Aug. 19, 1969 I. J. MARKOWITZ 3,462,045

SAFETY AEROSOL COVER CAP

Filed Nov. 6, 1967

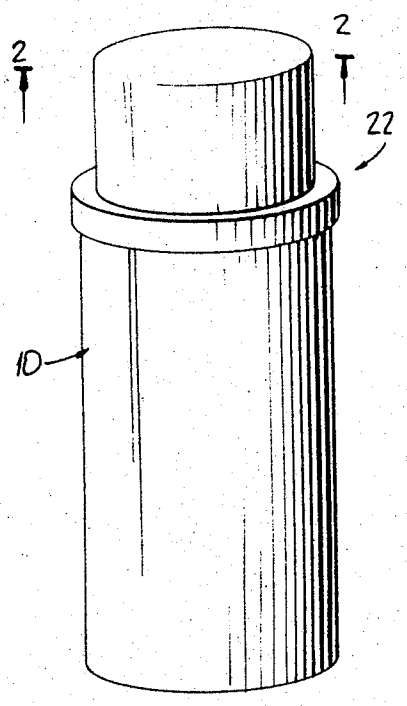


Fig. 1.

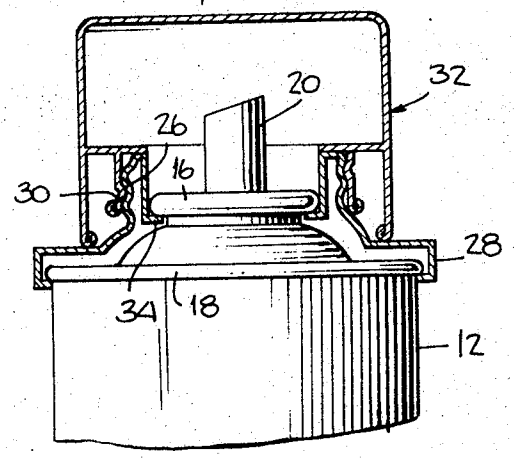


Fig. 2.

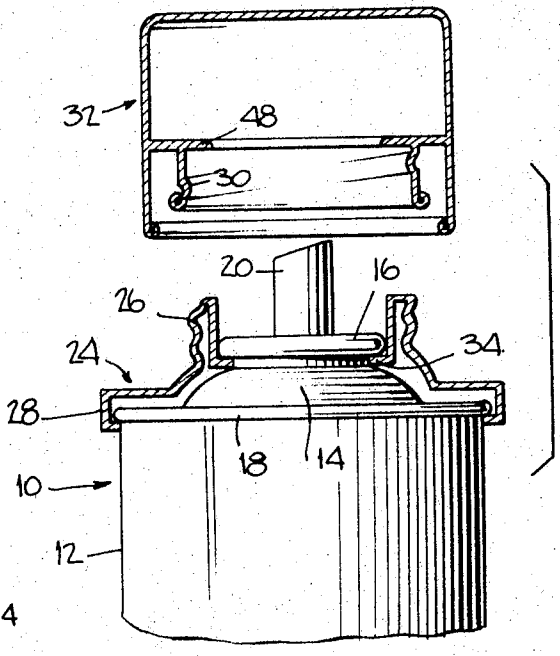


Fig. 3.

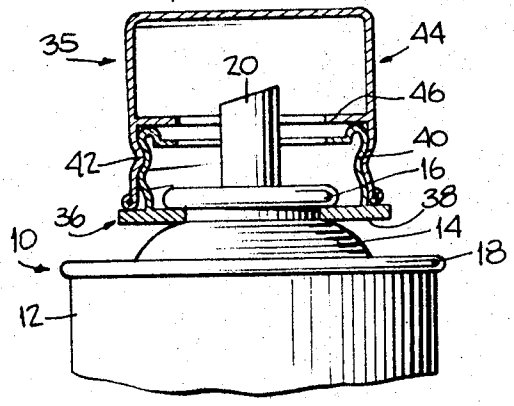


Fig. 4.

