Nov. 9, 1937. J. D. KEILLOR 2,098,294

DEODORIZER

Filed Jan. 2, 1937

Fig. 1.

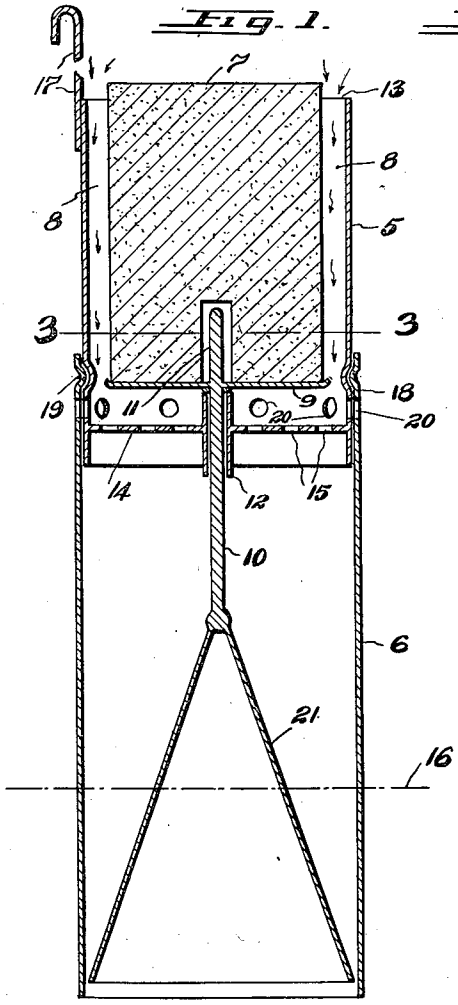


Fig. 2.

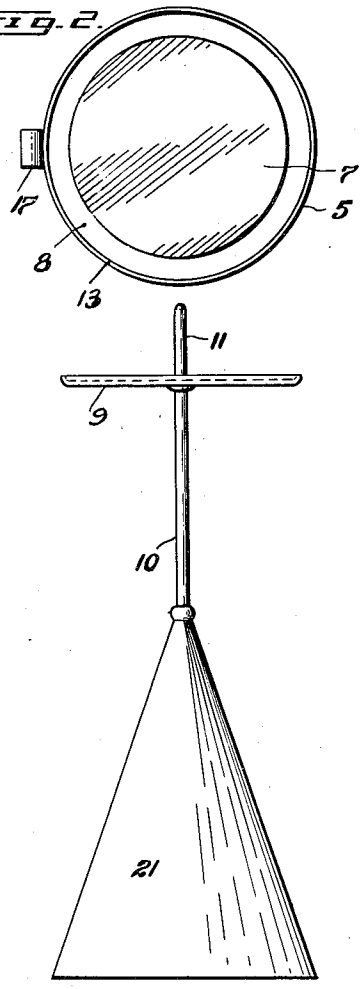


Fig. 4.

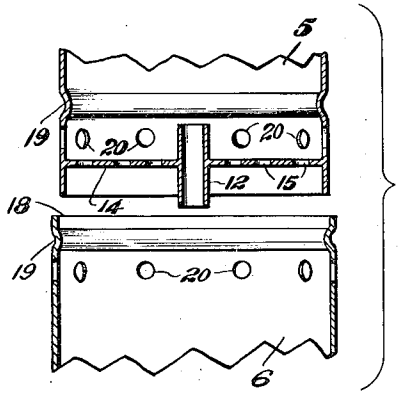


Fig. 3.

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DEODORIZER

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11 Claims. (Cl. 4—228)

The invention relates to a deodorizer for attachment to a flush tank of a closet in order to disseminate a disinfectant in conjunction with the flushing of the closet.

The invention comprehends a simple and reliable attachment for a closet whereby a toilet room may be kept in a disinfected or perfumed condition. A distinctive feature of construction resides in the provision for regulating the amount of the disinfectant material diffused.

The invention essentially consists of an open-ended cylinder positioned vertically in the flush tank with its lower end submerged in the water in the filled condition of the tank. Within the top portion of the cylinder is seated a disinfectant chemical compound in the form of a cake or solid mass. The compound is composed of well known ingredients which are for the purpose of this invention combined into a loosely packed cake or brick that disintegrates of its own volatility when exposed to air.

The cake or brick is made a less width than the bore of the cylinder to provide a circumferential air passage leading to a storage chamber formed by a lower portion of the cylinder. Discharge openings enable the vaporized disinfectant to pass into the tank. These discharge openings are controlled by constructing the cylinder in two parts so that one part may be turned with respect to the other part. To compensate for disintegration of the cake of disinfectant it is elevated by a float mechanism.

Referring to the drawing: Figure 1 is a vertical sectional elevation of the deodorizer.

Figure 2 is a top plan thereof.

Figure 3 is a fragmentary vertical section depicting the junction of the two parts of the cylinder, which parts are shown separated.

Figure 4 is a vertical view of the float mechanism.

Like numerals of reference indicate corresponding parts in each of the figures throughout the drawing of the invention.

The practical embodiment of the invention herein illustrated, comprises a cylinder composed of a top part 5 and a bottom part 6. The top part is open at both ends and contains the cake or brick of disinfectant 7 which is of sufficiently less diameter to provide a circumferential air passage 8.

The cake is seated on an imperforate tray 9 rigidly mounted on the central vertical rod 10 of which a portion 11 projects above the tray and is lodged in a hole in the bottom of the cake to preclude its displacement. The portion of the rod below the tray is vertically slidable in a sleeve 12 forming a guide therefor, of which the top serves as a rest for the tray in order to sustain the cake at such an elevation that its top portion protrudes slightly above the upper edge 13 of the container 5 aforementioned.

