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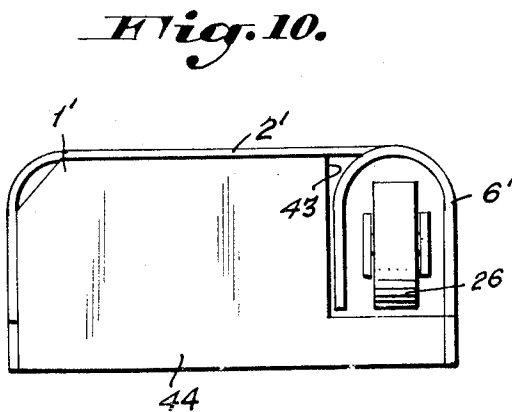
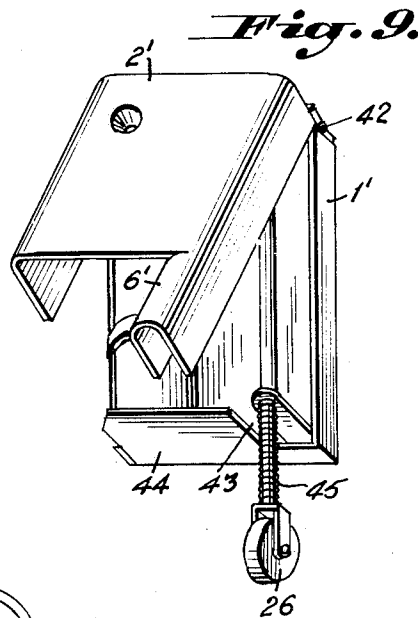
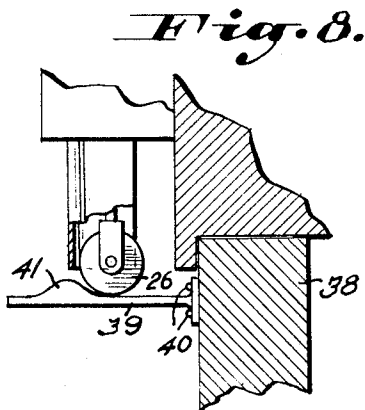
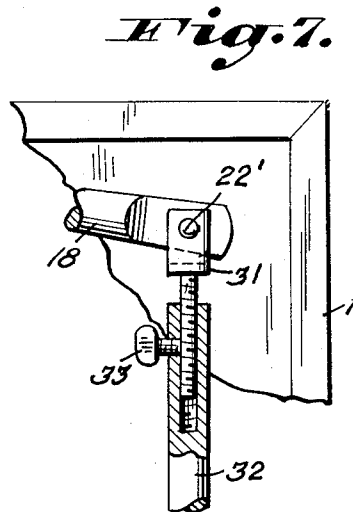
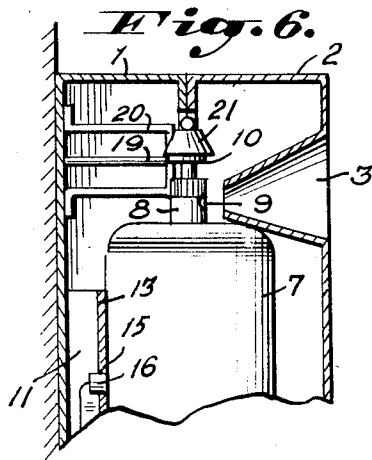
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DOOR OPERATED ATOMIZING DEVICE

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2 Sheets-Sheet 2



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DOOR OPERATED ATOMIZING DEVICE

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10 Claims. (Cl. 299—82.5)

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This invention relates generally to atomizing devices and more particularly to a door operated atomizing device.

The invention as its primary aim and object contemplates the provision of a device of the above character designed to be mounted above or on the top of or at the side of a door jamb either in a vertical or a horizontal position for removably housing an atomizing container filled with either a deodorant antiseptic, insecticide, perfume or other desired chemical preparation, improved means being also provided in connection therewith for automatically operating the atomizing container upon each opening and closing of the door, whereby the enclosure, either a bathroom, cupboard or the like will receive an effective vaporized discharge from the atomizing device.

