

Jan. 13, 1959

M. G. STEELE  
DEODORANT DISPENSER

2,867,866

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2 Sheets-Sheet 1

FIG. 1.

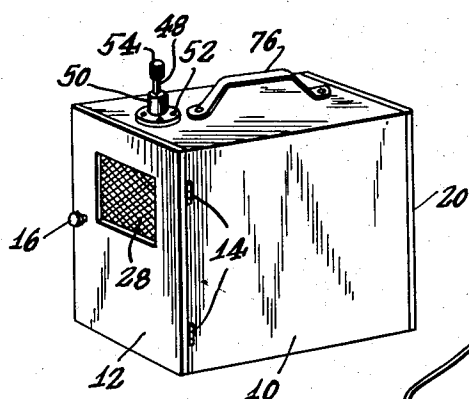


FIG. 2.

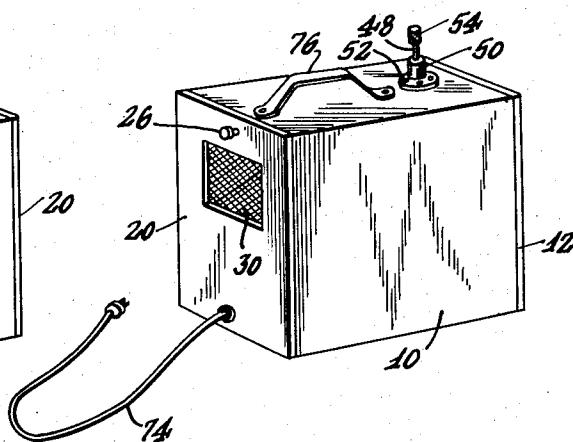


FIG. 3.

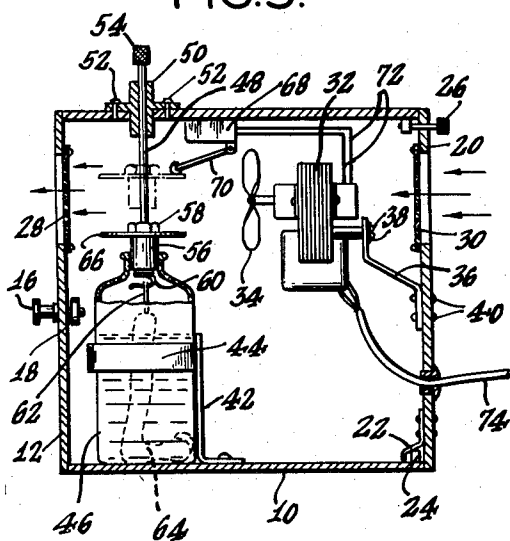
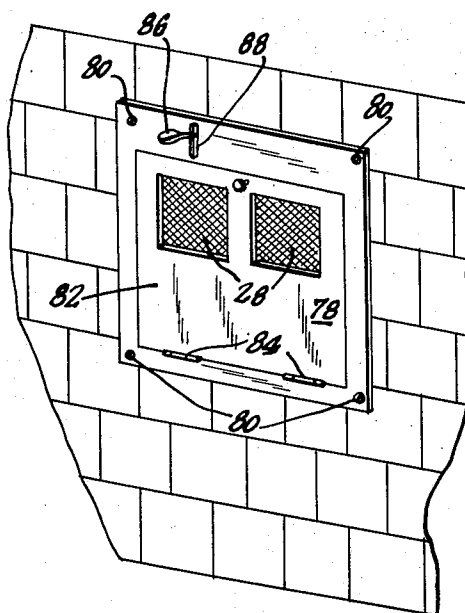


FIG. 4.



