Oct. 3, 1967 W. J. FASO 3,344,959

DOOR MOUNTED SPRAYING DEVICES

Filed July 29, 1965

FIG. 1.

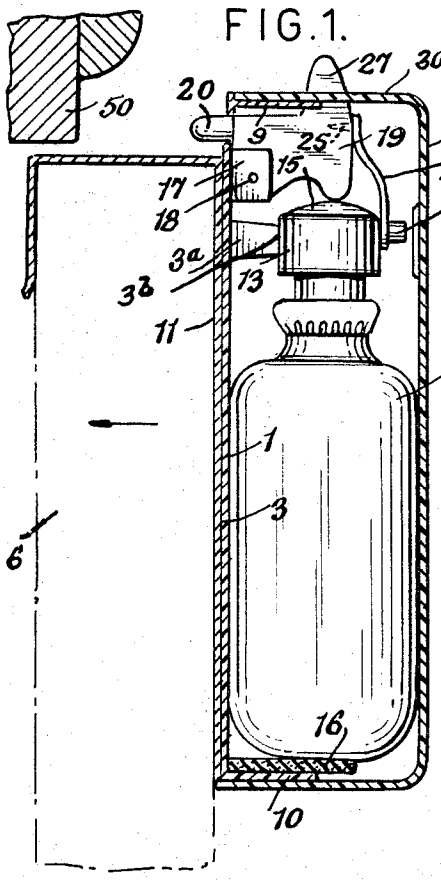


FIG. 2.

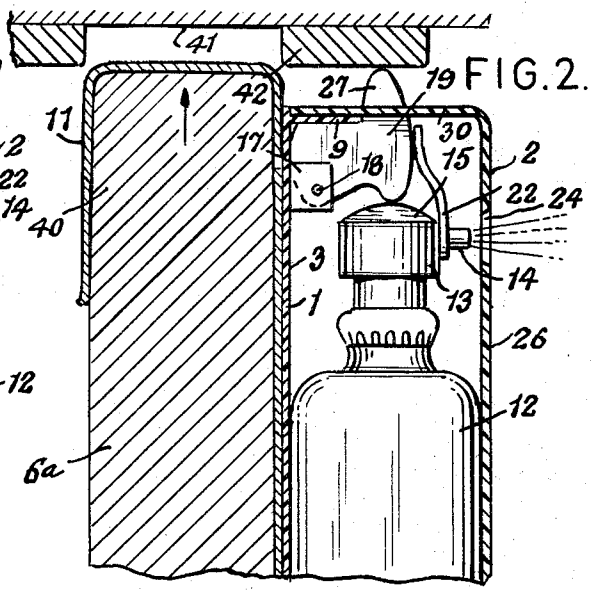


FIG. 3.

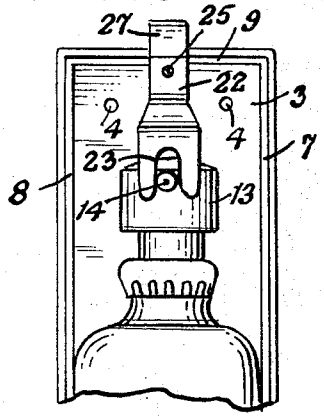


FIG. 4.

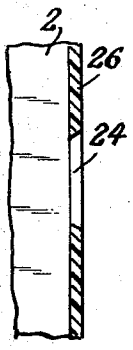


FIG. 5.

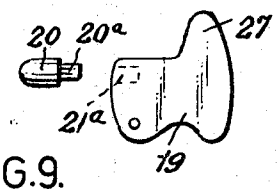


FIG. 6.

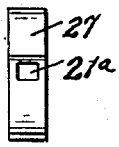


FIG. 8.

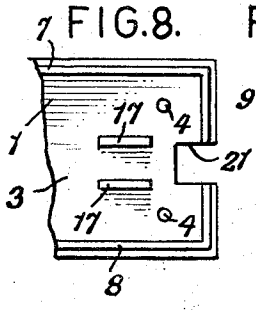


FIG. 7.

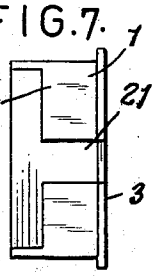


FIG. 9.

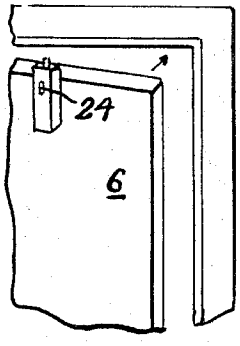
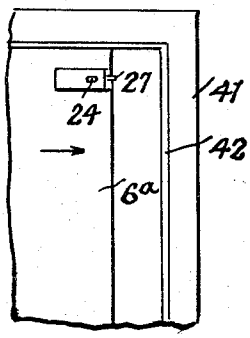


FIG. 10.



