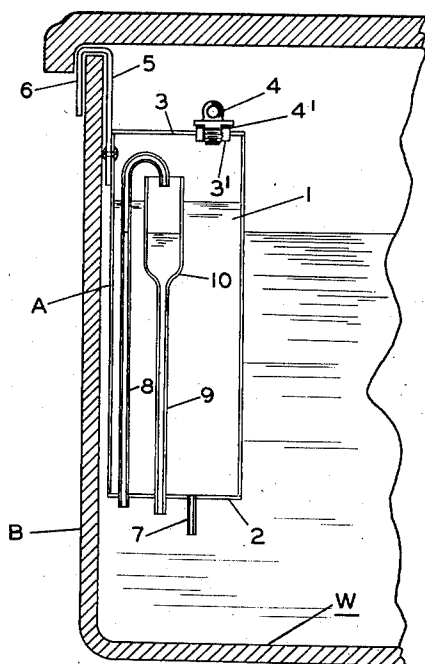


FIG. 3

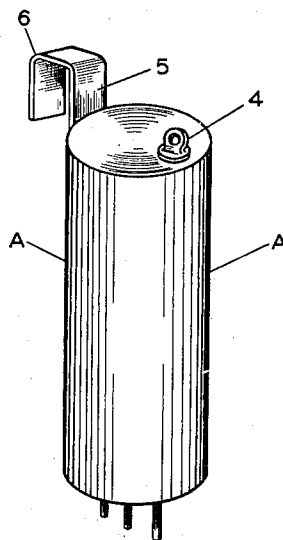


FIG. 2

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DEODORANT AND ANTISEPTIC DISPENSER

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This invention relates generally to deodorant and antiseptic dispensers, and, more particularly, to a certain new and useful improvement in dispensers for automatically injecting a sanitizing and deodorizing solution into toilet bowls and the like.

It is the primary object of the present invention to provide a dispenser of the type stated which is compact, inexpensive, and simple to manufacture, which may be readily installed in fully concealed position within the flush tank of a toilet, which may be conveniently and quickly filled, when empty, which embodies no moving parts to become clogged, broken, or inoperative, and which is highly efficient in the performance of its intended functions.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawing:

Figure 1 is a reduced perspective view, partly broken away and in section, of a toilet flush tank equipped with a dispenser constructed in accordance with and embodying the present invention;

Figure 2 is a perspective view of the dispenser;

Figure 3 is a longitudinal sectional view of the dispenser in installed position.

Referring now in more detail, and by reference characters to the drawing, which illustrates a preferred embodiment of my invention, the dispenser A includes an open-topped tubular container constructed preferably of non-rusting metal or other suitable material and provided with preferably integral flat bottom and top walls 2, 3, the latter having an internally threaded collar 3' for receiving an air-tight closure-plug 4, preferably provided with a rubber gasket-ring 4'.

Riveted or otherwise suitably secured upon the outwardly presented side face of the container 1 adjacent its upper end, is an upwardly extending suitably offset strap-metal hanger 5 bent over at its upper end in the provision of a hook 6 for clipwise engagement over the upper marginal portion of a toilet flush tank B, for dependently supporting the container therein, as best seen in Figure 1.

Fixed in, and extending through, the bottom wall 2, is a small bore drip tube 7 which, at its upper end, opens flush upon the inner face of the bottom wall 2, and at its lower end, opens downwardly into the flush tank B.

Also fixed, at its lower end, in, and extending

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through the bottom wall 2, and opening downwardly into the flush tank B, is a vent-tube 8, and a drain-tube 9, the latter being diametrically enlarged at its upper or interior end in the provision of a funnel-like bell, or catch-basin, 10, and the vent-tube 8 is arcuately bent over at its upper end and projects downwardly for a short distance into the bell 10. It should also be noted that the lower or discharge end of the vent-tube 8 is located in a plane substantially spaced upwardly from the plane of the discharge end of the drip tube 7, and the discharge end of the drain-tube 9 is located in an intermediate plane.

In use, the closure plug 4 is removed and the dispenser A filled with a suitable deodorant or antiseptic fluid of any type commonly employed for this purpose, while holding the finger over the end of the drip-tube 7, and the plug 4 tightly screwed back into place. The dispenser A is thereupon suspended in a toilet flush tank B, substantially as shown in Figure 1, the finger being removed from the end of the drip-tube 7 just before the lower end of the dispenser A is plunged into the water of the flush tank B. For purposes of explanation, it may be assumed that the flush tank B is filled to its normal level with water, in which case the dispenser A will project at its lower end below such normal water level, and the discharge end of the drip-tube 7 will be located in upwardly spaced relation to the bottom wall of the flush tank B, substantially as shown in Figure 3. In this connection, it will, of course, be evident that the combined length of the container 1 and hanger 5 should be such as to accomplish this result.

