Feb. 6, 1962 W. D. WOOLDRIDGE 3,019,451

DISPENSER FOR DISINFECTANT AND THE LIKE

Filed Nov. 2, 1960

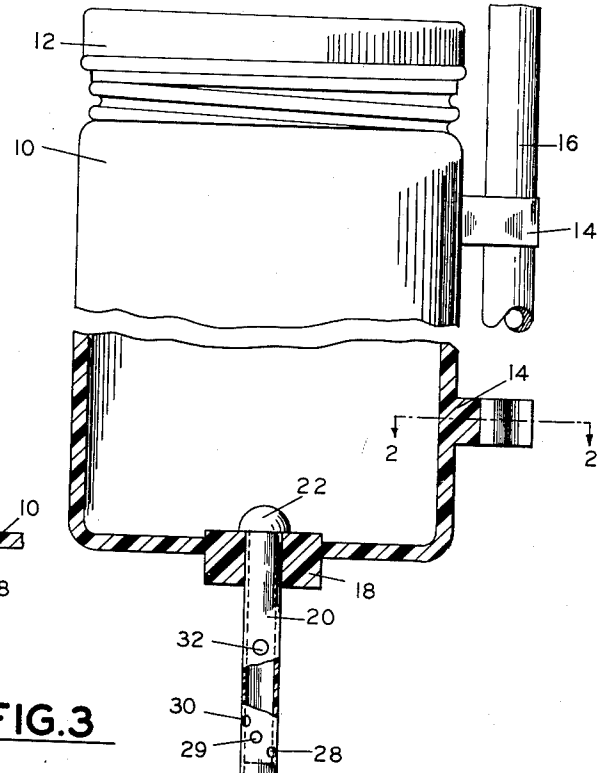


FIG. 1

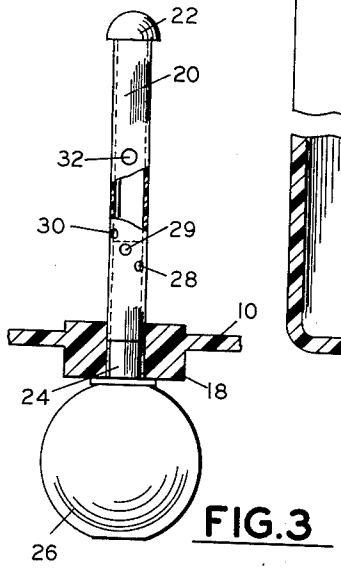


FIG. 3

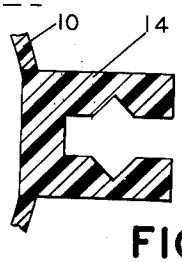


FIG. 2

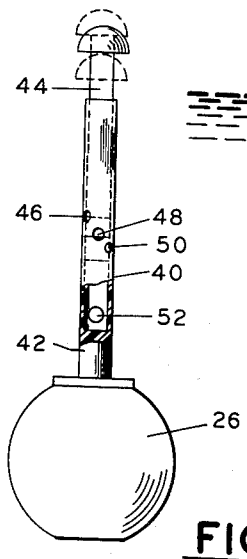


FIG. 4

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DISPENSER FOR DISINFECTANT AND THE LIKE

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2 Claims. (Cl. 4—228)

This invention relates to dispensing, and more particularly to means for intermittently dispensing fluid for example, disinfectant, deodorizers and/or solvents into flush tanks or the like.

Briefly, this invention relates to an automatically operated valve which is adapted to deliver intermittently small quantities of liquid from a container, which deliveries are effected by the changing level of liquid in a reservoir within which the container is positioned. Specifically, means is provided within the valve to adjust and/or control the amount of delivery upon each intermittent cycle of operation.

A primary object of this invention is to provide a dispensing device which is so constructed and arranged that it may be placed and supported within the flush tank of a toilet for supplying the tank with a disinfectant or the like at predetermined intervals. In particular the said intervals are caused by the filling and discharging action of the water in the tank.

Another object of this invention is to provide a device which will dispense disinfectant and the like and is so constructed and arranged that it may be inserted within the tank with the contents dispensed by the fluid actuated valve mechanism.