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DOOR MOUNTED SPRAYING DEVICES

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ABSTRACT OF THE DISCLOSURE

A spraying device comprising a housing carried by a swinging or sliding door of a room and containing a pressurized spray bottle for a deodorant or other liquid, the bottle having a nozzle directed toward the interior of the room, and the housing containing a pivoted lever having a part extending out of said housing and in a position to be contacted by a part of the door frame to thereby depress the plunger of the spray bottle and spray the contents of the bottle when the door is swung or slid to closing position.

This invention relates to spraying devices and more particularly to a type used for containing room deodorants or other preparations primarily intended to eliminate odors from bathrooms, kitchens or other enclosures, and it is one of the objects of the invention to provide a device of this character which will be automatically operated to spray its contents into a room upon movement of the door thereto and particularly upon the closing movement of the door.

It is another object of the invention to provide a device of this kind which will employ a conventional type of refillable spray bottle which can be refilled, and possibly be filled with the user's favorite deodorant, perfume or other known spraying material. The device also contemplates the use of non-refillable bottles.

It is another object of the invention to provide a device of this character which can be easily fitted on a door of either the hinged or sliding type; which will be automatically operated by door movement to deliver spray into a room each time that the door thereto is closed, and which can if desired, have its contents replaced each time that the same are depleted.

With these and other objects to be hereinafter set forth in view, I have devised the arrangement of parts to be described and more particularly pointed out in the claims appended hereto.

In the accompanying drawing, wherein an illustrative embodiment of the invention is disclosed,

FIG. 1 is a vertical sectional view through a device made according to the invention and applied to a hinged or swinging door;

FIG. 2 shows a similar view of a portion of the device showing the same applied to a sliding door;

FIG. 3 is a front elevational view of the upper portion of the device with the cover of the casing removed;

FIG. 4 is a sectional view of a portion of the front wall of the cover of the casing, showing the spray opening therethrough;

FIG. 5 is a face view of the actuating lever and the plug fitted thereon;

FIG. 6 is an edge view of the actuating lever, with the plug removed and as seen from the left of FIG. 5;

FIG. 7 is an end view of the base member of the casing;

FIG. 8 is a plan view of the upper portion of said base member;

FIG. 9 shows how the device appears when fitted to a hinged or swinging door, and

FIG. 10 shows how the device appears when fitted on a sliding door.

The device includes a housing or casing which can, if desired, be composed of a suitable plastic material and it includes a base portion **1** and a cover member **2** telescopically fitted thereon and held on the base member by its frictional fit thereover. The base member **1** includes a flat rear wall **3** provided with holes **4** through which screws or other fastening elements may be extended to fasten it to the face of a swinging door **6** or to a sliding door **6***a*. The base member **1** of the casing includes a side wall **7** and another side wall **8** as well as end walls indicated respectively at **9** and **10**.

Located behind the rear face of the back wall **3** of the base member **1** and held in place by the fastening screws, is a mounting bracket or clip for use in the manner shown when the device is to be fittted on the top of a hinged door **6** as seen in FIG. 1. Said bracket is of substantially U-shaped and in FIG. 1 it is shown as fitting over the top of the door and holding itself firmly in place by its gripping engagement on the door. When the device is fitted on a sliding door **6***a*, the clip **11** is extended around the forward edge of the door as shown at **40** in FIG. 2.

Fitted within the base member **1** is the spray bottle **12**. This bottle may be one of a number of types and which has its contents ejected through a spray nozzle **14** provided in a spray head or plunger **13**. When the plunger **13** is depressed by pressure exerted on its top **15** the liquid contents of the bottle are ejected out of the nozzle **14** in a known manner. While a pressure type of spray bottle is shown, it will be understood that the spray bottle or similar receptacle can also be one of a number of pressurized or other plunger-operated types.

The bottle fits snugly in the base member **1** of the casing and extends longitudinally of the same as clearly shown in FIG. 1, and it seats upon a resilient pad **16** supported on the lower end wall **10** of the base member. The pad **16** may be composed of sponge rubber or some equivalent resilient material and it forms a shock absorber to absorb shock when an actuator which depresses the spray head contacts the door frame or jamb when the door closes.

Near its upper end the base member is provided on the back wall **3** and on the face thereof, with a pair of forwardly-projecting parallel lugs **17** and a pivot pin **18**, passing through said lugs, forms a pivot for an actuator **19**. Said actuator is in the form of a lever provided at the rear with a projecting plug **20**, which may be composed of rubber or a similar substitute, and which protrudes through an opening **21** provided in the wall **9** of the base member, and said plug projects beyond the rear wall of the base member as shown in FIG. 1, in the case where the device is mounted on a hinged or swinging door. When the device is mounted on a sliding door as shown in FIGS. 2 and 10, the plug **20**, which has a non-round or square shank **20***a*, fitting into a complementary recess **21***a* in the actuator **19**, is removed from the actuator since the actuator is then pivotally moved by the contact of another part of it, consisting of a lug portion **27**, with the door jamb **41** or molding **42** when the door is slid to a closed position. This will be apparent from FIGS. 2 and 10.