Under such circumstances, the water in the flush tank B will rise in the tubes 8, 9, until hydrostatic equilibrium is established. Since the closure plug 4 tightly seals the container 1, the effect will be that of blocking the normal flow of venting air through the tubes 8, 9, into the interior of the dispenser A, and the flow of liquid through the drip tube 7 will cease.

Subsequently, when the flush tank B is flushed, the water level therein will quickly drop below the deodorant dispenser A, carrying with it the previously dispensed quantity of deodorant fluid, so that, as the toilet is being flushed, a quantity of deodorant and antiseptic solution will be fed, directly with the flush water, into the toilet bowl (not shown). As the water level in the flush tank B drops, the vent-tube 8 becomes unblocked, as it may be said, and the column of water therein begins to rise. An instant later, the drain-tube 9 becomes unblocked and the

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water may rise somewhat therein, but, because of the relatively large size of the bell 10, will not overflow into the interior of the dispenser A. Meanwhile, the column of water in the vent-tube 8 will have discharged itself into the bell 10, and the interior of the dispenser will thereby become vented to atmosphere, whereupon, the drain-tube 9 will immediately discharge its contents downwardly into the flush tank B and, simultaneously, deodorant liquid will begin to drip through the tube 7. This discharge flow will continue until the flushing action has been completed and the initial water level in the flush tank B is restored.

It will, therefore, be evident that during the entire flushing cycle, fresh deodorant liquid is being injected into the flush water to fortify the action of the initially injected quantity of deodorant liquid which dripped outwardly from the drip-tube 7 as the dispenser A was being installed in the tank B, before hydrostatic equilibrium was reached and the initial discharge flow cut off. Then, as the flushing action stops and the flush tank B commences to refill, the dispenser A will continue to drop deodorant liquid into the water which is being stored for the next flushing operation, so that, during the interim, this water also will remain fresh and sanitary. Finally, the water flowing back into the flush tank B will reach the normal water level and flow around the lower end of the deodorant dispenser A. The water will ultimately cut off the flow of air through the tubes 8, 9, and, when hydrostatic equilibrium is again reached, the flow of deodorant liquid will stop, as previously described.

It will thus be evident that the deodorant dispensers of the present invention are not only simple, but are also entirely automatic and without moving parts which may become clogged or broken. In addition, the deodorant dispenser of the present invention operates to inject deodorant and antiseptic liquid into the flush water at several different phases of the flushing operation, so that the water which is being stored in the flush tank is treated as it flows into the flush tank and this same water is provided with an additional treatment of the liquid as it flows out of the flush tank, so that, upon reaching the toilet bowl, a fresh supply of deodorant liquid will be present in the flush water to fortify the action of the previously injected deodorant.

It will further be evident that the deodorant dispenser of the present invention is inexpensive to manufacture and may be readily and quickly installed by any householder without the slightest difficulty.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A deodorant dispenser comprising a container for receiving a quantity of deodorant liquid, a drip-nozzle depending from the bottom of the container, a drain-tube mounted in said container, said drain-tube opening at one end adjacent the top of the container and opening at its other end adjacent the bottom of the container, and a vent-tube extending in, and opening at one end adjacent the upper extremity of, the container into said drain-tube, said vent tube opening at its other end adjacent the lower extremity of the container above the lower end of the nozzle.

2. A deodorant dispenser comprising a container for receiving a quantity of deodorant liquid, a drip-nozzle depending from the bottom of

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the container, a drain-tube mounted in said container, said drain-tube opening at one end adjacent the top of the container and opening at its other end adjacent the bottom of the container, a vent-tube extending in, and opening at one end adjacent the upper extremity of, the container into said drain-tube, said vent tube opening at its other end adjacent the lower extremity of the container above the lower end of the nozzle, and means for removably suspending the container within a toilet flush-tank so that the lower end of the vent-tube is normally blocked by the water in the flush tank when the flush tank is filled to its normal level.

3. A deodorant dispenser comprising an open-topped container for receiving a quantity of deodorant liquid, a downwardly disposed drip-nozzle mounted in and extending through the bottom of the container, a drain-tube mounted in said container, said drain-tube opening at one end adjacent the top of the container and opening at its other end adjacent the bottom of the container, a vent-tube extending through and opening at one end adjacent the upper extremity of the container into said drain-tube, said vent-tube opening at its other end adjacent the lower extremity of the container above the lower end of the nozzle, means for removably suspending the container within a toilet flush tank so that the lower end of the vent-tube is normally blocked by the water in the flush tank when the flush tank is filled to its normal level, thereby preventing water from directly entering the vent-tube, and a closure-cap removably disposed across the open end of the container in air-tight engagement therewith.

