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Bennett

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[54] **CHILDPROOF AEROSOL CAP**

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Related U.S. Application Data

[63] Continuation of Ser. No. 81,260, Oct. 16, 1970, abandoned.

[52] **U.S. Cl.** ..... **220/281,** 215/215, 220/85 P, 222/153

[51] **Int. Cl.** **B67d 5/00,** B65d 43/10

[58] **Field of Search** ..... 215/9; 220/60 R, 42 A, 220/43 R, 85 P; 222/182, 153, 402.11, 402.12, 402.13

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[57] **ABSTRACT**

An aerosol cap having a circumferential, priable configuration.

4 Claims, 4 Drawing Figures

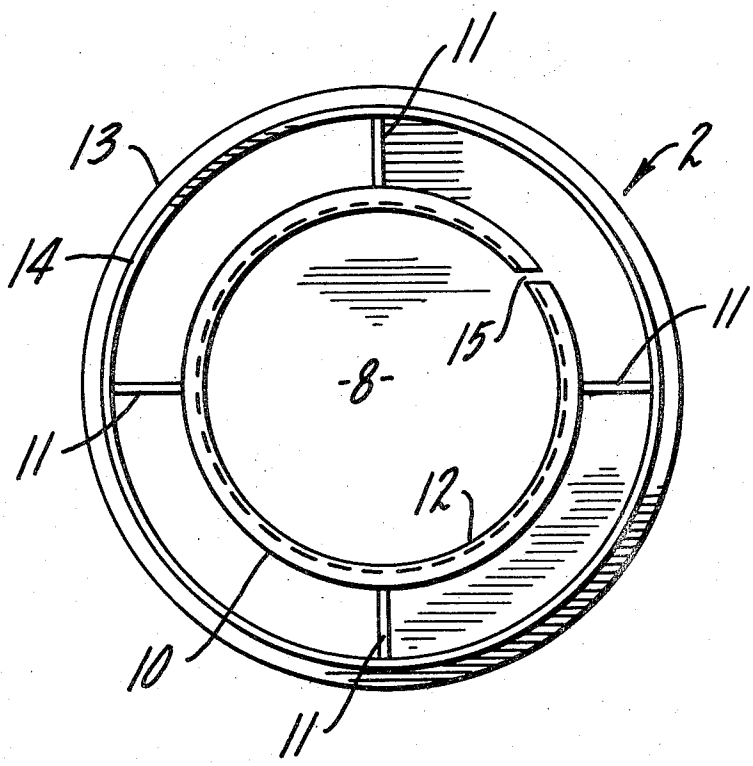
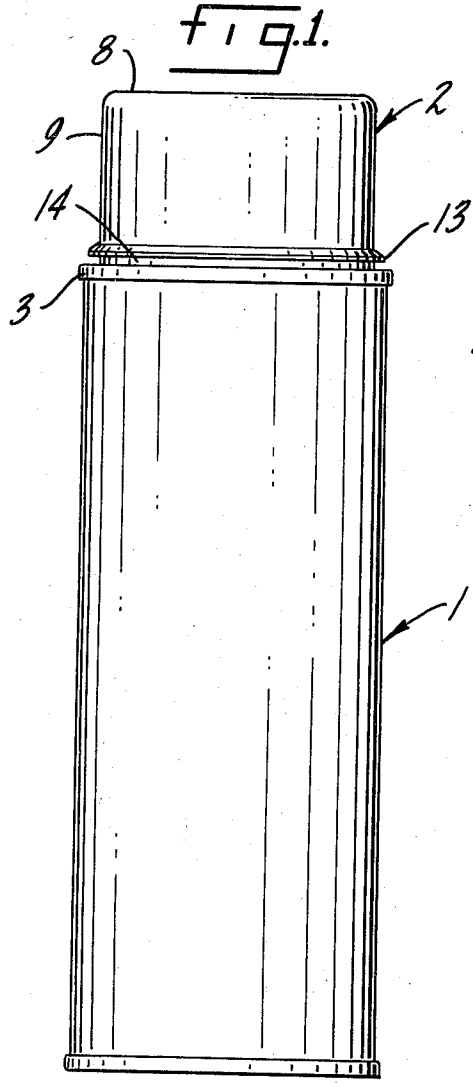


Fig. 1.