INVENTOR.
ISRAL J. MARKOWITZ
BY Henry A. Mazzullo Jr.
ATTORNEY

United States Patent Office 3,462,045 Patented Aug. 19, 1969

3,462,045

SAFETY AEROSOL COVER CAP

Isral J. Markowitz, 579 E. 42nd St., Brooklyn, N.Y. 11203

Filed Nov. 6, 1967, Ser. No. 680,937
Int. Cl. B65d 47/06; B67d 5/32
U.S. Cl. 222—182 3 Claims

ABSTRACT OF THE DISCLOSURE

A safety aerosol cover cap of two-piece construction with threadable means securing same together so that rotation of either or both of the cap elements will not disengage the cover cap from the aerosol or pressurized container and expose the valve depress button to use by children, particularly of the toddler age group.

The present invention is a continuation-in-part of my copending application, Ser. No. 576,365, filed Aug. 31, 1966 and entitled "Safety Bottle Closure," now U.S. 3,403,803.

This invention relates generally to aerosol devices of the hand-held type which are used for packaging and dispensing a multiplicity of products. Although many of such products are of the edible type, there is an ever increasing use of such aerosol packaging means for distributing other products which if dispensed, whether intentionally or not, could cause harm to uninformed users such as children. These products include but are not limited to paints and lacquers, oil, hair spray, insecticides and other various pesticides, bathroom cleaners and deoderizers, etc. All of these aerosol devices packagiing such typical material caution the user to "keep out of reach of children" and not to make contact with the body or eyes, but none provides a safety closure or cover cap for such device.

Accordingly, it is the principal object of this invention to provide a novel safety aerosol cover cap, which may be easily removed or disengaged by responsible adults of average intelligence, but which cannot be removed by children.

Another object of the invention is to provide a novel safety aerosol cover cap which is durable in construction, simple in design, economical to manufacture, and easy to assemble so as to be generally acceptable by the industry and general public.

The present specification discloses, in accordance with the illustrated embodiments of the invention, a unique and novel safety aerosol cover cap comprising a first cap element having means for rotatively securing same to the reduced neck portion of the valve assembly, and a second cap element threadably engaged to the first cap element so that rotation of either or both of the cover cap elements will not disengage the caps or open the aerosol container and thus reveal the valve depress button.

Other objects, features and advantages of the present invention will be apparent to those skilled in the art from the following detailed description of the preferred embodiments of my invention when considered in connection with the accompanying drawings in which:

FIGURE 1 is a perspective view, taken from the front and above, of an aerosol container employing my safety cover cap;

FIGURE 2 is an axial sectional view, taken along the line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view similar to FIGURE 2 but showing the upper cap element removed from the lower cap element; and

FIGURE 4 is an axial sectional view of an aerosol device illustrating yet another modified form of safety cover cap construction.

Referring first to FIGURES 1–3, the novel aerosol cover cap device of the invention as illustrated therein comprises a pressurized container **10** of a size generally adapted to be held in the hand. The container **10** is of the conventional type being made from sheet metal and having cylindrical side walls **12** and an upper conical neck portion **14** terminated by a pair of external annular lips or beads **16** and **18**. A valve-actuating button **20** extending upwardly from the center of the neck portion **14** is suitably connected to a valve assembly and associated dip tube (not shown) residing within the container **10**.

In accordance with the present invention, there is provided for use in conjunction with the pressurized container **10** a novel and improved cap construction generally designated by the numeral **22**, which has a number of desirable advantages and features. The cap construction **22** is shown as comprising a lower cap element **24** suitably secured in a fixed but yet rotational, loosely fitting manner to the bead **16**. If desired, the lower cap element **24** may also be secured in a rotational, loosely fitting manner to the bead **18**, as best shown in FIGURE 3. A threaded section **26** and an outer flange portion **28** loosely fitting about the annular bead **18** form the remaining part of the lower cap element **24**.

