

May 8, 1962

T. W. HORN

3,033,471

DOOR ACTUATED SPRAY DEVICE

Filed Aug. 11, 1961

FIG - 1

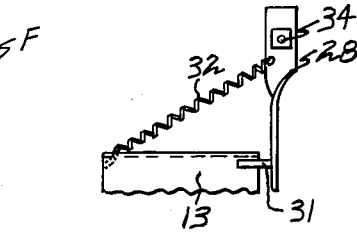
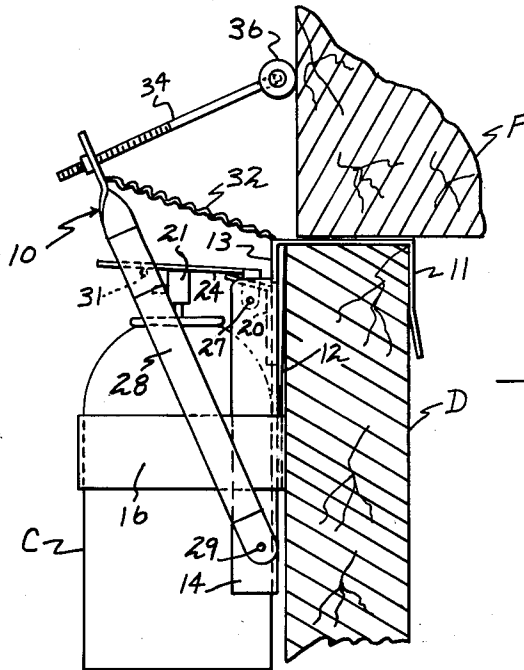


FIG - 4

FIG - 2

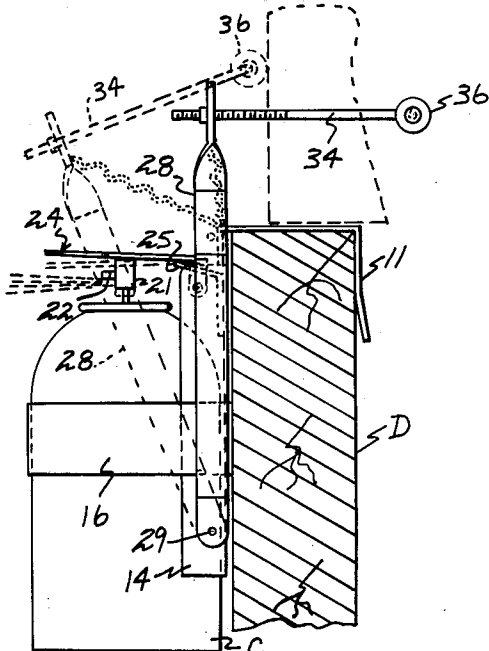
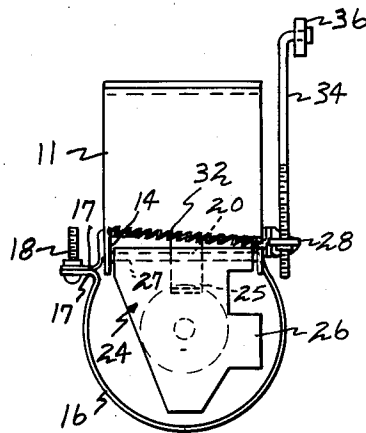


FIG - 3



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3,033,471
DOOR ACTUATED SPRAY DEVICE
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Filed Aug. 11, 1961, Ser. No. 130,787
5 Claims. (Cl. 239-274)

This invention relates to door actuated spray devices and more particularly to door actuated spray devices in which means is provided to actuate a depressible valve of a spray container.

It is an object of the present invention to provide a door actuated spray device which may be easily fitted in secured position over the upper edge of a door to support the device therefrom without the necessity of screws or other securing means fixedly secured to the door.

Another object of the invention is to provide a door actuated spray device having a pivotally mounted plate with support means to position the plate properly over the depressible valve of a spray container, and a lever pivotally mounted adjacent the plate with a detent thereon adapted to engage the upper surface of the plate to depress the plate and valve therebeneath whereby spray is released from the container through a discharge nozzle.

A further object is to provide in combination with a spray container having a depressible valve and a discharge nozzle, a plate pivotally mounted over the depressible valve and having an extension thereon, a lever pivotally mounted adjacent the plate with means urging the lever to a generally vertical position, and a detent on the lever to engage the extension and thereby move the plate downwardly to actuate the valve upon the closing of the door, the detent riding over and free of the extension upon the door being fully closed whereby the valve is released and the spray cut off.