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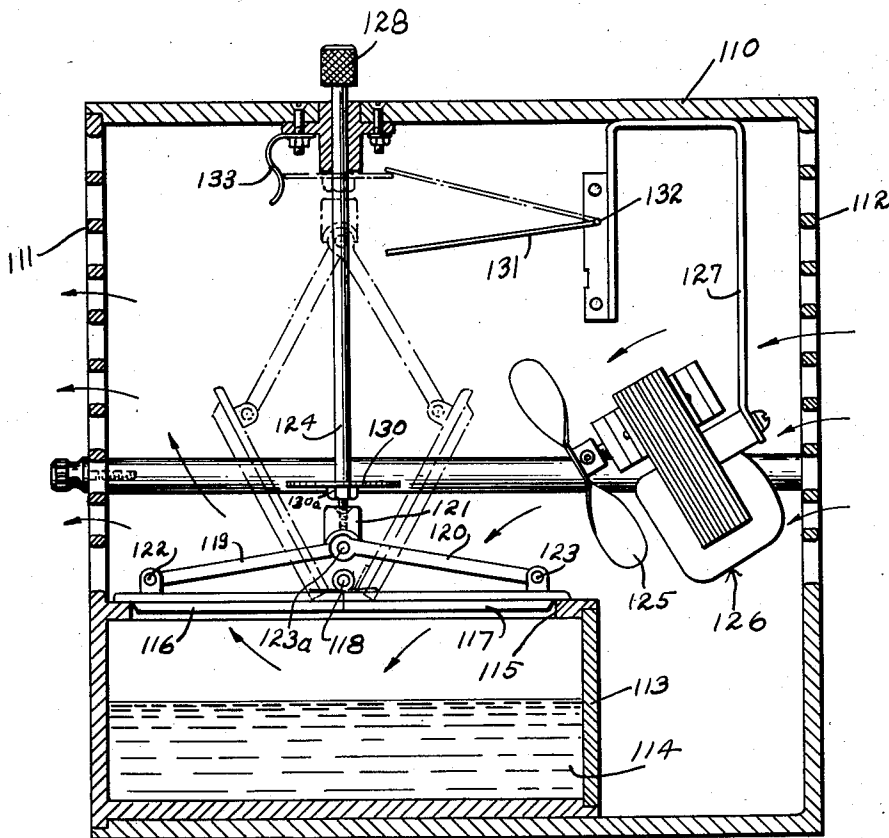
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FIG. 5.



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## DEODORANT DISPENSER

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1 Claim. (Cl. 21-126)

My invention relates generally to the use of volatile deodorizing agents, and is directed particularly to means for vaporizing liquid deodorants such as are commercially available under the trade names of "Air Wick" and "Wizard Wick." These deodorants are generally dispensed from a glass bottle containing an absorbent wick mounted on a wire frame extending vertically down through the bottle. When the bottle cap is removed, the end of the wire frame is accessible and may be pulled upward, thus exposing a portion of the wick to the surrounding air. The liquid in evaporating into the air from the wick acts as an effective destroyer of offensive odors and also scents the air pleasantly.

The time required to completely dispel odors in a given enclosed space depends to a considerable extent on the amount of projection of the wick from the bottle. The maximum exposure of the wick is normally about two and one-half inches above the bottle opening. With such a limited exposure, the amount of deodorant dispensed at a given time is limited and a comparatively long time is required to deodorize a given enclosed space. This has the disadvantage that the deodorant bottle is often left open much longer than necessary, thus wasting some of the contents. There is also the hazard that the usual slender bottle will be knocked over and broken or its contents spilled. The open bottle, and protruding wick, furthermore, do not present a pleasing appearance. Also the necessity of remembering to close the bottle after its use is obviously an annoyance.

It is accordingly the principal object of my invention to provide a dispenser for deodorants of the character described which overcomes the above mentioned disadvantages and inconveniences of ordinary dispenser bottles.

It is another object of my invention to provide a dispenser of the above nature which accomplishes in a few seconds what the bottle and wick combination alone requires several minutes to do.

A further object is to provide a deodorant dispenser of the above nature which is attractive in appearance and which is readily adaptable to use either at a fixed location in a wall, or in a handy, portable case.

Still another object is to provide a device of the above nature which is easy to manufacture, simple in operation, and effective and durable in use.