More particularly, the invention embraces the provision of a device of the above character in which the casing or housing for removably receiving the atomizing container also has mounted therein the upper part of a vertically or horizontally movable door engaging member and a pressure applying lever fulcrumed within the casing and adjustably connected with the door engaging member so that when a movement is imparted to the door engaging member by the edge of a door the pressure applying lever is depressed against the release valve of the atomizing container to effect a discharge from the latter.

A more specific object consists in the provision of a device of the above character designed for removably housing and operating a conventional "Aerosol" bomb or a bomb of the general type disclosed by prior patents to Mobley No. 1,614,532 of January 18, 1927, or Rotheim No. 1,892,750 of January 3, 1933.

Other objects as well as the nature, characteristic features and scope of the invention will be more readily apparent from the following description taken in connection with the accompanying drawings and pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view showing the device applied above a door jamb in position to be operated by the door, only a portion of which latter is shown,

Figure 2 is a front elevation of the improved device with the cover removed,

Figure 3 is a vertical cross sectional view taken on line 3—3 of Figure 2 in the direction in which the arrows point,

Figure 4 is a horizontal cross sectional view

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taken on line 4—4 of Figure 2 in the direction in which the arrows point,

Figure 5 is a fragmentary perspective detail of a portion of a means for effecting the removable mounting of the cover,

Figure 6 is an enlarged vertical sectional detail taken on line 6—6 of Figure 2 in the direction in which the arrows point,

Figure 7 is an enlarged fragmentary elevational detail partly in section of a modified means for adjusting the position of the door engaging roller,

Figure 8 is an elevational detail partly in section showing the device mounted on the inside of a cupboard with an actuating member carried by the door,

Figure 9 is a perspective detail of a modified form of casing with the guard or apron carried by a hinged cover, and

Figure 10 is a bottom plan of the arrangement shown in Figure 9.

Referring now, more particularly, to the accompanying drawings, in which similar reference numerals are employed throughout the several views there is provided a casing made of metal, wood or of any suitable material including a body 1 and a removable cover 2 having an opening 3 which may be in the form of an outwardly discharging funnel. The casing is adapted to be mounted, for instance, within a bathroom at a point above or on a door jamb 4 as by suitable fasteners 5 while depending from the casing is a shield 6 which is carried by the body 1 or cover 2. As shown in Figures 1 to 4 the shield is carried by the body and serves a purpose to be described.

Removably arranged within the casing 1 is an atomizing container 7 which as stated may be of a conventional type known to the trade as an "Aerosol" bomb or of the type disclosed by the United States patents mentioned, namely, 1,614,532 or 1,892,750, which on actuation discharge a gaseous vapor to act as a deodorant, insecticide or the like as desired. The container 7 includes a body having at the top a nozzle 8 having a lateral vapor discharging outlet 9 which is controlled by a depressible actuating valve 10 situated at the top of the nozzle.

In order to properly support and position the container a holder 11 is preferably fixed to the rear wall of the casing near one side wall and includes a horizontal shelf 12 and a curved back 13 supported in spaced relation to the rear wall by the flanged feet 14, the back having an opening 15 therein for receiving a positioning element, for instance, in the form of a stud 16 car-

ried by container 7 which insures of the opening 9 registering with the opening 3. Spring clamps 17 also form a part of the holder and removably embrace the body of the container as shown.

With a view to actuating the container 7, there is provided pressure applying means which preferably includes a lever 18 fulcrumed medially of its ends on a horizontal stud 19 extending from the rear wall of the body 1 and reinforced and supported by a bracket 20, also carried by the rear wall. This arrangement positions one end of the lever over the depressible valve 9 so that when the lever 18 is rocked, a finger or presser element 21 carried by this end of the lever moves downwardly with the lever and depresses the valve. Now in order that the operation of the valve 9 may be effected automatically a rod 22 is adjustably and pivotally suspended from the other end of the lever 18 by a pin 22' and is slidably mounted in the body and through an opening in the bottom thereof being preferably guided in a tube 23 supported in spaced relation from the rear wall by spaced brackets 24. The rod extends into the shield 6 and the lower end is forked as at 25 and has rotatably mounted therein a door engaging weighted roller 26, the lower edge of which projects slightly below the bottom of the shield so as to engage the upper edge of the door 27 when the latter is moved thereunder. The rod 22 is adjustable so that after the casing has been fixed if the position of the roller is not adjusted properly relative to the upper edge of the door, the pin 22' can be engaged in another of the openings 28 while in addition a stop pin 29 is arranged in the desired transverse opening 30 and rests against the top of the sleeve to limit the downward movement of the roller weighted rod.