A device embodying features of my invention is shown in the accompanying drawing, forming a part of this application, in which:

FIG. 1 is a side elevational view of my spray device in position on a door showing the door fully closed and the actuating means of the device shown in its forward position immediately after spray has been released from the container;

FIG. 2 is a side elevational view with the door open and the actuating means shown in the rearmost position thereof, the dotted lines showing the position of the actuating means in its forward position;

FIG. 3 is a top plan view of the device shown in FIG. 2 removed from the door; and

FIG. 4 is a fragmentary front elevational view of the actuating means and detent thereon of my spray device.

Referring now to the drawing for a better understanding of my invention, I show a spray device indicated generally by the numeral 10 mounted on a door D with a door frame or facing F over door D.

Device 10 comprises a downwardly opening channel member 11 which is adapted to fit over the upper edge of door D. A spring plate 12 allows device 10 to grip door D and also allows device 10 to be adapted for use with doors of different thicknesses. Channel shaped member 11 can be quickly positioned or fitted over the upper edge of a door D and no other securing means, such as screws, nails or the like, are necessary in order to secure device 10 to a door.

A back 13 extends downwardly from channel member 11 and has side members 14 thereon. A band 16 having ends 17 is adapted to extend about a container C to secure tightly container C to the back 13. Ends 17 are secured by a suitable nut and bolt arrangement 18 as shown in FIG. 3 and are positioned on a side of container C so that indicia may be positioned on the forward

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surface of band 16 without any obstruction from the securing means.

Container C has a depressible valve 21 on the upper end thereof and a discharge nozzle 22 connected thereto.

5 Container C may eject insecticides or deodorants as desired and may be of the aerosol type.

A plate 24 having an extension 26 on one side thereof is pivotally mounted on a shaft 27 secured to side members 14. A support 20 is secured to back 13 and has a resilient lip 25 thereon which engages the undersurface of plate 24 and limits downward movement thereof, whereby plate 24 is positioned accurately. Thus, when a container C is positioned within device 10, the upper surface of depressible valve 21 is positioned barely in contact with the lower surface of plate 24 and thereby is automatically positioned in proper relation to plate 24. Even though the containers employed with my device may be of varying lengths, they are all positioned in the same manner with respect to plate 24 in a minimum of time.

A lever 28 is pivotally mounted at 29 to one of the side members 14 and has a detent 31 secured thereto which engages extension 26 on plate 24 to depress valve 21. Lip 25 positions plate 24 in proper relation to detent 31. Spring 32 urges lever 28 to a generally vertical position as shown in FIGS. 2 and 3. An actuating rod 34 is secured to the upper end of lever 28 and extends in a generally perpendicular relation thereto. A roller 36 is mounted at the rearward end of rod 34 and may be formed of a material such as rubber or wood. Roller 36 is adapted to engage door frame F when the door is closed such as shown in FIG. 1 and does not scratch or scar frame F.

In operation, beginning with the door closed as shown in FIG. 1 and with lever 28 in its forward position and detent 31 out of engagement with extension 26, door D is opened. When roller 36 is removed from engagement with frame F, spring 32 urges lever 28 to its vertical position as shown in FIG. 2. Detent 31 rides under extension 26 and pivots plate 24 upwardly and then rides past the undersurface of extension 26 whereby plate 24 returns to its original position adjacent the upper surface of depressible valve 21 and lip 25. Thus, no spray has been ejected by the opening of door D. Upon movement of the door D to closed position, roller 36 engages door frame F and pivots lever 28. Detent 31 engages the upper surface of extension 26 as lever 28 is pivoted downwardly and depresses plate 24 downwardly which exerts pressure on valve 21 thereby ejecting spray through nozzle 22. This continues only for a short instant or until door D is fully closed. When door D is fully closed, detent 31 has ridden over the front edge and clear of extension 26 and thereby releases plate 24 from further downward pressure. Depressible valve 21 and resilient lip 25 return plate 24 to its original position. The flow of spray from container C thus stops until door D is opened and closed a second time.

