Aug. 5, 1969 R. F. HENDRICKSON ET AL 3,459,322

FRANGIBLE CLOSURE FOR A CONTAINER

Filed Feb. 12, 1968

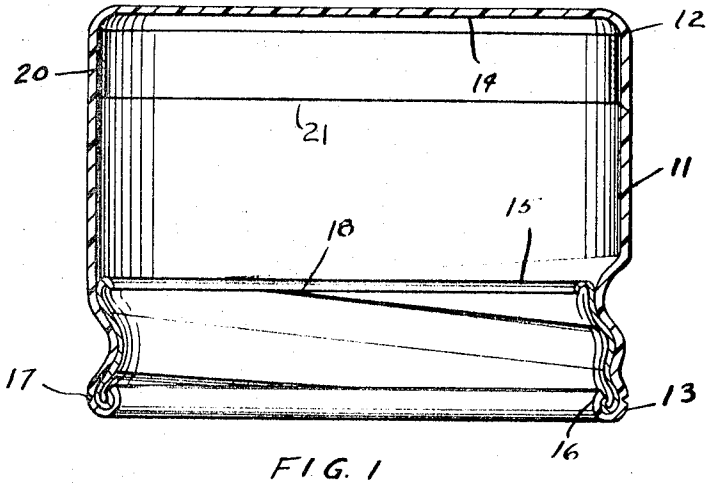


FIG. 1

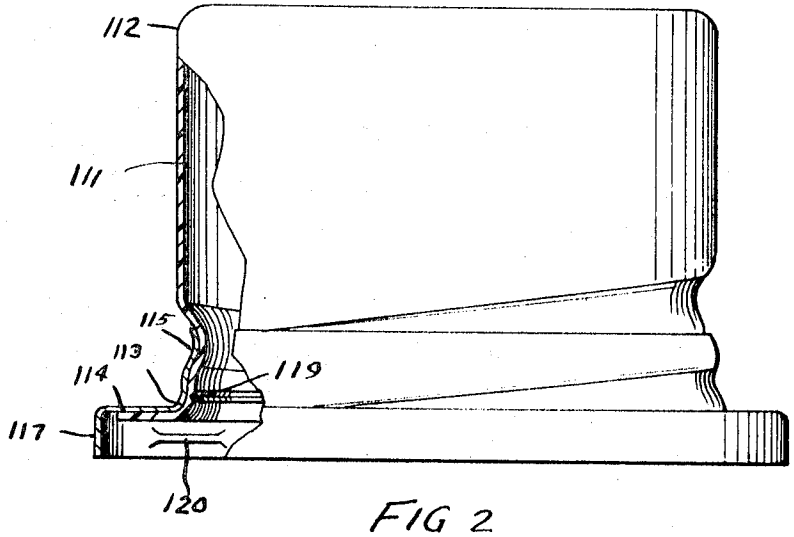


FIG 2

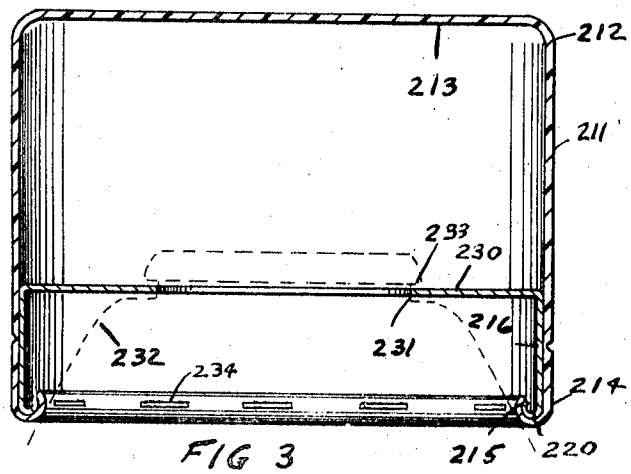


FIG 3

INVENTORS
RICHARD F. HENDRICKSON
RODERICK V. KING
Charles L. Lovercheck
Attorney

United States Patent Office 3,459,322
Patented Aug. 5, 1969

3,459,322

FRANGIBLE CLOSURE FOR A CONTAINER

Richard F. Hendrickson, Erie, and Roderick V. King, Girard, Pa., assignors to Sterling Seal Company, a corporation of Pennsylvania

Filed Feb. 12, 1968, Ser. No. 704,721
Int. Cl. B65d 41/00
U.S. Cl. 220—27 6 Claims

ABSTRACT OF THE DISCLOSURE

The disclosure herein provides a cap suitable for use with an aerosol container or the like wherein the cap itself is made of a relatively thin, fairly flexible plastic material and a reinforcing ring made of a relatively rigid metal, is placed inside the cap adjacent the closed end and another reinforcing ring around the inside adjacent the rim at the open end. The plastic can be curled inwardly to hold the ring. The ring can be made to snap over a rim on the container to hold it in place permanently until some tamper-proof element is removed. Any suitable tamper-proof structure can be applied.

