

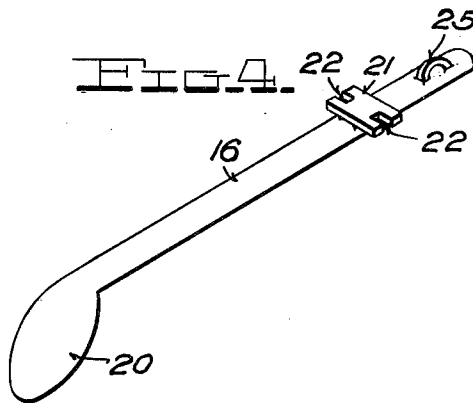
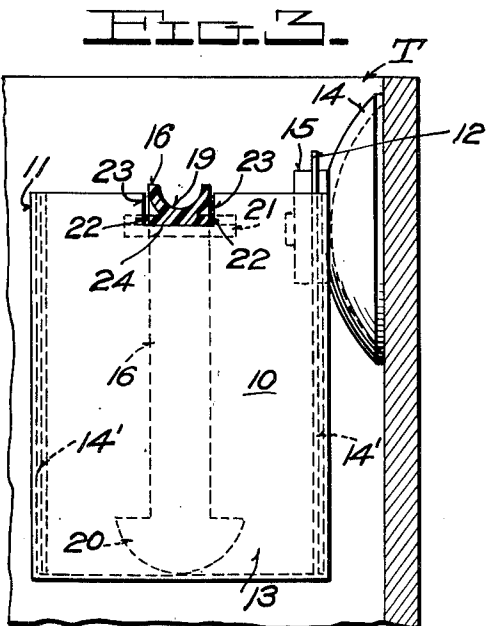
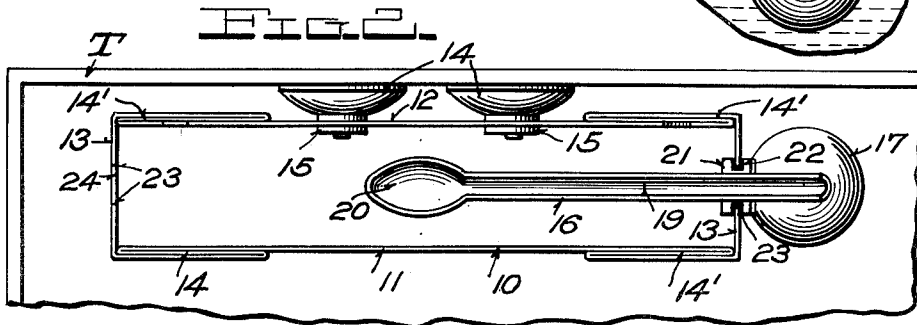
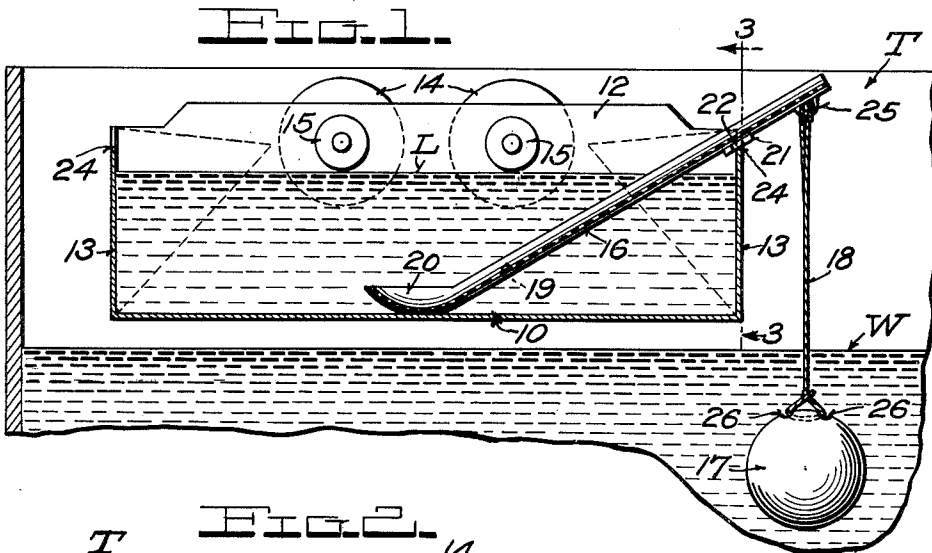
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LEVER MOUNTING MEANS FOR FLUSH TANK STERILIZING DEVICES

