United States Patent

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Continuation-in-part of Ser. No. 704,885, Feb. 12, 1968, now Patent No. 3,438,537, which is a Continuation-in-part of Ser. No. 775,040, Nov. 12, 1968, now Patent No. 3,421,651
[45] Patented **Dec. 1, 1970**

[73] Assignee **Sterling Seal Company**
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a corporation of Pennsylvania

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[54] **DIRECTIONAL CLOSURE FOR A CONTAINER**
6 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **220/27,** 222/182
[51] **Int. Cl.** **B65d 51/20**
[50] **Field of Search** ..... 220/27, 85(P); 222/182

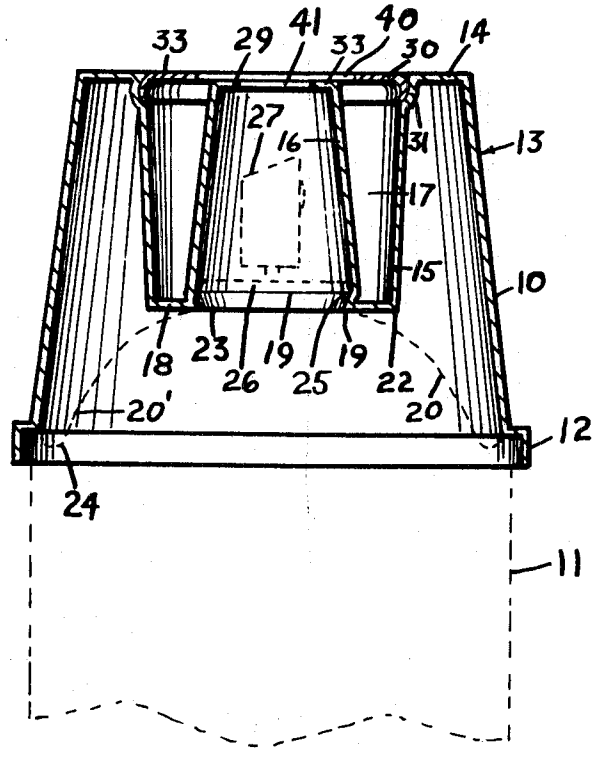
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ABSTRACT: A tamperproof overcap for an aerosol can or the like made up of a cylindrical outer body closed at one end and having an inner wall generally concentric with the outer wall and an intermediate wall between the inner wall and the outer wall. The lower part of the intermediate wall is attached to the lower part of the inner wall by an annular bottom. The upper edge of the intermediate wall is fixed to the upper part of the outer wall by an annular top. The lower edge of the inner wall has an annular inwardly extending bead which may underlie the overhanging annular circumferential bead around the valve of an aerosol can. The bead has a circumference slightly less than the outer circumference of the overhanging circumferential bead. Thus the bead on the cap may snap under the overhanging circumferential bead of the can and hold the cap firmly in place. The cap body is closed at one end and forms a cover which closes the upper edge of inner wall and this cap cover has a slot in it. The slot is made to receive a coin or a suitable tool. A suitable tool may be twisted in the slot. This will cause the material at the ends of the slot to tear along a line which will extend down and intercept the bead. A cover disk may be inserted in the annular space defined by the upper edge of the outer walls overlying the cap cover. This cover disk may either be removed to give access to the slot or the cover disk may have a slot through which the coin or suitable tool may be inserted to fracture the inner cup. The coin or suitable tool will first pass through a first outer top and then into the inner top, a twisting action then applied to the coin or suitable tool will rotate the cover disk and break the inner circular wall, thus releasing the locking quality of the lower flange from its underlying position. The closure's basic construction could provide a tapered design or shape from a straight wall normal design realizing a limited stacking quality.