An alternative means for adjusting the rod is shown in Figure 7 in which the rod is composed of two sections 31 and 32 in adjustable threaded engagement with each other and held against rotation by a set screw 33. When this form is used only one opening 28 is necessary for receiving the pin 22'.

As shown in Figures 1 to 6, the casing body and cover are about the same in depth while the bottom of the body extends outwardly as at 34 to serve as a closure for the lower open end of the cover and to support the shield 6 in spaced relation to the wall of the room. The walls of the body and cover are also flanged inwardly as at 35, the flanges on the side walls of the body having slots 36 for receiving the bayonet lugs 37 on the side wall flanges of the cover, this arrangement serving as a means for detachably connecting the cover 2 to the body 1.

As shown in Figure 8, the device is applied to the inside of a cupboard and inasmuch as the door 38 thereof opens outwardly it is necessary to attach a cam carrying arm 39 to the inner face thereof as by suitable fasteners 40 so that the arm extends laterally inwardly in order that the cam 41 will be positioned to engage the roller on each opening and closing of the door for atomizing the interior of the cupboard.

In Figures 9 and 10 there is shown a slightly modified arrangement of the casing in which the cover 2' is hinged at its upper edge to the upper edge of the body 1' as at 42 while the shield 6' extends from the cover and is accommodated in a recess 43 in the bottom 44 of the body. In this form the walls of the body are of less depth than in the form shown in Figure 1. Otherwise the parts are substantially the same in both

forms. However, it may be preferred to use the adjustable rod arrangement of Figure 7 with the form shown in Figure 9 because the roller carrying section of the rod is free for turning adjustment inasmuch as the shield 6' being carried by the cover 2' would permit of this action when held in open position as shown.

In use, assuming that the parts have been assembled in the manner described in Figures 1 and 2, it is apparent that on each opening and closing of the door 27, the upper edge of the latter strikes the weighted roller 26 moving the rod 22 upwardly and causing the lever 18 to rock so that the element 21 exerts a pressure on the valve 9 of the nozzle 8 resulting in a vapor being discharged through the openings 9 and 3 into the room. On the door passing the roller 26 due to its weight the parts return to the position shown in Figure 2.

It is believed in view of the foregoing that a further detailed description of the operation of the invention is unnecessary. Likewise, it is believed that the advantages of the invention will be readily apparent.

It is also to be understood that the device could be mounted in a horizontal position in which event a spring as shown at 45 in Fig. 9 is utilized to yieldingly hold the roller in an extended position so as to be engaged by the outer side edge of a door near the top.

It is therefore seen that this spring 45 disposed about the rod 32 that supports the roller 26 acts between the fork carrying the roller and the bottom of the casing to normally hold the roller 26 extended and thereby in position to be actuated to effect horizontal sliding movement of the rod 32 and thereby pivot the lever 18 in consequence of the opening and closing movement of the door.

Having thus fully described the invention what is claimed and desired to be secured by Letters Patent is:

1. A device of the character described including in combination, a casing selectively mountable in either a vertical or a horizontal position adjacent a door jamb and provided with an opening in one of the walls thereof, an atomizing container removably mounted within the casing and including an ejector nozzle having an opening for registration with the opening in the casing for discharging a vapor through the casing opening, a depressible actuating valve for the nozzle, means disposed within the casing and adjacent the valve for periodically applying pressure to the valve, means normally urging said pressure applying means to inoperative position, and movable valve actuating means in operable connection with the pressure applying means and including a member engageable with and movable in consequence of the opening and closing movement of the door to apply pressure to the valve to effect an atomized discharge through the opening in the front wall of the casing each time the door is opened or closed.