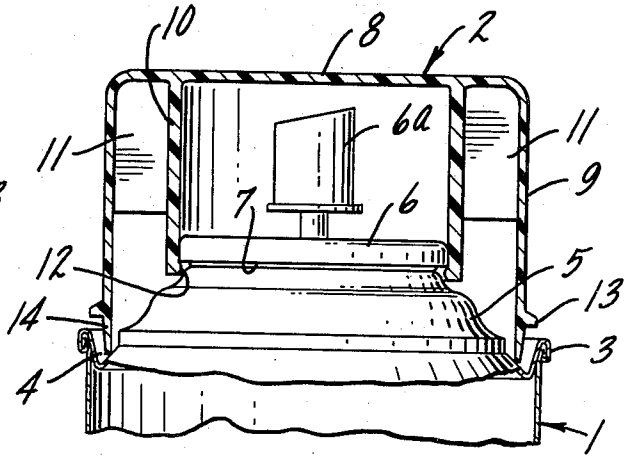
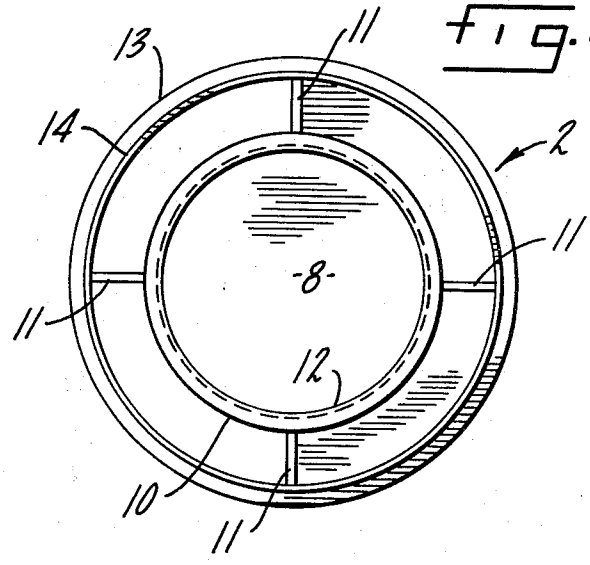


Fig. 2.

Fig. 3.



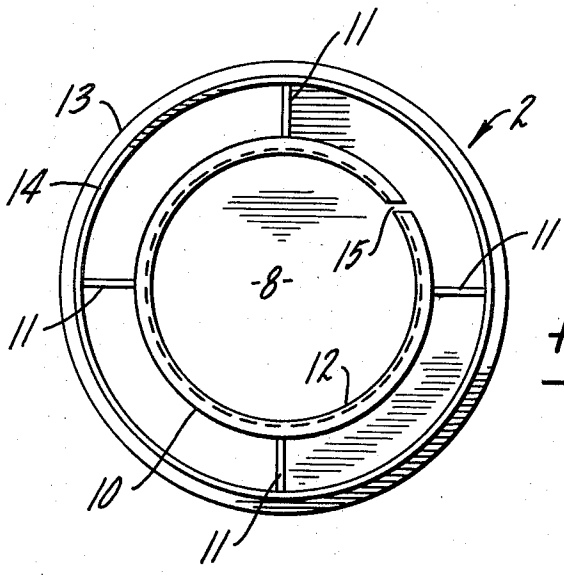


Fig. 4.

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CHILDPROOF AEROSOL CAP

This is a continuation of application Ser. No. 81,260, filed Oct. 16, 1970 now abandoned.

