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3,050,219 8/1962 Sagarin et al. .... 222/402.11 X  
 3,325,054 6/1967 Braun ..... 222/402.11 X  
 3,422,996 1/1969 Lipman ..... 222/402.11  
 3,426,948 2/1969 Stirling ..... 222/402.11  
 3,484,023 12/1969 Meshberg ..... 222/402.11

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[54] **AEROSOL DISPENSER ACTUATOR**  
 6 Claims, 7 Drawing Figs.

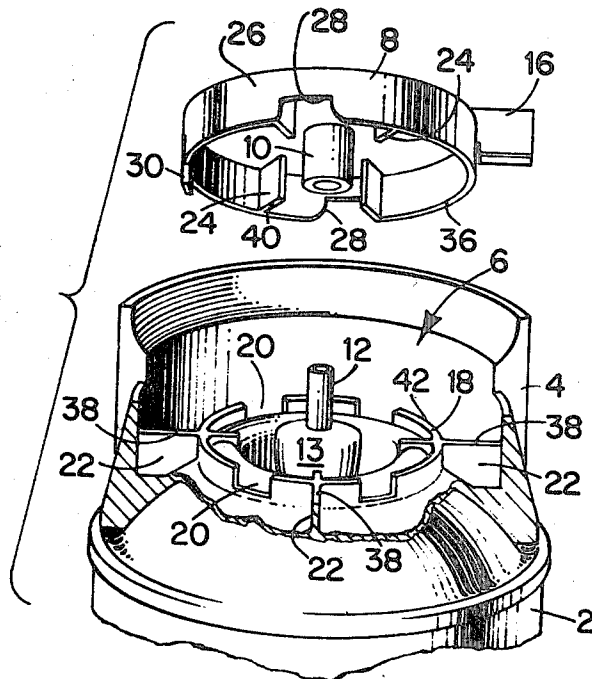
[52] U.S. Cl. .... 222/402.11,  
 222/402.13, 222/402.21

[51] Int. Cl. .... B65d 83/14

[50] Field of Search ..... 222/153,  
 394, 402.11, 402.12, 402.13, 402.14, 402.15,  
 402.21, 402.22, 402.23

[56] **References Cited**  
**UNITED STATES PATENTS**  
 2,752,066 6/1956 Ayres ..... 222/402.11

**ABSTRACT:** An aerosol dispenser actuator including a button movable in a tilting fashion to open a valve to exhaust contents of an aerosol container, and means associated with the button and rotatable to a first position in which the button may be tilted and to a second position in which the button is prevented from being tilted, whereby to inhibit unintended operation of the valve.



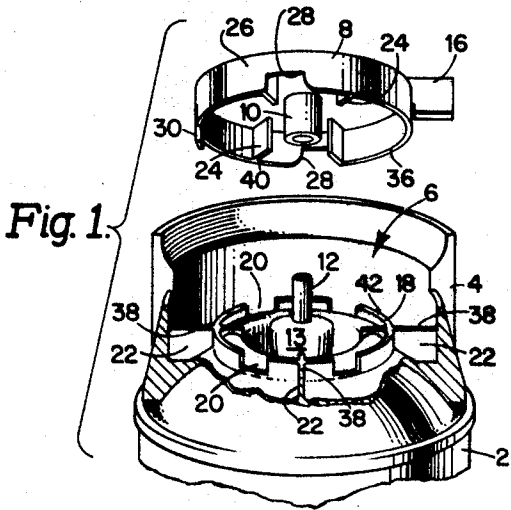


Fig. 1.

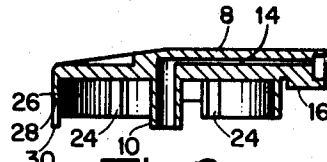


Fig. 2

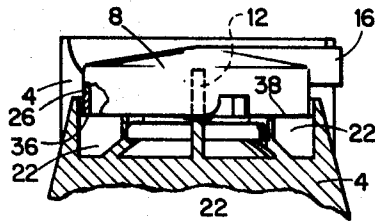


Fig. 3.

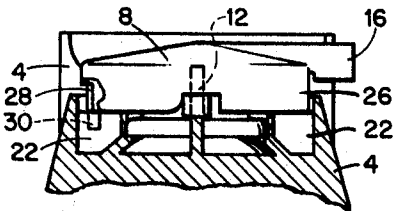


Fig. 5.