From the foregoing, it will be understood that I have provided a spray device which may be easily fitted over the upper edge of a door with a press fit to support the device therefrom without any screws or other securing means which deface the door. Further, I provide a spray device with a pivotally mounted plate to depress the depressible valve of the spray container with a support for the plate positioned so that a container, regardless of its height, may be accurately and easily placed in position within my device by merely positioning the upper surface of the depressible valve on the container barely in contact with the under surface of the plate. Spray is released only during movement of the door in one direc-

tion and is not released when the door is moved in the opposite direction.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

What I claim is :

1. In a spray device having a spray container with a depressible valve and discharge nozzle and adapted to be actuated upon depression of the valve, means to support the spray device from a door, a back extending generally parallel to the adjacent surface of the door, a band on the back for extending around and securing the spray container, a pivotally mounted plate on the back extending over the depressible valve and adapted to engage the valve, a pivotally mounted lever on the back having a detent thereon extending over the plate and adapted to engage the upper surface of the plate, said detent moving the plate downwardly to depress said depressible valve upon movement of said lever in one direction and riding off said plate to allow the valve to be released, and means on said lever to actuate the lever upon moving the door in one direction whereby said plate and depressible valve are actuated to release spray.

2. In combination with a container having a pressurized supply of material therein and a depressible valve for releasing the material, a holder for the container adapted to fit over the upper edge of a door, a plate pivotally mounted over the depressible valve to engage and depress the valve when the door is moved in one direction, a lever pivotally mounted for movement adjacent the plate and having a detent thereon, said plate having an extension thereon disposed adjacent said detent, said detent engaging said extension to move said plate downwardly for depressing said valve when the lever is actuated, actuating means for said lever moving the lever upon movement of said door in said one direction from a rearward position to a forward position, said detent engaging said extension to depress the plate and riding off said extension when said door is moved fully in said one direction to allow said valve to be released, and means to urge said lever to a position out of engagement with said plate whereby upon moving the door in the opposite direction the lever moves from its forward position to its rearward position.

3. In combination with a spray container having a pressurized supply of material therein and a depressible valve for releasing the spray, a holder for the container fitting over the upper edge of a door, a plate pivotally mounted over the depressible valve to engage and depress the valve when the door is closed and having an extension on one side thereof, a lever pivotally mounted adjacent the plate and having a detent thereon adjacent said extension and moving said plate downwardly for depressing said valve when the lever is actuated, spring means connected to said lever continuously urging said lever from a forward position to a rearward position, actuating means connected to said lever and adapted to engage a facing for said door upon closing the door, said actuating means pivoting said lever when the door facing is engaged to move said detent in contact with said plate extension

and thereby depress said valve, said detent riding off said extension when the door is fully closed and the lever is in its forward position thereby to release said valve, and said spring means being adapted to return the lever to its rearward position upon opening of said door with said detent riding over the extension.

4. A spray device including a pressurized spray container with a depressible valve and comprising a downwardly opening channel shaped clip member adapted to fit over the upper edge of a door with a press fit to support the device therefrom, a band fitting around the container to secure the container to the device, a generally vertically extending back to which the band is secured, a plate pivotally mounted over the depressible valve and adapted to engage and depress the valve and having an extension on a side thereof, a lever pivotally mounted adjacent the plate and having a detent thereon adapted to engage said extension to move the plate downwardly to depress said valve, spring means connected to said lever continuously urging said lever from a forward position to a rearward position, actuating means connected to said lever and adapted to engage a facing for said door upon closing the door, a resilient stop engaging the underside of said plate to position said plate accurately with respect to said detent, said actuating means extending generally perpendicular to the longitudinal axis of said lever and pivoting said lever when the door facing is engaged to move said detent in contact with said plate extension and thereby depress said valve, said detent riding off said extension when the door is fully closed and the lever is in its forward position thereby to release said valve, and said spring means returning the lever to its rearward position upon opening of said door with said detent riding over the extension and pivoting the plate away from the depressible valve.

5. In a spray device having a pressurized spray container with a depressible valve and discharge nozzle and adapted to be actuated upon depression of the valve, means to support the spray device from a door, a back extending generally parallel to the adjacent surface of the door, a band on the back for extending around and securing the spray container to the device, a pivotally mounted plate on the back extending over the depressible valve and adapted to engage the valve, a pivotally mounted lever on the back having a detent thereon extending over the plate and adapted to engage the upper surface of the plate, said detent moving the plate downwardly to engage said depressible valve upon movement of said lever in one direction and riding off said plate to allow the valve to be released, a resilient support for the plate secured to the back and contacting the undersurface of the plate in supporting relation to position the plate accurately with respect to said detent whereby said container may be easily positioned in proper relation, and means on said lever to cause actuation of the lever upon movement of the door in one direction.

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