A still further object of this invention is to provide apparatus which is simple in construction, durable, efficient, and economical to manufacture.

These and other objects of this invention will become more apparent upon further reading of the specification and claims when taken in conjunction with the following illustrations which:

FIGURE 1 is an elevational view partly in cross section, of the dispensing apparatus in its lower position as of this invention.

FIGURE 2 is a partial sectional view taken along the line 2—2 of FIGURE 1.

FIGURE 3 represents a partial sectional view of the valve apparatus of FIGURE 1 in its upper position and further represents the adjustable quantity dispensing feature of this invention.

FIGURE 4 is representative of an additional embodiment in accordance with this invention.

In the operation and description of this invention as shown in FIGURES 1, 2, and 3, a container **10**, composed of a synthetic resin for example polyethylene, includes a removable closure **12** for admitting disinfectant, deodorizers, and/or solvents therein. Brackets **14** are designed for clamping action to a vertical member within a flush tank, for example the overflow pipe **16**. Terminating at the lower end of the bottle or container **10** is an enlarged bearing surface **18** having an opening there though and adapted to receive outer sleeve **20**. The opening in bearing surface **18** is adapted to permit longitudinal movement of sleeve **20** into and out of the bottle or container **10**, as liquid level **21** changes. Sleeve **20** is preferably hollow as shown and is capped by member **22** which limits its movement downward. Terminating the lower end and

movable within sleeve **20** is the inner stem **24** which is of solid material, such as a thermoplastic or the like. Fixably attached to the lower inner stem **24** is float member **26**. Attachment is made within an inner sleeve **27** of the float and secured either by glue or a friction fit. Longitudinally spaced along sleeve **20** is a multiplicity of openings **28**, **29**, **30** and **32** as shown. These openings are adapted to permit entry of disinfectant fluids normally within bottle **10** when in the upper, inside position as shown in FIGURE 3. The ability of inner stem **24** to be frictionally and movably engaged within sleeve **20** permits its longitudinal adjustment therein to open or close all or parts of ports **28**, **29**, and **30** and hence permit a degree of adjustability of the quantity of disinfectant or the like. This is best described in FIGURE 3 wherein the top of inner sleeve **24** as shown in the dotted line is placed immediately above the opening **29** to close that port and lower port **28** and hence regulate the quantity of disinfectant.

In embodiment of FIGURE 4, upper sleeve **42** is adapted to be rigidly fixed with float **26** and includes inner stem **44** having cap **22**. As shown by the dotted lines the inner stem and cap are movable to adjust the quantity of disinfectant entering into the inner chamber of sleeve **42** through openings **46**, **48**, **50** and **52**.

Although this invention has been described with reference to specific and referred embodiments, it will be apparent, however, that many modifications can be made without departing from the spirit and scope of the invention. Accordingly, this invention should be considered not to be limited to the embodiment herein described, but should be limited only by the scope of the appended claims.

What is claimed:

1. A device of the class described; a fluid container secured to a vertical overflow pipe within a flush tank, said container having a removable closure at the top end, and a valve seat at the lower end, a valve stem slideably mounted in said valve seat, said stem including an outer sleeve terminating its upper end with a cap inside said container, longitudinal perforations in said sleeve, a lower solid stem attached to a float outside said container, and adjustable within said sleeve with respect to said perforations to control the amount of said fluid in said sleeve.

2. A device of the class described; a fluid container secured within a flush tank, said container having a removable closure at the top end, and a valve seat at the lower end, a valve stem slideably mounted in said valve seat, said stem including an outer sleeve terminating its lower end with a float outside said container, longitudinal perforations in said sleeve, an upper solid stem terminating its upper end with a cap inside said container, said stem adjustable within said sleeve with respect to said perforations to control the amount of said fluids in said sleeve.

References Cited in the file of this patent

UNITED STATES PATENTS

1,321,357	Bates	Nov. 11, 1919
2,853,715	Ratcliffe	Sept. 30, 1958

FOREIGN PATENTS

16,210	Great Britain	Sept. 10, 1892