SUMMARY OF THE INVENTION

This invention relates to covers for pressurized or aerosol type containers.

One purpose of the invention is to provide an aerosol container cover having means resistant to manual removal by small children.

Another purpose is to provide an aerosol container cover having a separating means approachable at substantially any point about its circumference.

Another purpose is to provide an aerosol cap having a circumferential configuration in a plane overlying a rim of an aerosol container whereby the cover may be pried from engagement with the container at virtually any point on its circumference.

Another purpose is to provide an aerosol cover having priable means about its circumference and means protecting the container within the cover against contact by a prying tool.

Another purpose is to provide an aerosol cover having a side wall, a circumferential configuration on said side wall and a continuing wall portion of diminishing thickness beyond said configuration.

Prior covers have been supplied with openings in their side wall for extension therethrough of a screwdriver or like prying means. Such openings, however, expose the top of the container, within the cover, to possible puncture by the prying means. Moreover, a screwdriver or some other tool may not be readily at hand when the housewife or other user desires to remove the cover. Accordingly, it is one purpose of the invention to supply a cover which may be pried from an aerosol container with a wide variety of prying elements, including, for example, a coin, and to provide means protecting the container within the cover against contact by such prying elements.

Another purpose is to provide a cover having a circumferential flange priably positioned adjacent to the container rim and a flexible wall portion of said cover within said rim for depression by a prying means.

Another purpose is to provide an aerosol cover having adequate locking means easily disengaged by adults but resistant to small children.

Other purposes may appear from time to time during the course of the specification and claims.

BRIEF DESCRIPTION OF THE DISCLOSURE

The invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:

FIG. 1 is a side elevation;

FIG. 2 is a detailed view in partial cross section and on an enlarged scale;

FIG. 3 is an underside view of the closure of the invention; and

FIG. 4 is an underside view of a variant form of the invention.

Like parts are indicated by like numerals throughout the specification and drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, numeral 1 indicates generally a conventional aerosol or pressurized container. The cover of the invention is shown at 2 in place on the container 1.

Referring now to FIG. 2, the container 1 has a circumferential upper rim 3 bounding a circumferential depression or circular groove 4 in the top or roof of the container 1. Within the rim 3 and groove 4 the roof 5 of container 1 is domed and carries an overhanging disc top portion 6. It will be understood that the elements 3–6 are standard and conventional, forming no part of the present invention in themselves. The disc 6 creates a circumferential ledge or overhang indicated at 7.

The cover 2 has a top wall 8 and an integral outer circumferential wall 9 normal thereto. The cover 2 thus may be described as cup-shaped, its open end receiving the dome elements 5,6.

Within the circumferential wall 9 the cover 2 has an axial sleeve 10 surrounding, when the cover is in place, the conventional aerosol valve element 6*a*. Circumferentially spaced, radially disposed integral ribs 11 extend between and join sleeve 10 and wall 9.

The sleeve 10 has an inwardly disposed annular locking flange 12 at its distal end and designed for locking engagement beneath the ledge 7 of element 6 when the cover 2 is snapped into place on container 1.

A circumferential or annular, outwardly extending flange configuration 13 is formed externally of and integrally with wall 9, adjacent its lower portion as the parts are shown on the drawings. The underside, as the parts are shown, of the flange 13 is normal to the wall 9. The portion of wall 9 continuing downwardly beyond flange 13 is thinned as indicated at 14.

It will be understood that the entire cap 2 including all of its elements described above is conveniently and preferably formed integrally of a suitable plastic. When the cap 2 is in position on container 1, i.e., the flange 12 is engaged with ledge 7, the thinned portion 14 of wall 9 extends downwardly into groove 4 and the underside of flange 13 lies in a plane spaced a slight distance above the upper surface of rim 3. The upper surface of flange 13 is inclined downwardly and outwardly.

Illustrated at 15 is an elongated, lengthwise slit formed in sleeve 10 and extending substantially its entire length to penetrate the locking flange or shoulder 12.