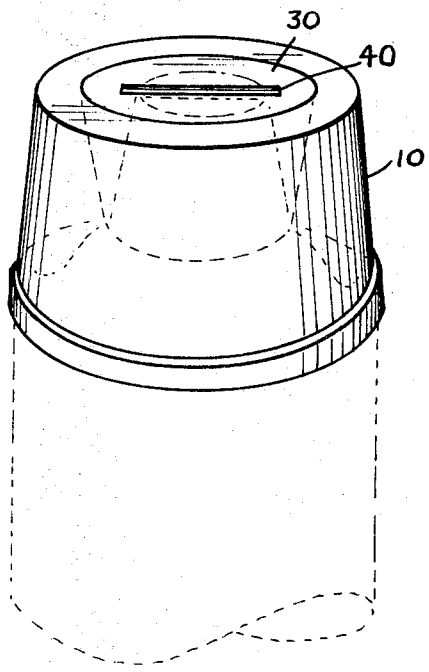


FIG. 1

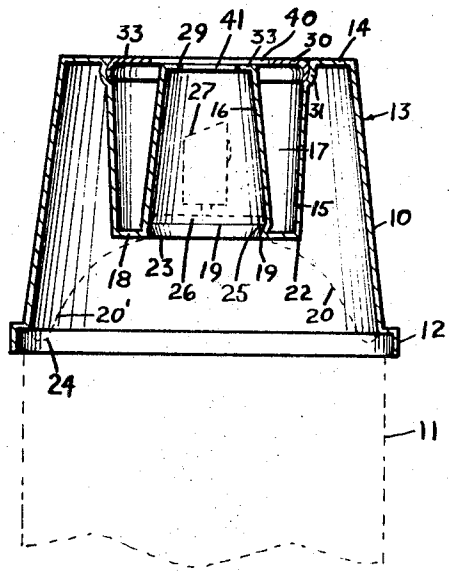


FIG. 2

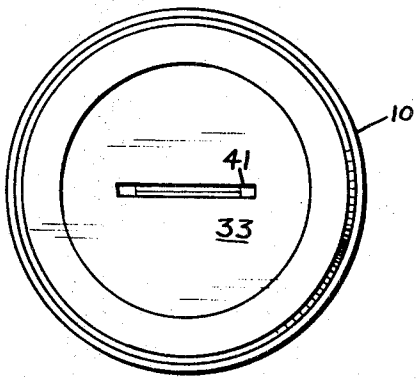


FIG. 3

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DIRECTIONAL CLOSURE FOR A CONTAINER

STATEMENT OF INVENTION

This invention relates to caps and, more particularly, to caps for aerosol cans.

CROSS REFERENCE TO OTHER APPLICATIONS

This is a continuation in-part of U.S. Pat. application, Ser. No. 704,885, filed Feb. 12, 1968, now U.S. Pat. No. 3,438,537, and Ser. No. 775,040, filed Nov. 12, 1968, now U.S. Pat. No. 3,421,651.

OBJECTS OF THE INVENTION

It is, accordingly, an object of the invention to provide an improved tamperproof cap.

Another object of the invention is to provide a tamperproof cap which is simple in construction, economical to manufacture, and simple and efficient to use.

Another object is to provide a tamperproof cap for an aerosol can wherein means is provided to fracture an inner wall of the cap.

DESCRIPTION OF DRAWINGS

FIG. 1 is an isometric view of a cap according to the invention;

FIG. 2 is a longitudinal cross-sectional view of the cap shown in FIG. 1; and

FIG. 3 is a top view of the cap shown in FIG. 1.

DETAILED DESCRIPTION OF THE DRAWINGS

Now with more particular reference to the drawings, FIGS. 1 through 3 show the combination of cap and can according to the invention. The cap 13 has an outer cylindrical sidewall 10 terminating at its open end in a rim 12 and closed at its end opposite the rim by an annular top 14 that is integrally connected to the cylindrical outside wall 10 and integrally connected to the intermediate wall 15 at 31. The intermediate wall 15 is generally concentric to the inner wall 16 and is integrally connected to the inner wall 16 by means of an annular bottom 18 which forms the bottom of the groove 17 between the intermediate wall and the inner wall. The inner wall may have an inwardly extending bead 19 or lip that may be in the form of spaced dents or in the form of a continuous annular bead which is made to be disposed in a groove 23 in the can and underlie the seam that defines a downwardly extending shoulder. The can 11 has a breast 20 of a type that will be familiar to those skilled in the art that terminates at its lower edge in an annular groove 24 and the rim 12 of the cap overlies the seam of the can just above the groove 24 and just outward from the groove 24. This cap could terminate in a straight end that could terminate in the groove 24, FIG. 2 or it could engage the can body at the inner edge of the groove.