With these and other objects in view, there is described herein in conjunction with the accompanying drawings, three forms in which the invention may conveniently be embodied in practice.

In the drawings, wherein like reference numerals denote corresponding parts throughout the several views;

Fig. 1 is a front perspective view showing one form of a dispenser embodying the invention;

Fig. 2 is a rear perspective view of the same;

Fig. 3 is a longitudinal vertical sectional view of the dispenser shown in Figs. 1 and 2;

Fig. 4 is a front perspective view of a modification of the deodorant dispenser adapted for wall use; and

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Fig. 5 is a longitudinal vertical sectional view of another modified form of deodorant dispenser, also embodying the invention.

In brief, my invention comprises a small air circulating fan powered by a suitable electric motor so positioned with respect to the projecting wick of the deodorant bottle that air is forced across the wick, greatly increasing the rate of evaporation. The invention also provides means for energizing the fan driving motor simultaneously with the uncorking of the deodorant bottle. Conversely, it incorporates means for simultaneously returning the wick to the bottle, closing the bottle, and de-energizing the fan motor. This is accomplished by means of a single manually actuated control lever.

Considering now the embodiment of the invention illustrated in Figs. 1 to 3, the numeral 10 designates a housing case having an outwardly swingable front panel 12 connected to said case by hinges 14 and securable thereagainst in closed position by means, for example, of screw knob 16. The screw knob 16 is driven into a tapped member 18 fixed against the inner surface of the case 10.

The housing case 10 is provided with a rear panel 20 removably fixed thereto, as by means of a bottom hook member 22 located at the lower inside of said rear panel and cooperative with a latch block 24 fixed against the inside of the bottom of the housing, and a second screw knob 26 and cooperative member at the upper end of said door.

In each of the panels 12 and 20 provision is made of small grill openings 28 and 30, respectively, located at the level of a fan motor 32 having a fan blade 34. The fan motor 32 is mounted against the rear panel 20, for accessibility and convenience in lubricating, by means of a motor support bracket 36, said bracket being interconnected between said motor and said rear panel by means of machine screws 38 and 40.

Near the front of the housing case 10, and fastened against the bottom thereof, is a bottle holding support member 42 to which is attached a flexible U-shaped spring clip 44. A bottle 46 of commercially available deodorant may be installed in the position shown and held in place by the U-shaped spring clip 44.

In vertical alignment with the mouth of the bottle 46 is a rod 48 slidable vertically in a slide bearing 50 extending through the top of the housing case 10 and fixed thereto as by means of screws 52. The vertical position of the rod 48 can be controlled by means of a manually operated knob 54 attached to the upper end thereof. Secured to the bottom of the rod 48 is a closure cork 56 which fits the neck of the bottle 46. The cork 56 is fastened to the rod 48 by means of a nut 58 and a combination nut and catch member 60.

Before the bottle 46 is inserted into place, the rod 48 is pulled to its uppermost position by the knob 54, the bottle cap is removed and discarded, and a wire frame 62, to which a deodorant evaporating wick 64 is attached, is pulled up out of the bottle neck and snapped over the small catch member 60.

Also included in the rod and cork assembly between the nut 58 and the cork 56, is a switch actuating member 66 which may be in the form of a circular washer, and which preferably is electrically non-conductive.

Mounted against the upper inside wall of the housing case 10, is a suitable micro-switch 68 so disposed that its actuating roller arm engages the actuating member 66. The micro-switch 68 is connected to the motor 32 by wires 72, and serves to control the energization of said motor. A two-wire cord 74 is connected in series with the motor 32 and the micro-switch 68. For convenience in carrying the device from room to room, a handle 76 is preferably affixed to the top of the housing case 10.