This invention relates to aerosol caps and the like and more particularly to caps commonly known as tamper-proof caps.

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

Another object of the invention is to provide an improved cap for a container.

Another object is to provide an improved cap and container combination.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

FIG. 1 is a longitudinal cross-sectional view of the cap according to the invention;

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

FIG. 3 is a longitudinal cross-sectional view of another cap according to the invention.

Now with more particular reference to the drawings, the cap shown in FIG. 1 has a generally cylindrical body portion **11** having a first end **12** and a second end **13** with a closed end **14** integrally fixed to the cap at first end **12**. The second end **13** receives a metal ring **15** which may be generally cylindrical in formation but may be threaded as shown and the body of the cap may be formed around it and curled around it at **16** to hold the ring in position. The cap may be scored around its periphery at **17** so that the upper part of the cap may be removed from the can, thus rendering it tamper-proof. The central part of the ring at **18** may be curled. The outside surface of the ring **15** is in contact with the inside surface of the cap over substantially the entire area of the ring.

A second ring **21** could be inserted in the first end **12** of the cap at **20** to reinforce the cap.

In the embodiment of the invention shown in FIG. 2, the cap has a cylindrical intermediate part **111** having a first end **112** closed by a suitable closure and a second end **113** that is flared outwardly at **114** and has a ring **115** having rolled threads on it. The ring **115** has a generally cylindrical part **117** that is generally concentric

to the cylindrical part **111**. A scored line **119** in the cap is provided so that cap can be ruptured at the scored line and so that the upper part of the cap can be screwed out of the ring **115** while the dents **120** may be disposed under the upper rim of an aerosal can or it could be snapped under notches such as notches **234** shown in FIG 3.

In the embodiment of the invention shown in FIG. 3, the cap shown is like those in FIGS. 1 and 2 and is made of relatively thin material and has the intermediate cylindrical portion **211** with a first end **212** closed by a closure member **213**, and a second end **214** curled to form a bead **215** around the lower end of the ring **216**. The ring **216** is curled at its open end at **220** inside curled bead **215**.

The annular part **230** of the ring has an opening **231** that receives the open end of an aerosol can **232** and snaps under a shoulder **233**. Notches **234** may snap under overhanging bead **215**.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

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

1. A cap for an aerosol can or the like comprising a generally cylindrical body having a first end and a second end closed at said first end and open at said second end,
said body being made of relatively thin material,
a ring made of relatively rigid material attached to said open end generally concentric thereto,
said rim of said cap adjacent said second end being formed around a portion of said ring whereby said ring is held in position on said cap,
the outside surface of said ring being generally coextensive with end in intimate contact with the inside surface of said cap over substantially the entire outside surface of said ring.

2. The cap recited in claim I wherein said ring has a first end and a second end,
said first end of said ring being spaced from said open first end of said cap,
said second end of said cap being curled around said ring,
said first end of said ring having a radially inwardly extending flange,
said flange defining a central opening adapted to receive the valve assembly of an aerosol can.

3. The cap recited in claim **2** wherein a scored line is formed in said cap substantially entirely around it and spaced from said second end at substantially the midposition of said ring whereby said cap can be separated into two parts at said second line.

4. A cap for an aerosol can or the like comprising a generally cylindrical body having a first end and a second end closed at said first end and open at said second end,
said body being made of relatively thin material,
a ring made of relatively rigid material attached to said open end generally concentric thereto,
said rim of said cap adjacent said second end being formed around a portion of said ring whereby said ring is held in position on said cap,
said cap being flared outward forming an annular member generally parallel to said closed end at its second end,
said ring is formed to overlie a generally cylindrical part of said cap adjacent said open end,

said ring is likewise formed to overlie said radially outwardly extending portion,

said ring is formed to overlie a generally cylindrical portion generally concentric to said cylindrical part of said cap.

5. The cap recited in claim **3** wherein said cap has a thread formed therein adjacent said second end.

6. A cap for an aerosol can or the like comprising a generally cylindrical body having a first end and a second end closed at said first end and open at said second end,

said body being made of relatively thin material,

a ring mae of relatively rigid material attached to said open end generally concentric thereto,

said rim of said cap adjacent said second end being formed around a portion of said ring whereby said ring is held in position on said cap,

said cap being flared outward forming an annular member generally parallel to said closed end at its second end,

said ring is formed to overlie a generally cylindrical part of said cap adjacent said open end,

said ring is likewise formed to overlie said radially outwardly extending portion,

said ring is formed to a second generally cylindrical portion generally concentric to said cylindrical part of said cap,

said second cylindrical portion having dents formed therein,

said dents being adapted to resiliently engage a downwardly facing portion of a can.

References Cited

UNITED STATES PATENTS

2,262,021	11/1941	Lockwood	220—39
2,492,847	12/1949	Coyle et al.	220—39
3,001,657	9/1961	Gamble	220—27

GEORGE T. HALL, Primary Examiner

U.S. Cl. X.R.

215—42; 220—39; 222—182