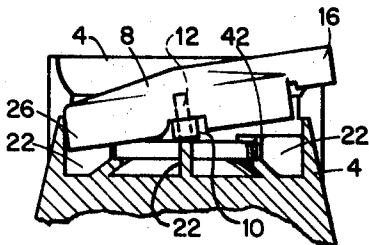


Fig. 7.

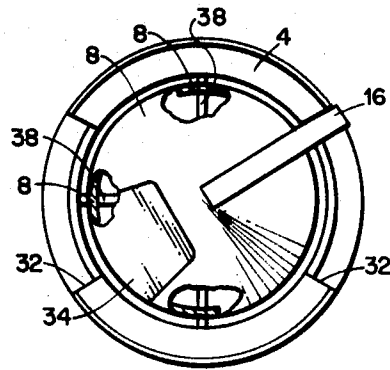


Fig. 4.

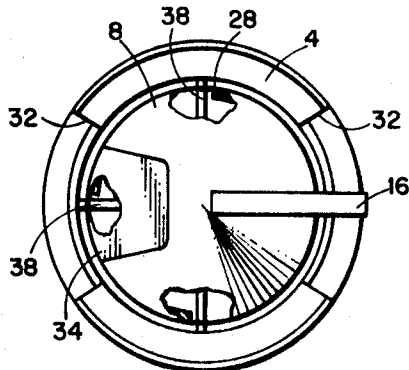


Fig. 6.

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## AEROSOL DISPENSER ACTUATOR

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

This invention relates to aerosol dispensers and is directed more particularly to a tilt-type dispensing mechanism and means for locking the mechanism to prevent accidental discharge of the contents of an aerosol container.

## 2. Description of the Prior Art

Aerosol dispensers having tilt-type actuators are well known and are presently marketed to a large extent. One problem common to the various actuators of this type is that of accidental discharge of the contents of the aerosol container because of inadvertent tilting of the valve stem, or button. Frequently, after purchase of such a dispenser, the protective cap is thrown away and the actuator button left unprotected. Subsequently, if the dispenser is packed into a suit case, or otherwise packed with several other articles, it often happens that pressure is applied to the button sufficient to tilt the button and cause operation of the dispenser valve.

## SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an aerosol dispenser actuator of tilt-type having a permanent protective cover.

It is a further object of the invention to provide such a dispenser actuator in which a portion of the cover may be rotated to a first position in which the button may be operated and to a second position in which operation of the button is prevented.

With the above and other objects in view, as will hereinafter appear, a feature of the present invention is the provision of an aerosol dispenser actuator comprising a button movable in a tilting fashion to open a valve whereby to exhaust contents of an aerosol container, a collar disposed proximate to the button and including an interrupted annular wall surrounding the button, and a cap which receives the outlet end of the button and which includes radially extending ribs movable along the top of the interrupted annular wall and adapted to enter openings in the wall whereby to permit tilting of the cap and thereby tilting of the button.

The above and other features of the invention, including various novel details of construction and combinations of parts, will now be more particularly described with reference to the accompanying drawings and pointed out in the claims. It will be understood that the particular device embodying the invention is shown by way of illustration only and not as a limitation of the invention. The principles and features of this invention may be employed in various and numerous embodiments without departing from the scope of the invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

Reference is made to the accompanying drawings in which there is shown an illustrative embodiment of the invention from which its novel features and advantages will be apparent.

FIG. 1 is an exploded perspective, partially broken away, view of one form of actuator illustrative of an embodiment of the invention;

FIG. 2 is an elevational sectional view of the cap portion of the actuator shown in FIG. 1;

FIG. 3 is an elevational, partly sectional, partly broken away, view of the actuator shown in FIG. 1 but fully assembled;

FIG. 4 is a plan view, partly broken away showing the actuator of FIG. 3;

FIG. 5 is similar to FIG. 3 but shows the actuator cap in a different position;

FIG. 6 is a plan view, partly broken away, of the actuator shown in FIG. 5; and

FIG. 7 is similar to FIG. 5 but shows the cap member in the dispenser valve actuating position.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1 it will be seen that an aerosol container 2 is provided with a collar member 4 having a recess 6 for receiving a cap member 8. The cap member 8 includes a tubular portion 10 which receives a stem 12 which, when moved in a tilting fashion, serves to open a valve 13 whereby to exhaust contents of the aerosol container 2. As may be seen in FIG. 2, the cap member 8 may be provided with a nozzle passage 14 in communication with the tubular portion 10 and extending through a nozzle portion 16 of the cap member. If desired, the nozzle portion 16 may be omitted and the nozzle passage 14 may extend axially of the tubular portion 10.