4. A deodorant dispenser comprising a closed container for receiving a quantity of deodorant liquid, a downwardly disposed drip-nozzle mounted in and extending through the bottom of the container, a drain-tube mounted in said container, said drain-tube opening at one end adjacent the top of the container and opening at its other end adjacent the bottom of the container, a vent-tube extending through the bottom and opening at one end adjacent the upper extremity of the container into said drain-tube, said vent-tube opening at its other end adjacent the lower extremity of the container above the lower end of the nozzle, and means for removably suspending the container within a toilet flush tank so that the lower end of the vent-tube is normally blocked by the water in the flush tank when the flush tank is filled to its normal level, said nozzle being of relatively small diametral size with respect to the diametral size of the vent-tube.

5. A deodorant dispenser comprising a container for receiving a quantity of deodorant liquid, a drip-nozzle mounted adjacent the lower extremity of the container, a drain-tube mounted in said container, said drain-tube opening at one end adjacent the top of the container and opening at its other end adjacent the bottom of the container, and a vent-tube extending into said container, and opening at its upper end into the upper end of the drain-tube, said vent-tube opening at its lower end exteriorly of the container, and means for removably suspending the container within a toilet flush tank so that communication of the interior of the container to atmospheric pressure through the vent-tube is normally cut off when the flush tank is filled to its normal level.

6. A deodorant dispenser comprising a con-

tainer for receiving a quantity of deodorant liquid, a drip-nozzle depending from the bottom of the container, a vent-tube extending in, and opening at one end adjacent the upper extremity of, the container, said tube opening at its other end adjacent the lower extremity of the container above the lower end of the nozzle, means for removably suspending the container within a toilet flush tank so that the lower end of the vent-tube is normally blocked by the water in the flush tank when the flush tank is filled to its normal level, and a second tube extending upwardly into the container and being co-operatively connected at its upper end to the upper end of the vent-tube for catching and draining away water which is regurgitated through the vent tube as the water in the flush tank lowers, thereby preventing water from directly entering the container and diluting the deodorant.

7. A deodorant dispenser for use with a toilet flush tank, said dispenser comprising a closed container having a bottom wall and means for suspending the container within a flush tank with its lower end submerged when the tank is normally filled, a drip-nozzle depending from said bottom wall, a vent-tube mounted in and extending through the bottom wall opening at its lower end into the flush tank and at its upper end being curved over and being open to the interior of the container, and a drain-tube also extending through the bottom wall and being provided at its upper end with a diametrically enlarged bell opening to the interior of the container and being disposed beneath the curved-over end of the vent-tube for catching any liquid which may discharge therefrom.

8. A dispenser comprising a closed container having a removable filling plug in the upper portion thereof, a drip-nozzle depending from the bottom of the container and opening to the interior thereof, a vent-tube extending in, and opening at one end adjacent the upper extremity of the container, said tube opening at its other end exteriorly of the container above the lower end of the nozzle, and means within the container disposed in juxtaposition to the interior end of the vent-tube and opening exteriorly of the container for catching any liquid which may discharge from the vent-tube.

9. A dispenser comprising a closed container having a removable filling plug in the upper portion thereof, a drip-nozzle depending from the bottom of the container and opening to the interior thereof, a vent-passage forming means extending in, and opening at one end adjacent the upper extremity of, the container, said vent-passage forming means opening at its other end exteriorly of the container above the lower end of the nozzle, and means within the container

disposed in juxtaposition to the interior end of the vent-passage forming means and opening exteriorly of the container for catching any liquid which may discharge from the vent-passage forming means.

10. A dispenser comprising a closed container adapted for disposition in a toilet flush-tank so that at least the lower end of said container will drip down into the water of the flush-tank when the latter is filled with water to its normal level, a drip-nozzle depending from the bottom of the container and opening to the interior thereof, a vent-tube provided in said container and extending outwardly thereof at its lower end for communication with ambient atmosphere when the water level in the flush-tank lowers during flushing action, said vent-tube having a discharge opening at its other end near the top of the container, and a drain-tube extending through the bottom wall of the container and being provided at its upper end with a diametrically enlarged bell opening to the interior of the container and located beneath the discharge opening of the vent-tube to catch any water which may flow upwardly through the vent-tube during flushing action.

11. A dispenser comprising a closed container adapted for disposition in a toilet flush-tank so that at least the lower end of said container will drip down into the water of the flush-tank when the latter is filled with water to its normal level, a drip-nozzle depending from the bottom of the container and opening to the interior thereof, a vent-tube extending in and opening at its opposite ends respectively adjacent the upper and lower ends of the container for communication with ambient atmosphere when the water level in the flush-tank lowers during flushing action, said vent-tube having a discharge opening at its other end near the top of the container, and a drainage member disposed in the container beneath the discharge opening of the vent-tube for receiving liquid which may be discharged from the vent-tube during flushing action.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,987,689	Lewis	Jan. 15, 1935
2,238,935	Gumaer	Apr. 22, 1941
2,372,544	Borman et al.	Mar. 27, 1945

FOREIGN PATENTS

Number	Country	Date
11,169	Great Britain	May 22, 1896