

[54] **CHILD-SAFE AEROSOL SPRAY CONTAINER**

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Related U.S. Application Data

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[58] Field of Search 222/182, 402.11, 402.12, 402.13; 215/9; 206/1.5

[56] **References Cited**

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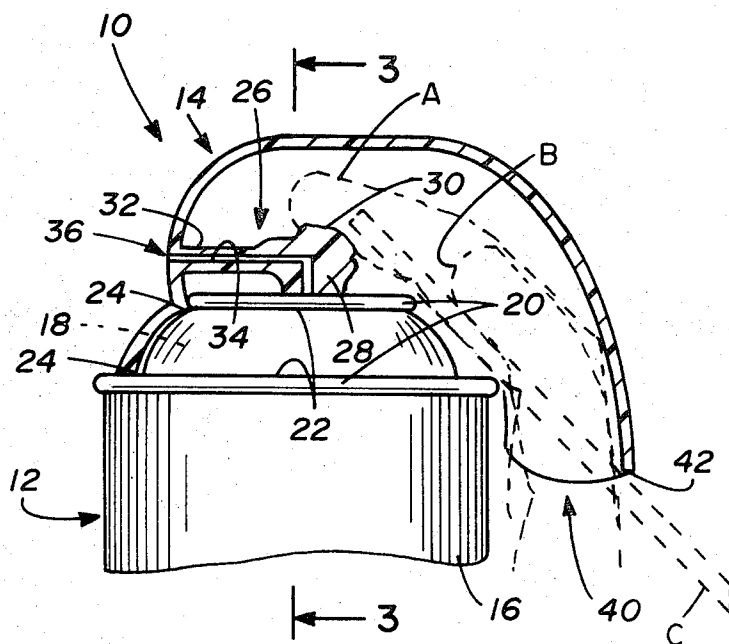
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[57] **ABSTRACT**

A child-safe aerosol spray container includes a curved cover secured to an aerosol spray container and surrounding the actuator thereof. The cover extends to an aperture positioned farther from the actuator than the length of a child's finger and having a diameter smaller than that of a child's hand. Thus, the cover prevents operation of the aerosol spray container by a child while permitting operation by an adult. Also, the curve of the cover prevents operation of the container by foreign objects that a child might employ.