The sleeve 12 is carried by the lower end of the said container. For this purpose it is preferred to employ a horizontal perforated plate 14 suitably united to the lower portion of the container. The perforations 15 place the container in communication with the bottom part 6 of the cylinder which forms the storage chamber for vaporized disinfectant.

The cylinder is vertically suspended in a conventional flush tank at such an elevation that the bottom part 6 that forms the storage chamber is partly immersed in the water to a depth as is indicated by the broken line 16 in Figure 1. The means employed to suspend the cylinder may and will preferably take the form of a hanger strap 17 rigidly secured to the container 5; other means, however, may obviously be substituted without departing from the spirit and scope of the invention.

The storage chamber 6 is open at both ends and the upper end 18 thereof is fitted over the lower end of the container and is of a loose fit so as to permit it to be turned about the same. Retaining means are shown at 19 to preclude displacement of the interfitting portions of the container and the storage tank, which means consist of interlocked circumferential beads formed at the junction of these parts.

Correspondingly spaced holes 20 are supplied in the walls of both the container and the storage tank, which holes are located between the tray 9 and the plate 14. By turning the storage tank the discharge passages provided by the holes may be reduced so as to regulate emission of vaporized disinfectant.

The purpose of making the rod 10 slidable is so that it may be elevated by a float 21, which is depicted as an inverted cone-shaped member guided in the lower end of the storage tank and rendered buoyant by entrapped air as will be well understood.

In the use of the deodorizer, as the chemical cake vaporizes the vapor laden air in the surrounding passage descends to the storage chamber therebelow and is dischargeed into the tank by the outlets 20. This discharge is promoted in the flushing of the tank by the rise of water in the lower end of the storage chamber. When the cake is reduced in bulk by evaporation and

thus becomes lighter in weight, the float elevates the tray and thus raises the remainder of the cake to the top of the container. In this manner disintegration is automatically compensated.

What I claim is:—

1. A deodorizer comprising a hollow cylinder vertically arranged and having an open upper end, an imperforate tray horizontally supported therein circumposed by a vapor passage, said tray being adapted to seat a chemical compound for which the surrounding cylinder forms a container having an intervening air passage in communication with the aforementioned vapor passage, and means providing for lateral diffusion of vapor from the cylinder.

2. A deodorizer comprising a hollow cylinder vertically arranged and having open ends, an imperforate tray horizontally supported therein circumposed by a vapor passage, a chemical compound seated on the tray and spaced from the cylinder by an intervening air passage in communication with the vapor passage aforementioned, and means providing for lateral diffusion of vapor below the said vapor passage.

3. A deodorizer comprising a hollow cylinder vertically arranged and having open ends, an imperforate tray horizontally supported therein substantially below the top thereof, said tray being adapted to seat a chemical compound for which the portion of the cylinder therearound forms a container with an intervening air passage in communication with the aforementioned vapor passage and the portion of the cylinder below the tray forms a storage chamber, said cylinder having lateral openings in its storage-chamber portion for the discharge of vapor.

4. A deodorizer comprising a hollow cylinder vertically arranged and having open ends, an imperforate tray horizontally supported therein substantially below the top thereof, said tray being adapted to seat a chemical compound for which the portion of the cylinder therearound forms a container with an intervening air passage in communication with the aforementioned vapor passage and the portion of the cylinder below the tray forms a storage chamber, said cylinder having lateral openings in its storage-chamber portion for the discharge of vapor, and means for controlling said openings.

5. A deodorizer in accordance with claim 1, in which means are provided to elevate the seat to compensate for evaporation of the chemical compound.

6. In a deodorizer, a supporting unit, a tray vertically slidable therein, and a float attached to the tray to control the elevation thereof.

7. In a deodorizer, a supporting unit, a tray disposed therein for vertical movement, a depending rod carrying the tray and slidably mounted in said supporting unit, and a float attached to the lower end of the rod.

8. In a deodorizer, a cylinder having open ends, a tray disposed therein for vertical movement, means for supporting the tray in a vertically slidable manner, and a float lodged in the cylinder and carried by the tray.

9. In a deodorizer, a supporting unit, a tray disposed therein for vertical movement, a rod rigidly depending from the underside of the tray, a cone-shaped float having its apex attached to the lower end of the rod, a sleeve slidably supporting the rod, and a transversely extending plate carrying said sleeve and attached to the aforesaid supporting unit, said plate having apertures therein for passage of vapor.

10. In a deodorizer, a vertically arranged cylinder having open ends and a series of circumferential vapor discharge openings, a tray for seating a chemical compound, said tray being disposed in the cylinder and being surrounded by an intervening vapor passage above said vapor discharge openings, and means for regulating said vapor discharge openings.

11. The combination with a flush tank, of a vertically arranged cylinder including an upper part having a series of circumferentially arranged holes in the vicinity of its lower end and forming a container for a chemical compund, a vertically slidable tray in said upper part providing an intervening passage leading to said holes, said tray being adapted to seat the chemical compound; said cylinder also including a lower part turnably interfitted with the bottom portion of said upper part and held against vertical displacement, said lower part having a series of circumferential holes in the vicinity of its upper end spaced to register with the holes in the aforesaid upper part, said lower part being arranged in the flush tank with its bottom end portion immersed in the water of the flush tank, and a float operably lodged in the said lower part and carried by the aforesaid tray.

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