2. A device of the character described including in combination, a casing selectively mountable in either a vertical or a horizontal position adjacent a door jamb and provided with an opening in the front wall, an atomizing container removably supported within the casing including a nozzle having a laterally disposed discharge opening positioned to register with the opening in the front wall and a depressible actuating valve at the top of the nozzle, means within the casing for applying pressure to the valve, means normally urging said pressure applying means to

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inoperative position and a valve operating means slidably mounted in the casing and adjustably connected to the pressure applying means and including a member movable in consequence of the opening and closing movement of the door to apply pressure to the valve to effect an atomized discharge through the opening in the front wall of the casing.

3. A device of the character described including a casing member selectively mountable in either a vertical or a horizontal position adjacent a door jamb, a removable cover member therefor, provided with an opening in the front, an atomizing container removably mounted in the casing including a nozzle having a lateral discharge opening positioned to register with the opening in the cover and a depressible actuating valve at the top of the nozzle, a pressure applying lever fulcrumed in the casing with one end disposed over the valve, a rod slidably mounted in and through the bottom of the casing and adjustably connected with the other end of the pressure applying lever, means normally urging said rod and thereby said lever to the inoperative position and a weighted door actuated roller journaled at the lower projecting end of the rod and engageable with and movable in consequence of the opening and closing movement of the door to fulcrum the lever to depress the valve to effect an atomized discharge through the opening in the front wall of the casing each time the door is opened or closed.

4. A device as claimed in claim 3 in which cooperative stop means are provided on the rod and casing for limiting downward movement of the rod.

5. A device as claimed in claim 3 in which means is provided for adjusting the length of the rod supporting the roller.

6. A device as claimed in claim 3 in which a cam carrying arm is mounted on the door for engaging the roller.

7. A device as claimed in claim 2, wherein the means normally urging said pressure applying means to inoperative position comprises resilient means.

8. In combination with a door member and a door frame member, a container selectively mountable in either a vertical or a horizontal position on one of the members and having a pressurized supply of a liquid treating substance therein, said container having an atomizing discharge nozzle, a depressible valve normally closing said nozzle and adapted upon depression to open the same to permit an atomized discharge therefrom, movable valve depressing means supported adjacent the valve, and means normally urging said depressing means to inoperative position,

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said valve depressing means including an element engageable with the other of the said members in consequence of the opening and closing movement of the door member to depress the valve and permit an atomized discharge from the nozzle each time the door member is opened or closed.

9. In combination with a door and a frame therefor, a container selectively mountable in either a vertical or a horizontal position on the frame adjacent the door opening and having a pressurized supply of a liquid room treating substance therein, said container having an atomizing discharge nozzle, a depressible valve normally closing said nozzle, movable valve depressing means supported adjacent the valve, means normally urging said depressing means to inoperative position, and actuating means engageable with the door and operable in consequence of the opening and closing movement thereof to effect movement of the valve depressing means and thereby an atomized discharge from the container each time the door is opened or closed.

10. In combination with a door and a frame therefor, a container selectively mountable in either a vertical or a horizontal position on the frame adjacent the door opening and having a pressurized supply of a liquid room treating substance therein, said container having an atomizing nozzle, a depressible valve normally closing said nozzle and resiliently urged to closed position, movable valve depressing means supported adjacent the nozzle, means normally urging said depressing means to inoperative position, and actuating means engageable with the door and operable in consequence of the opening and closing movement thereof for operating said depressing means to effect an atomized discharge of the substance each time the door is opened or closed.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
749,963	Gallagher	Jan. 19, 1904
1,156,974	Chapman	Oct. 19, 1915
1,567,142	Haworth	Dec. 29, 1925
1,837,619	Heckert	Dec. 22, 1931
1,177,056	Crowell	Oct. 24, 1939
2,368,212	Grant, Jr.	Jan. 30, 1945
2,386,210	Grant, Jr.	Oct. 9, 1945
2,442,080	Eicove et al.	May 25, 1948
2,452,215	Williams	Oct. 26, 1948