20 Claims, 5 Drawing Figures



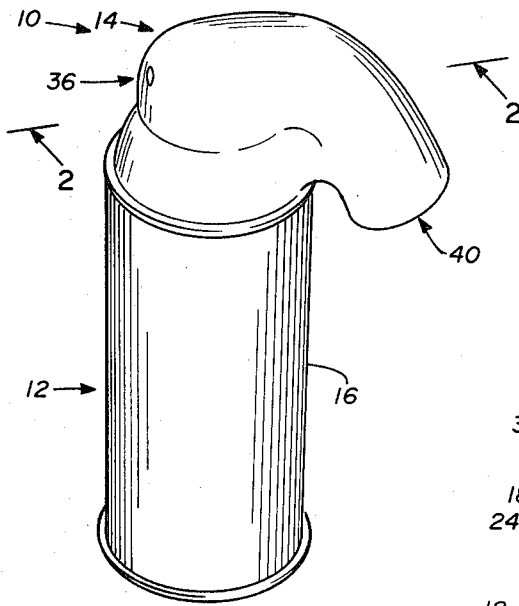


FIG. 1

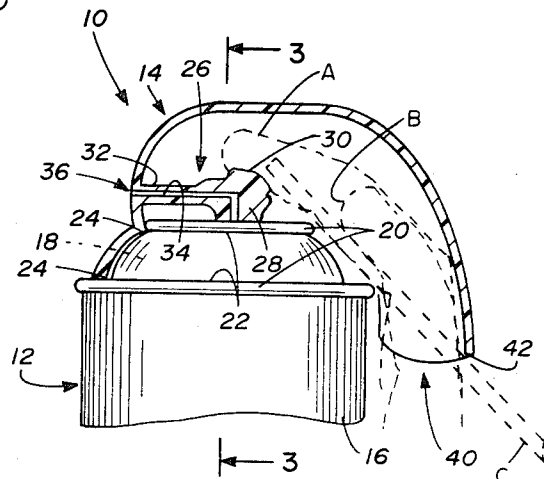


FIG. 2

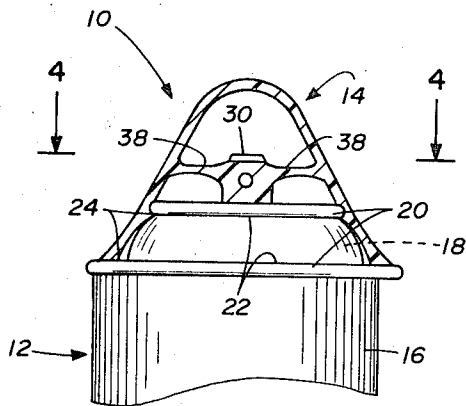


FIG. 3

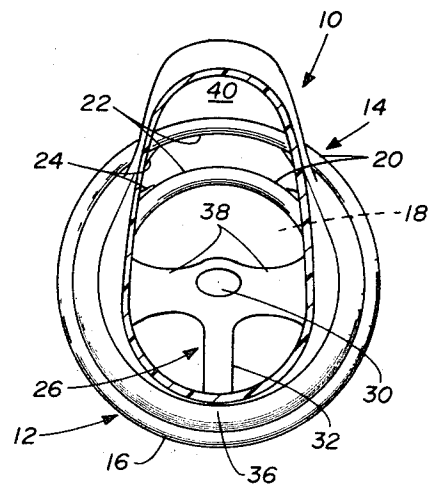


FIG. 4

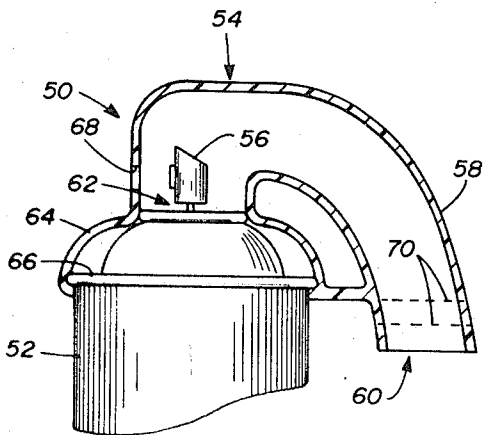


FIG. 5

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CHILD-SAFE AEROSOL SPRAY CONTAINER

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of a prior application Filed Jan. 13, 1969, Ser. No. 790,727, now U.S. Pat. No. 3,554,366.

BACKGROUND OF THE INVENTION

In today's world there are many articles, such as containers for medicine or liquids, aerosol bombs, electrical appliances and the like, that are potentially dangerous to children. Because of physical limitations, carelessness and inconvenience to adult users, it is impossible to always maintain all such articles out of the reach of children. This invention renders certain dangerous articles harmless to children by preventing actuation of such articles by children, specifically, by preventing children from discharging the contents of aerosol bombs.

There are presently many child-safe devices on the market most of which are based on strength, mental maturity or manual coordination of the operator. Those based on strength are often difficult to operate for adults and usually require the use of two hands. Those based on mental maturity or manual coordination, such as combination locks and push-turn devices, are likewise inconvenient to use because they require a relatively high level of concentration and/or dexterity. Accordingly, a need exists for a device that is at least as effective and direct in its manner of preventing injury to children as the devices currently on the market, and yet is simple and convenient to use by adults. Moreover, such a device should be applicable to a wide range of household articles, and should not require resetting after use by an adult as is the case in some presently available devices.

SUMMARY OF THE INVENTION

In accordance with the present invention, a child-safe aerosol spray container includes an actuator enclosing a cover that extends to an aperture positioned farther from the actuator than the reach of the longest finger of a child. The aperture has a diameter smaller than the diameter of a child's hand, so that the cover prevents operation of an aerosol spray container by a child while permitting operation of the container by an adult. Preferably, the cover is integrally formed and rigidly attached.

DESCRIPTION OF THE DRAWING

A more complete understanding of the invention may be had by referring to the following detailed description when taken in conjunction with the drawing, wherein:

FIG. 1 is a perspective view of a child-safe aerosol spray container comprising a first embodiment of the invention;

FIG. 2 is a vertical sectional view taken longitudinally through the child-safe aerosol spray container shown in FIG. 1;

FIG. 3 is a vertical sectional view taken transversely through the child-safe aerosol container shown in FIG. 1;

FIG. 4 is a horizontal sectional view of the child-safe aerosol spray container shown in FIG. 1, and

FIG. 5 is a sectional view of a child-safe aerosol spray container comprising a second embodiment of the invention.