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## LEVER MOUNTING MEANS FOR FLUSH TANK STERILIZING DEVICES

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1 Claim. (Cl. 222—358)

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The invention relates to sterilizing devices used in toilet flush tanks or other tanks, and more particularly to improvements in the sterilizing means of my Patent No. 2,021,110, November 12, 1935. In that patent a small tank to hold a sterilizing or disinfecting liquid is positioned in a toilet flush tank above the normal water level therein, the small tank carrying a dispensing means in the form of a lever fulcrumed between its ends on a wall of the sterilizer tank. The long and heavier inner end of the lever is constructed to lift and discharge into the flush tank water a small quantity of the sterilizing liquid each time the flush tank is discharged, the lever being moved to its discharging position by the weight of a float suspended in the flush tank from the short and lighter outer end of the lever.

The object of the invention is to simplify and improve devices of this character and particularly the lever and its mounting means so that the device is less expensive to manufacture and more reliable in operation.

The present preferred embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a vertical section through the upper portion of a flush tank and through the sterilizing tank mounted therein.

Fig. 2 is a top plan view of the parts shown in Fig. 1.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1 looking in the direction of the arrows.

Fig. 4 is an inverted perspective view of the lever.

In the drawings the sterilizing device is shown in the form of an attachment for a tank T from which water is periodically discharged, and said tank may be considered as the usual flush tank for a toilet bowl. It is to be understood however, that the auxiliary tank 10 which holds the sterilizing or disinfecting liquid L may be constructed at the factory as a part of the main tank, and also that the device may be used in connection with tanks other than the usual toilet bowl flush tanks.

The tank 10 is of rectangular shape with an open top, and is shown as formed from a single sheet of suitable metal by bending it to provide front and back walls 11 and 12 connected to end walls 13 by folded corner portions 14.

In order to permit the sterilizer tank to be readily attached to the inner side of either the front or rear wall of the flush tank and at different distances from its end walls as well as at different vertical distances above the normal

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water level, I preferably secure to the rear wall 12 two resilient rubber suction cups 14. These cups may be pressed against the flush tank wall at various points according to the normal water level and to the location of the fixtures within the tank, and will effectively support the auxiliary tank. The cups are preferably formed with bosses 15 which are snapped or forced into somewhat smaller openings in the wall 12.

The means for periodically discharging or dispensing small quantities of the liquid L into the water W comprises a lever 16 which may be fulcrumed between its ends on either of the end walls 13 and a lever actuating member 17 connected to the outer end of the lever by a flexible element 18. While the lever may be made of a light weight metal, I preferably mold it from one of the now commonly used plastics such as synthetic resin. It has a straight body portion formed in its upper side with a longitudinal channel which extends from a cup or spoon-shaped receiver 20 at the inner end of the lever to the outer extremity of the latter. The lever is fulcrumed close to its outer end as shown in Fig. 1 and 2 by providing it with oppositely disposed, laterally projecting, flat lugs 21 having at their ends inwardly extending, rectangular notches 22 adapted to receive the vertical side edges or walls 23 of one of the rectangular notches 24 formed centrally in the upper edge of each of the flat end walls 13 of the tank 10. The lugs or projections 21 may be formed by a single cross bar as shown in Fig. 4 so that the portion between the inner ends of the aligned notches 22 will rest and rock upon the bottom of one of the notches 24 as the lever swings or tilts. Such movement is permitted by making the width of the notches 22 slightly greater than the thickness of the walls 13. It will be noted that the depth of the notches 24 is much greater than the vertical thickness of the flat lugs 21, and that there is an effective interlock or interengagement of the relatively deep notches 22 with the flat walls 23. It will be further noted that the width of the notches 22 relative to the thickness of the walls 23 controls the swing or tilt of the lever, so that when the short outer end of the lever has been pulled downwardly to a predetermined extent, the walls of the notches 22 will bind on opposite sides of the walls 23 and stop further tilting in that direction. With that construction there is no likelihood of the lever jumping out of its bearing notch 24 when the water is rapidly discharged from the flush tank, and the construction is such that a very simple, inexpensive and effective fulcrum for the