Cooperable thread means **30** for engaging with the threaded section **26** are provided on an upper cap element **32** which basically forms the cover unit of such cap construction. Upon the threading of the upper cap element **32** to the lower cap element **24**, the cap structure **22** appears on the whole as being of a one-piece unit construction. Radially inwardly extending flange **34** permits the entire cap assembly of elements **24** and **32** to easily rotate about the bead **16** in a loosely fitting manner By such construction, one uninformed child would not recognize that for such cap structure to be removed, one must first hold the container **10** and the lower element **24** in a fixed position with one hand and rotate the upper element **32** with another hand so as to unthread the threaded connection **26**, **30**. Unless this action is taken, the entire cover-cap assembly will readily rotate about the bead **16** as an integral unit.

As best shown in FIGURE 4, the cap structure **35** does not necessarily have to be disposed about both annular beads **16** and **18**. In this embodiment, a lower cap element **36** is provided with a single readily-inwardly extending flange **38** rotatively secured about the uppermost annular bead **16** of the aerosol container **12** in a loosely fitting manner, and an upwardly extending threaded section **40** provides the cooperating threaded means for securing threads **42** of an upper cap element **44** to the lower cap element **36**. Although functionally, this embodiment is very similar to the structure of FIGURES 1–3, it is more revealing in the sense that a child might be able to figure out how to remove the upper cap element **44**, whereas, with the design of FIGURES 1–3, one is not as readily provided with a visual picture as to how the cover-cap functions because the conical neck portion **14** is concealed beneath the lower cap element **24**.

The cap elements may be formed of any type of metal or may even be formed of plastic. If the cap elements are made of metal, there must be sufficient resiliency in the metal for the flange **34** to be snapped about the bead **16** and retained thereon in a loosely fitting manner; otherwise, such flange must be composed of two semi-circular portions suitably soldered or welded together as a unit upon assembly to the aerosol container **10**.

Shoulders **46** and **48**, respectively of upper cap elements **44** and **32**, are not limit stops for the threaded connection and they need not form a part of the upper cap elements. As will be noted, the upper cap elements must be deep

enough to accommodate the height of the upwardly extending valve actuating button **20**.

It should also be understood that the forms of the device shown and described herein are to be taken as preferred examples of the invention and that various modifications and changes in the size, shape and arrangement of parts may be restored to without departure from the spirit of the invention.

I claim:

1. A safety cover cap for an aerosol container having a conical neck portion terminating in a small upper annular bead and a larger lower annular bead and an upwardly extending valve actuating button communicating with the inside of said aerosol container, comprising a lower cap element rotatively secured in a loosely fitting manner about one of said beads, an upper cap element having threaded means, and cooperating threaded means on said lower cap element whereby both of said cap elements when threaded together are caused to freely rotate as an integral unit about said annular bead, said cooperating threaded means on said lower cap element being disposed axially between said upper annular bead and said lower annular bead, and said upper and lower cap, elements when assembled appear on the whole as a unitary one-piece cover cap construction.

2. The safety cover cap of claim **1**, wherein said lower cap element is provided with an inwardly directed annular flange adapted to be rotatatively held beneath said upper annular bead in a loosely fitting manner.

3. The safety cover cap of claim **2** wherein said lower cap element is provided with another inwardly directed annular flange adapted to be rotatively held beneath said lower annular bead in a loosely fitting manner, and the body of said lower cap element concealing the annular flange disposed about said upper annular bead.

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ROBERT B. REEVES, Primary Examiner

H. S. LANE, Assistant Examiner

U.S. Cl. X.R.

222—153

Disclaimer

3,462,045.—*Isral J. Markowitz*, Brooklyn, N.Y. SAFETY AEROSOL COVER CAP. Patent dated Aug. 19, 1969. Disclaimer filed Jan. 17, 1974, by the assignee, *Stem Development Corporation.*

Hereby disclaims the portion of the term of the patent subsequent to Oct. 1, 1985.

[*Official Gazette April 16, 1974.*]