DETAILED DESCRIPTION

Referring now to the drawing, and particularly to FIGS. 1-4 thereof, a child-safe aerosol spray container 10 comprising a first embodiment of the invention is shown. The child-safe aerosol spray container 10 includes a conventional aerosol spray assembly 12 which contains a substance that is potentially dangerous to children, such as a household cleaner, a pesticide, a paint, etc., or which creates a nuisance if discharged by children. The aerosol spray assembly 12 also contains a conventional aerosol propellant, such as freon. The child-safe aerosol spray container 10 further includes a cover 14 that prevents actuation of the aerosol spray assembly 12 by children while permitting actuation of the assembly 12 by adults.

As is best shown in FIGS. 2 and 3, the aerosol spray assembly 12 includes a can 16 having a conventional valving assembly 18 mounted in it. The upper end of the can 16 includes a pair of rolled joints 20 which define a pair of oppositely facing grooves 22. The cover 14 is rigidly secured to the aerosol spray assembly 12 by a pair of lips 24 that engage either or both of the grooves 22. This construction is permanent in nature and therefore prevents removal of the cover 14 by children. Of course, the cover 14 may be secured to the aerosol spray assembly by other techniques, if desired.

An actuator assembly 26 is mounted within the cover 14. The actuator assembly 26 includes an actuating tube 28 that extends into the valving assembly 18 of the can 16, a push button 30 and a discharge tube 32 that extends through the cover 14. A discharge passageway 34 extends through the actuator assembly 26 from an inlet located within the aerosol spray assembly 12 to an outlet 36 located outside the cover 14. As is best shown in FIG. 3, the actuator assembly 26 is secured to the cover 14 by a pair of flexible webs 38. The actuator assembly 26 is conventional in operation in that upon depression of the push button 30 relative to the can 16, the tube 28 actuates the valving assembly 18, whereupon an aerosol spray is discharged from the can 16 through the passageway 34 and through the outlet 36. Of course, actuator assemblies that differ in design from the assembly 26 can be employed in the cover 14, if desired.

The cover 14 comprises an enclosure that surrounds the actuator assembly 26, defines a passageway that extends to a finger receiving aperture 40. As is best shown in FIG. 2, the location of the aperture 40 relative to the actuator assembly 26 permits an adult's finger A inserted through the aperture 40 to engage the push button 30 of the actuator assembly 26. However, the aperture 40 is positioned farther from the push button 30 than the reach of a child's finger B. The aperture 40 is also smaller in diameter than the diameter of a child's hand and, accordingly, the aperture 40 prevents actuation of the aerosol spray container by a child. The aperture 40 includes an edge 42 that cooperates with the rolled joints 20 of the aerosol spray assembly 12 to prevent engagement of the push button 30 by a straight, rigid object C inserted through the aperture 40. Thus, the cover 14 not only prevents actuation of the aerosol spray assembly 10 by a child's finger and

hand, but also prevents actuation of the aerosol spray assembly by foreign objects that a child might employ.

The cover 14 may be formed from any convenient material, such as plastic or metal, and preferably has sufficient rigidity to prevent actuation of the aerosol spray assembly by deforming the cover. In accordance with the preferred embodiment of the invention, the cover comprises an integral structure, however, the actuator assembly 26 may be formed separately from the remainder of the cover and then attached thereto, if desired. Finally, the discharge tube of the actuator assembly may be secured to the remainder of the cover or may be loosely received therein, as desired.

Referring now to FIG. 5, a child-safe aerosol spray container 50 comprising a second embodiment of the invention is shown. The container 50 includes a conventional aerosol spray assembly 52 and a cover 54 that permits actuation of the assembly 52 by adults while preventing actuation thereof by children. In the embodiment shown in FIG. 5, the aerosol spray assembly 52 includes an actuator 56, and the cover 54 comprises an attachment to the assembly 52. It will be understood, however, that the actuator 56 may comprise a portion of the cover 54, if desired.

The cover 54 includes a palmwardly curved adult finger length hollow tube 58 including an aperture 60 and an opening 62 that receives the actuator 56. A housing 64 having closed sides extends from the tube 58 to surround the opening 62 and prevent access to the actuator 56. A lower open end 66 of the housing 64 is rigidly attached to the aerosol spray assembly 52 such that it is impossible for a child to remove the cover 54. A narrow vertical slot 68 is provided at the end of the tube 58 opposite the aperture 60 and is designed to allow aerosol spray to exit from the cover 54 as the actuator 56 is depressed downwardly. The portion of the tube 58 adjacent the aperture 60 is provided with a plurality of cut off lines 70 which may be employed to adjust the length of the tube 58, if desired. The embodiment shown in FIG. 5 accomplishes the same child safe results through basically the same construction as the embodiment shown in FIGS. 1-4.