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lever is provided. By forming both end walls 13 with the notch 24, the lever may be readily mounted at either end of the tank according to the location of the fixtures within the tank, and in some flush tanks two of the levers 16 may be used, one at each end, when it is desired to discharge a greater amount of the sterilizing or disinfecting liquid in the water.

The flexible element or suspender 18 is preferably in the form of a waterproof cord or string of nylon or other suitable material. While a hole may be formed in the outer end of the lever for the attachment of the string 18, I preferably mold on the bottom of the lever a loop or eye 25 to which the string may be tied or otherwise secured.

The member 17 which causes the lever to move to its dispensing position as the level of the water W lowers, is disclosed and claimed in my copending application Serial No. 687,814 filed August 2, 1946, now abandoned. It consists of a thin walled, spherical shell preferably formed of some light weight plastic and has the string 18 attached to its top. On opposite sides of the point of the attachment are openings 26, and if desired the string may be passed through these openings and tied or otherwise secured as seen in Fig. 1. The combined weight of the shell, the string and the outer end of the lever is less than the weight of the inner end of the lever, so that the parts will normally be in the position shown in Fig. 1 with the spoon or cup-shaped receiver submerged in the liquid L. The shell 17 is filled with water and the length of the string 18 is such that when the cup 20 rests on the bottom of the tank 10, the shell will be below the normal level of the water in the flush tank. As long as the water-filled shell remains immersed in the flush tank water W, the shell-contained water will be immune to the action of gravity and the parts will remain in the position shown in Fig. 1. However when the tank is flushed, the level of the water W lowers and uncovers even the upper portion of the water-filled shell, the weight of the water in the shell is free to act and will start to tilt the lever. As the water level continues to recede, the weight of the water in the shell added to the weight of the shell, the string and the outer end of the lever, will overbalance the inner end of the latter,

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and the cup 20 will be lifted above the lever fulcrum to cause the liquid in the cup to run down the channel or trough 19 and into the discharging water.

When the flush tank refills the parts will be restored to the positions shown in Fig. 1 with the shell 17 submerged so that it will be at all times full of water and ready for further operation.

While I may use a float such as shown in my above mentioned patent on the suspending string 18, I prefer to use the water-filled shell 17 since it is highly effective and less expensive.

From the foregoing, taken in connection with the accompanying drawing, it will be seen that novel and advantageous provision has been made for carrying out the object of the invention, and while preferences have been disclosed, attention is invited to the possibility of making variations within the scope of the invention as claimed.

I claim:

A liquid dispensing lever for mounting on a liquid tank having an upright wall with a flat upper portion having in its upper edge an upwardly-open rectangular notch, comprising a liquid-conveying lever having intermediate its ends a pair of flat opposed fulcrum lugs projecting laterally in opposite directions, said lugs being formed in their outer ends with rectangular notches aligned transversely of said lever for reception of the vertical side edges of the notch in the tank wall when said lever is disposed in said wall notch, the width of said lug notches being greater than the thickness of said tank wall to permit limited tilting movement of said lever.

EDWIN A. STRATTMAN.

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