Fastened to the forward end of the actuator by the screw **25** is a finger **22** which may be in the form of a flat spring and which is bifurcated at its lower end as shown at **23**. This bifurcated end fits around or straddles the nozzle **14** and forms a positioning means for the nozzle, holding the nozzle from rotative movement and insuring the alignment of the nozzle with a spray outlet opening **24** provided through the front wall **26** of the cover member. The opening **24** may be beveled around its edge as shown in FIG. 4.

As an alternative for the finger **22**, the back wall **3** of the casing can be provided with a projection **3***a* which

has its forward end 3*b* curved to fit the curvature of the head **13**, thereby holding the nozzle against rotative movement and locating the nozzle **14** in alignment with the outlet opening **24**.

The actuator or lever **19** is formed with a lug portion **27** at the top and which, when the device is fitted on a sliding door as shown in FIG. 2, protrudes through opening **21** (FIGS. 7 and 8) in the end wall **9** of the base member and through an aligned opening in the end wall **30** of the cover member. The protrusion of the lug portion **27** is such that when the device is mounted on a sliding door as shown in FIGS. 2 and 10, this part of the actuator **19** will, when the door is slidably moved to a closed position, contact the door jamb or the trim **42** around the jamb. This will pivotally depress the actuator **19**, causing it to exert pressure on the spray head **13** to cause the liquid to be sprayed out of the nozzle **14** and into the room.

The device is easily mounted on either a swinging door or on a hinged door and in the case of the latter in the manner and at the location shown in FIG. 9. When such door is swung to a closed position, the plug portion **20**, contacting with the door jamb **50**, will cause pivotal movement of the actuator **19** to cause the depression of the spray head and result in the spraying of the bottle contents from nozzle **14** through the aperture **24** in the cover **2**.

Similarly, when the device is applied to a sliding door, the lug **27** of the actuator will contact with the door jamb **41** or with the molding **42** around the same, and the actuator will then pivot and depress the plunger or spray head **13** to cause a spraying operation. The device is easily fitted in place on a door and the bottle may be readily removed at any time for re-filling or replacement.

What I claim is:

1. A spraying device comprising, a housing for mounting on a movable door, a conventional type spray bottle mounted in the housing and provided with a spray nozzle, said spray bottle including a plunger effective on its depression to spray the content of the bottle out of the nozzle, a pivoted lever extending over an end of the plunger and adapted by its pivotal movement to depress the plunger, said lever being provided with an arm at one end, said arm being located outside of the housing and in a position to contact with a frame around the door during the closing movement of the door so that upon such closing movement of the door, the lever will be pivotally moved on contact with the frame of the door and will depress the plunger to cause the contents of the bottle to be ejected out of the spray nozzle, and means carried by the lever to engage the nozzle and hold the same in a specific position relative to the lever.

2. A spraying device comprising, a housing for mounting on a door, a spray bottle mounted in the housing, a resilient pad on which the bottle is rested, the bottle including a depressible plunger, a spray nozzle from which the bottle contents are expelled, a lever pivoted in the housing beyond the plunger and adapted to depress the plunger, said lever having a part projecting beyond one end of the housing for contact with a frame around the door when the door is slidably closed, to thereby cause the depression of the plunger, the lever having a second part disposed at substantially right angles to said first part, and means for receiving an extension on the second-mentioned part of the lever to cause said second part to then extend beyond the back of the housing for engagement by a door frame when the door is moved to a closed position.

3. A spraying device for mounting on a door comprising a support for a spray bottle, said bottle having a spray head capable of being depressed to cause spraying of the bottle contents, a nozzle from which the contents are expelled, a movable member on the support and operative to depress the spray head upon the contact of said member with a door frame when the door on which the device is mounted is moved to a closed position, and a bifurcated finger straddling the nozzle and mounted on the member and movable with the same for engaging the nozzle to hold the nozzle in a definite position relative to a spray outlet opening in the support.

4. A spraying device adapted to be mounted on doors that may slide or pivot to closed position comprising, a casing, a plunger-controlled spray bottle mounted therein and operative by the depression of its plunger, a lever pivotally mounted in the casing and operative by its pivotal movement to depress the plunger of the spray bottle and eject the contents of the bottle, the lever having two parts carried by it projecting out of the casing, said parts having contact surfaces disposed at substantially right angles to one another, the pivot for the lever being so disposed that the lever will be pivoted to depress the plunger when one of the parts of the lever will be depressed by contact with a vertical surface on the door frame on a sliding closing movement of the door, and the other part of the lever carried by said lever will also pivotally move the lever to cause it to depress the plunger upon swinging movement of the door to closing position and contact with a vertical surface on the door frame.

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