From the foregoing, it will be understood that the present invention comprises a child-safe aerosol spray container including a conventional aerosol spray assembly and a cover that permits actuation of the aerosol spray assembly by adults while preventing actuation of the assembly by children. The use of the invention is advantageous over the prior art in that it does not inconvenience adults in the use of an aerosol spray container and yet automatically prevents operation of the container by children. As will be understood from the drawing and from the foregoing specification, the invention is easily manufactured by existing techniques, and may comprise either a complete child-safe aerosol spray container, or an attachment that renders existing aerosol spray containers child safe.

Although specific embodiments of the invention have been illustrated in the drawing and described herein, it will be understood that the invention is not limited to the embodiments disclosed, but is capable of rearrangement, modification and substitution of parts and elements without departing from the spirit of the invention.

What is claimed is:

1. The aerosol device comprising:

an aerosol container filled with pressurized fluids to be dispensed,

a valve mechanism in the top of the container for releasing the pressurized fluids when actuated, actuator means for actuating the valve mechanism to release the fluids and for directing the fluids in a confined manner in a forward direction, and cover means attached to the container and substantially surrounding the actuator means,

the cover means having an aperture through which the fluid from the actuator means is directed, the cover means defining an elongated finger passageway extending rearwardly and downwardly from the actuator, the top wall of the passageway terminating to the rear of and below the top of the actuator at a point spaced from the container to permit a finger of a user whose hand is holding the container to enter the passageway and engage the actuator.

2. The device of claim 1 wherein the passageway is configured to prevent engagement of the actuator by a straight, rigid object inserted through the aperture.

3. The device of claim 1 wherein the cover and actuator are interconnected such that separation of the cover from the container also separates the actuator from the container.

4. The device of claim 1 wherein the actuator forms a continuous fluid discharge passageway for conducting the fluid from the container to a point outside the cover.

5. The device of claim 4 wherein the actuator is molded integrally with the cover.

6. The device of claim 4 wherein the portion of the actuator forming the discharge passageway extends through an aperture in the cover sized to closely receive said portion of the actuator.

7. A device for permitting actuation of an aerosol spray dispenser by an adult while preventing actuation by a child who might otherwise actuate the device comprising:

an actuator for an aerosol spray container, and

a cover surrounding the actuator, the cover forming an elongated curved passageway extending from the actuator to an aperture for receiving a finger of an operator, the aperture having a sufficiently large diameter to admit the finger of an average-sized adult but sufficiently small to exclude the hand of a typical thirty month old child and being spaced sufficiently close to the actuator to permit the finger of the adult to reach the actuator but sufficiently far from the actuator to prevent a finger of the typical 30-month old child from reaching the actuator.

8. The device of claim 7, wherein the passageway is configured to prevent engagement of the actuator by a straight, rigid object inserted through the aperture.

9. The device of claim 7, wherein the cover and actuator are interconnected such that separation of the cover from the container also separates the actuator from the container.

10. The device of claim 7, wherein the portion of the cover forming the passageway includes finger length indicia formed on it.

11. The device of claim 7, wherein the actuator forms a continuous fluid discharge passageway for conducting the fluid from the container to a point outside the cover.

12. The device of claim 11, wherein the actuator is molded integrally with the cover.

13. The device of claim 11, wherein the portion of the actuator forming the discharge passageway extends through an aperture in the cover sized to closely receive said portion of the actuator.

14. A device for permitting actuation of an aerosol spray container by an adult while preventing actuation by a young child who might otherwise actuate the device comprising:

an actuator for an aerosol spray container, and
a cover surrounding the actuator and adapted to be attached to the top of the container, the cover having a small opening in the front through which the contents are dispensed and having a top wall extending from above the actuator rearwardly and downwardly toward the cylindrical side wall of an aerosol spray container to form a portion of an elongated passageway terminating in an aperture for receiving the finger of a user whose hand is holding the container.

15. The device of claim 14 wherein the passageway is configured to prevent engagement of the actuator by a straight, rigid object inserted through the aperture.

16. The device of claim 14 wherein the cover and actuator are interconnected such that separation of the cover from the container also separates the actuator from the container.

17. The device of claim 14 wherein the portion of the cover forming the passageway includes finger length indicia formed on it.

18. The device of claim 14 wherein the actuator forms a continuous fluid discharge passageway for conducting the fluid from the container to a point outside the cover.

19. The device of claim 18 wherein the actuator is molded integrally with the cover.

20. The device of claim 18 wherein the portion of the actuator forming the discharge passageway extends through an aperture in the cover sized to closely receive said portion of the actuator.

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