The breast 20 terminates at its upper edge in a roll 25. It may have the mounting cup for the can indicated at 26 rolled into it in a conventional manner. A valve 27 will be supported in the center of the valve-mounting cup likewise in a conventional manner. Thus the cap 10 may be supported on the can 11 by means of the bead 19, as shown, or the outer rim could snap into the groove 23 and frictionally engage the walls of the groove around the outer periphery of the breast at 20'. The rim of the cap could engage the can as shown in U.S. Pat. No. 2,973,114, U.S. Pat. No. 3,022,922, U.S. Pat. No. 3,032,234 and U.S. Pat. No. 3,136,453.

The closed end 29 is disposed generally in a plane which is parallel to the plane containing the closure 33 and in the same plane with the annular top 14. The outer peripheral edge of the disklike closure 33 is received in groove 31 which is

formed in the intermediate wall 15 and around the inner edge of the upper end of the wall 15 so that disklike closure 33 may snap into the groove and form a closure for the end of the cap, thus forming a convenient space for advertising and an improved stacking service.

The inner wall and closed top area has a slotlike channel into which a coin would be inserted to a desired depth. A twisting action of the coin will then apply force at two points against the center top. This force will cause a splitting of the solid inner top and also the inner wall which will then release the underlying protrusions from their locking position under the mounting cup rim, in turn releasing the cap from the can when a pull pressure is applied to cap.

A slot 40 is formed in the closure 30 and a slot 41 is formed in the end 29. Thus a coin may be inserted through the slot 40 and into the slot 41 and rotated. This will cause the inner wall 16 to split axially down through the bead 19. Thus the bead can increase in circumferential dimension and be easily removed from the can.

We claim:

1. The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:
   - a cap for a can comprising;
   - a cuplike body having an outer generally cylindrical wall terminating in a rim defining an opening adapted to receive the valved end of an aerosol can;
   - an intermediate wall and an inner wall;
   - said inner wall being disposed inward of said outer wall and generally concentric thereto;
   - said intermediate wall being disposed between said cylindrical wall and said inner wall;
   - means connecting said intermediate wall to said inner wall at the end thereof adjacent said rim;
   - means rigidly connecting said cylindrical wall to said intermediate wall and spaced from said rim and from said means connecting said intermediate wall to said inner wall;
   - a disklike closed end integrally attached to said inner wall remote from said opening;
   - said cap having an inwardly extending member on the end of said inner wall adjacent said intermediate wall;
   - said inwardly extending member engaging said can around the cover thereof being adapted to hold said cap in place on said can;
   - a radially extending slot in said closed end; and
   - said slot being adapted to receive a circular disk adapted to be twisted whereby said inner wall and said inwardly extending member is fractured.

2. The cap recited in claim 1 wherein said inwardly extending member comprises a bead and said intermediate wall is adapted to be fractured through said bead.

3. The cap recited in claim 2 wherein a groove is formed in the inner upper part of said inner wall adjacent the top thereof; a disklike closure is disposed in said groove; and a rectangular slot in said disklike closure, said disklike closure being adapted to be rotated to bring said slot in said disklike closure to overlie said slot in said closed end to receive a coin through both of said slots.

4. The cap recited in claim 2 wherein said cap is disposed on an aerosol can having a valve-mounting cup having an outwardly and downwardly facing shoulder; and said bead is snapped under said shoulder.

5. The cap recited in claim 2 wherein said bead is made up of a plurality of spaced protrusions.

6. The cap recited in claim 5 wherein said rim has an outwardly extending annular shoulder, and an annular rim attached to said shoulder; said annular rim overlying the end of said can outward of said breast.