The use and operation of the invention are as follows:

The cap 2 is placed in valve-protecting position shown in FIG. 2 by simple manual pressure, the plastic nature of sleeve 10 permitting the flange 12 is ride about disc 6 and to snap into place beneath ledge 7 to lock the cap 2 against inadvertent removal from the container 1. Small children are thus precluded or deterred from removing the cap 2 and are prevented from contact with the valve 6a and the contents of the container 1.

It will be understood that the tool-engageable configuration 13 could take the reverse form of a groove in the wall 9 and that such configuration could be incremental about the circumference of wall 9 without departing from the nature and scope of the invention, though the preferred flange form shown lends itself to ease of manufacture and esthetic appearance.

The cover of the invention is easily removed by older persons by prying between the configuration 13 and rim 3. The thinned wall portion 14 permits inward movement thereof by a prying tool, if desired, while

protecting the domed area **5** against puncture by the possibly sharp end portion of a prying tool.

The separation or slit **15** permits an adult to squeeze inwardly the wall **9** and thus to remove cover **2** entirely by manual operation and without the need of a prying tool when desired. Such inward movement of wall **9** adjacent its midsection is transmitted by ribs **11** to the sleeve **10** tending to bow or distort the open distal end of sleeve **10** and to move locking flange **12** in a direction away from locking engagement with overhang **7**. Concurrent upward or withdrawal action on cover **2** is effective to cause disengagement of flange **12** and thus to remove the cover from container **1**. While such squeezing and withdrawal action is easily accomplished by an adult and older children, it would be difficult or impossible of accomplishment by very small children, to whose lack of understanding of the dangers involved the invention is directed.

Use of flange **12** and slit **15** enables the provision of sufficient area of engagement between elements **7** and **12** to provide a positive lock against inadvertent cover removal while permitting intentional removal with ease.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A removable and replaceable cover for a container such as an aerosol container having a domed roof, a circular collar having an undersurface located above said domed roof and surrounding a dispensing actuator, said cover including:

a top wall, a relatively thin flexible outer sleeve depending from said top wall, a relatively thin flexible inner sleeve generally coaxial with said outer sleeve and also depending from said top wall, an inwardly projecting distortable locking flange carried by said inner sleeve and adapted to engage the undersurface of said circular collar of said container when said cover is installed on said container,

at least one slit formed in said inner sleeve and extending through said locking flange to allow distortion of said locking flange, and

a plurality of ribs connecting said inner and outer sleeves to transmit forces applied to said outer sleeve between said sleeves, said ribs being spaced around the periphery of said inner sleeve so as to cause distortion of said locking flange upon the transmission of forces between said sleeves.

2. The cover of claim **1** in which at least a pair of said ribs are generally diametrically opposed to each other.

3. The cover of claim **2** in which two pairs of generally diameterically opposed ribs are provided with said pairs being located 90° relative to each other.

4. A removable and replaceable cover for a container such as an aerosol container having a domed roof, a circular collar having an undersurface located above said domed roof and surrounding a dispensing actuator, an annular groove surrounding the base of said roof and a rim bounding said groove, said cover including:

an imperforate top wall, an imperforate relatively thin flexible outer sleeve depending from said top wall, a relatively thin flexible inner sleeve generally coaxial with said outer sleeve and also depending from said top wall, an inwardly projecting distortable locking flange carried by said inner sleeve and adapted to engage the undersurface of said circular collar of said container when said cover is installed on said container,

at least one slit formed in said inner sleeve and extending through said locking flange to allow distortion of said locking flange,

a plurality of ribs spaced around the periphery of said inner sleeve and connecting said inner and outer sleeves and,

an outwardly projecting flange carried on said outer sleeve and extending at least part way around the periphery of said sleeve,

said flange being located above the lower end of said outer sleeve so that when said cover is positioned on said container said flange will be located above the rim of said container.

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