Referring again to FIG. 1, it will be seen that the collar member 4 is provided with an annular interrupted wall 18 having spaced openings 20 therein. The collar member 4 is further provided with radially extending ribs 22 which intersect the interrupted annular wall 18.

The cap member 8 is also provided with radial ribs 24 extending inwardly from an apron 26 provided on the periphery of the cap member. The apron 26 is provided with grooves 28 and a lug 30 for purposes to be described below.

In the assembled actuator, the cap member 8 is rotatably disposed upon the valve stem 12. As may be seen in FIGS. 4 and 6, the collar member 4 is provided with oppositely disposed openings 32, one of which may serve to receive a thumb or finger of an operator, and the other serve to receive the discharge end of the nozzle portion 16. The cap member may be provided with a recess 34 to which the operator's thumb or finger is applied to actuate the dispenser valve.

In operation, the cap member 8 is movable rotatively relative to the valve stem 12 and slidably on the annular wall 18 and radial walls 22. Bottom edge 36 of the apron 26 of the cap member 8 slides along the top edges 38 of the radial walls 22 and free edges 40 of the radial walls 24 slide along free edge 42 of the annular wall 18.

To prevent inadvertent discharge of the contents of the container 2, the cap member 8 is rotated to the position shown in FIG. 4 in which the nozzle portion 16 is proximate to an edge of one of the openings 32. In this position, the free edge 36 of the apron 26 rests upon the edges 38 of the collar radial walls 22. Further, in the position shown in FIG. 4, the cap radial walls 24 rest upon the free edge 42 of the annular wall 18. Consequently, tilting movement of the valve stem 12 is prevented.

Rotation of the cap member 8 clockwise, from the position shown in FIG. 4 to the position shown in FIG. 6, results in engagement of the lug 30 with one of the collar radial ribs 22 whereby to insure alignment of the cap member 8 with respect to the collar 4 to permit tilting of the cap member and thereby tilting of the valve stem 12 to discharge contents of the container 2. In the position shown in FIG. 6, the cap radial walls 24 are aligned with the collar annular wall openings 20. Further, the grooves 28 in the apron 26 of the cap member 8 are aligned with respective collar radial walls 22 to permit movement of the cap member 8 in a direction toward the container 2. It will be noted that there is no groove in the apron 26 in the vicinity of the nozzle portion 16 of the cap member. Accordingly, this portion of the apron rests upon the free edge 38 of the collar radial rib 22 proximate to the nozzle portion 16 of the cap member, whereby to prevent movement of that portion of the cap member toward the container 2. Thus, pressing of the cap member toward the container results in a tilting movement of the cap member thereby to tilt the stem 12 to operate the dispenser. When the cap member and the collar member are in alignment for operation of the dispenser, the recess 34 will be in alignment with one of the openings 32 and the nozzle portion 16 will be substantially centered in the other opening 32.

Since certain obvious changes may be made in the illustrated device without departing from the scope of the invention, it is intended that all matters contained herein be interpreted in an illustrative and not a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. An aerosol dispenser actuator comprising a button movable in a tilting fashion to open a valve whereby to exhaust contents of an aerosol container through said button, a collar disposed proximate to the button and including an interrupted annular wall circumscribing the button, and a rotatable cap which slidably receives the outlet end of the button said rotatable cap comprising an end wall bounded by a depending peripheral apron and radially extending walls depending from said end wall and extending to said apron, free edges of said radially extending walls being slidably movable along the top of said interrupted annular wall and adapted to enter openings in the annular wall whereby to permit tilting of the cap and thereby tilting of the button.

2. The invention according to claim 1 in which said cap includes a passage in communication with the interior of said

button.

3. The invention according to claim 1 in which said peripheral apron is provided with a groove therein, and said collar further includes a radial rib, said groove being adapted to receive said collar radial rib.

4. The invention according to claim 1 in which said peripheral apron is provided with a lug extending therefrom, and said collar further includes a radial rib, said collar radial rib being engageable with said lug to obstruct rotation of said cap in one direction.

5. The invention according to claim 1 in which said end wall is relatively thin and said apron is generally cylindrical, whereby to form a shell-like cap.

6. The invention according to claim 5 in which said radial walls comprise relatively thin plates depending from said end wall and extending to and joining said apron.

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