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## Operation

In operation, when the rod 48 is pushed downward, the cork 56 closes the bottle 46 and evaporation from the exposed wick 64 ceases. Conversely, when the rod 48 is lifted upward, the cork 56 is removed from the mouth of the bottle 46 and the evaporating wick 64 attached to said rod is pulled out into the air, into alignment with the fan blade 34. When this is done, the switch actuating member 66 strikes the switch arm 70 to energize the motor 32 and thereby operate the fan, causing a rapid flow of air across the wick 64. Air from the room is drawn in through the rear panel grill 30 and air laden with deodorant passes back into the room through the front panel grill 28. This causes greatly accelerated evaporation of the deodorant. When a suitable deodorizing effect has been produced on the air in a given space, the handle knob 54 may be depressed, simultaneously shutting off the motor and closing the bottle, thereby stopping further evaporation of the deodorant liquid.

## Second form

Fig. 4 illustrates a modification of the device shown in Figs. 1 through 3, adapting it for wall installation. The housing extends into the wall and comprises a wall panel portion 78 adapted to be secured against the wall opening as by mounting screws 80. A single access door 82 having front grills 28 and swingable downwardly on hinges 84 is provided to allow access to the interior of the device for inserting or removing the deodorant bottle, for lubricating the motor, or for servicing the unit generally. The actuating mechanism otherwise is the same as that described in connection with the first embodiment illustrated in Figs. 1 through 3, and is preferably controlled by a lever 86 extending through a slot 88 in the front of the panel 78.

## Third form

In the third form of the invention disclosed in Fig. 5, provision is made of a rectangular cabinet 110 having a front grill 111 and a rear grill 112 in the upper portions thereof.

At the bottom of the cabinet 110, provision is made of a detachable slidable bottom compartment 113 preferably integral with a front panel which may be removed with said panel from the cabinet 110 by sliding it forwardly therefrom.

The compartment 113 contains a liquid deodorant 114 and is provided with a rectangular top opening 115 resting upon which are a pair of flanged lids or baffles 116 and 117, which lids are joined together by a central hinge 118.

The lids 116 and 117 are connected by a pair of links 119 and 120 by means of pivot pins 122, 123.

The inner ends of the links 119, 120 are joined to a common pivot pin 123a connected to a block 121, said block being detachably connected to a vertical lift rod 124 passing upwardly through a bearing in the top of the cabinet 110 and having a knob 128 on the upper end thereof.

Provision is also made of a fan 125 mounted on an inclined axis and driven by a motor 126.

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The fan is mounted in an electrically conductive U-shaped bracket 127 connected to a switch arm 131 which is pivotally mounted in an aperture 132. The free end of said switch arm 131 is engageable by an insulating washer 130 rigidly mounted at the lower end of the lift rod 124 by means of a nut 130a.

Provision is also made of a depending S-shaped spring clip 133 secured to the top of the cabinet 110 for resiliently holding the washer 130 in its uppermost position, as shown in dotted lines, in Fig. 5 of the drawing.

## Operation

In the operation of the third form of the invention, the air delivered from the fan 125 will impinge directly upon the liquid in the container. The open cover lid sections 119 and 120 serve as baffles to guide the air downwardly into the compartment 113 and out of said compartment through the front grill 111, as clearly shown by the arrows in Fig. 5 of the drawing.

While there have been disclosed in this specification three forms in which the invention may be embodied, it is to be understood that these forms are shown for the purpose of illustration only, and that the invention is not limited to the specific disclosures, but may be modified and embodied in various other equivalent forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claim.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

In a rapid evaporating dispenser for a volatile liquid deodorant, a container for said liquid having a reduced upper neck, a detachable stopper mounted in said neck and having a depending hook secured thereto, a wick connected at its upper end to said hook and having its lower end immersed in said liquid, a vertical rod extending upwardly from the top of said stopper for permitting the manual lifting of said stopper from said neck and the exposure of the upper end of said wick above said container, an electric fan above said container facing said wick, and switch means secured to said stopper, operative to close the circuit through said electric fan when said rod is lifted to raised position to cause said fan to blow air for rapidly evaporating said liquid therefrom across the exposed portion of said wick.

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