United States Patent

Shane

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[54] SNAP OPEN BOTTLE CAP

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[52] **U.S. Cl.** .....**215/42**, 220/47, 215/46 A

[51] **Int. Cl.** **B65d 41/20**

[58] **Field of Search** .....215/42, 46 A, 41; 220/27, 47, 220/43 P, 69 A

[56] **References Cited**

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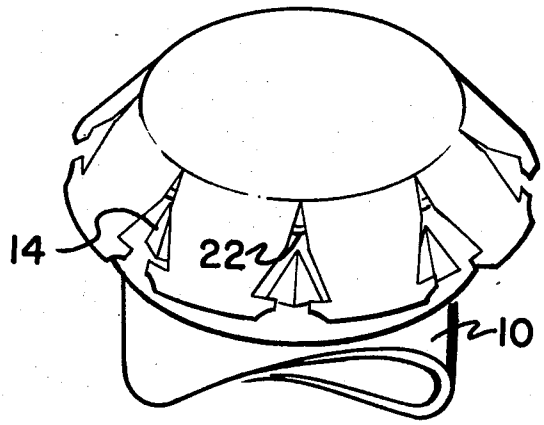
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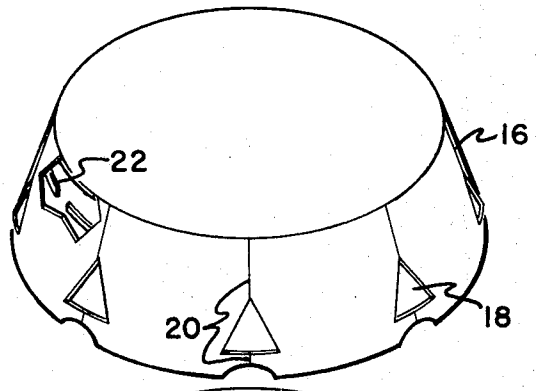
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[57] **ABSTRACT**

A bottle cap having fault lines seals a bottle provided with wedge shaped ramps which cause the fault lines to yield when pressure is applied to the top of the cap.

2 Claims, 3 Drawing Figures





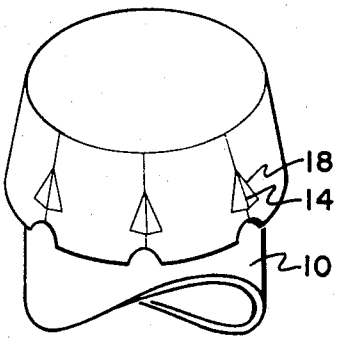


FIG. 2

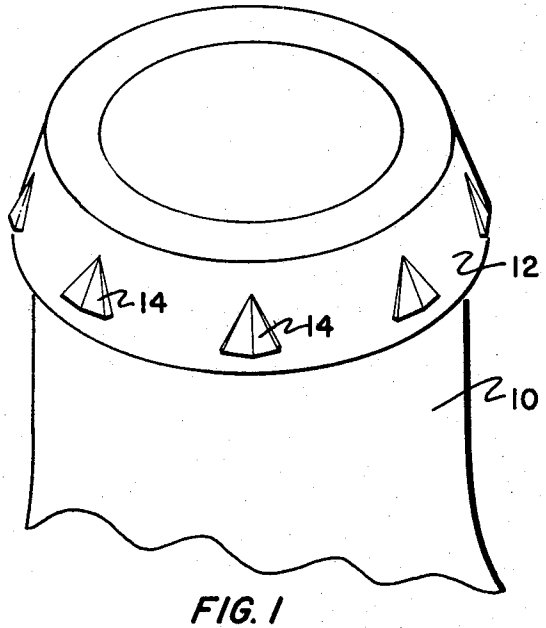


FIG. 1

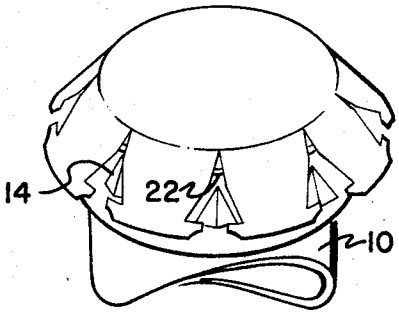


FIG. 3

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SNAP OPEN BOTTLE CAP

This invention relates generally to container closures and particularly to bottle caps which yield along fault lines when pressure is exerted to drive the cap over projections on the associated bottle thereby making the bottle contents available for use.

The crimped bottle cap of the type used for many years on soft drinks and beer bottles has the obvious disadvantage that an opener of some sort is necessary to remove the cap. Efforts have been made to provide more readily removable seals but these are difficult to operate, as in the case of the bottle caps which can be unscrewed from bottles having coarse threads molded in the glass, or are tedious to remove, as in the case of the peel apart caps which have a tab that must be lifted and the cap then pulled apart. In the instant invention the cap comprises a structure which will open up when suddenly forced over projections on the associated bottle; the sudden force is normally provided by a sharp blow with the palm of the hand. By this means the bottle is opened quickly and easily and the overall tactile impression gives pleasure to the user.

An object of the invention is to provide a rapid opening bottle cap.

A further object is to provide a bottle cap which may be opened without the use of auxiliary tools or equipment.

An additional object is to provide a bottle cap opened by a physical act of the user which creates a pleasurable tactile response.

FIG. 1 is a perspective view showing a bottle cap embodying the invention and a portion of the bottle with which it is used;

FIG. 2 is a perspective view of a bottle cap embodying the invention in sealing position; and

FIG. 3 is a similar view of the form of the invention shown in FIG. 2 after force has been applied to open the cap.

The structure shown in FIG. 1 comprises bottle **10**, a portion of which is shown, provided with a slanted sealing surface **12** and generally wedge shaped ramps or protrusions **14** disposed near the upper rim of the bottle. The matching cap comprises a generally cup shaped body **16** defining openings **18** to fit over protrusions **14** as hereinafter described. Fault lines **20**, along which parting will take place when the skirt of body **16** is placed in tension, are weakened areas which may be on the inner or outer surfaces or may extend through the material. A portion of the skirt area is cut away to show gasket **22** which provides the necessary sealing action between sealing surface **12** and the cap body **16**.

The cap in sealing position is shown in FIG. 2. It will be noted that openings **18** fit over the wedge shaped protrusions **14** so that a latching action occurs to prevent the cap from moving upwardly before the bottle is opened.

The materials of construction for the form of the invention shown in FIGS. 1 and 2 are not critical. The bottle may be molded of glass by well known techniques which enable the protrusions **14** to be formed as an integral part of the bottle. Alternatively, the material may be metal or other material with the protrusions **14** formed by a pressing operation. Similarly, the cap body **16** may be of metal or plastic. A gasket of an elastomeric sealing compound works well.

The opened bottle cap is shown in FIG. 3 with parted fault lines. The complete sundering of the cap body makes it easy to remove the remains of the cap from the bottle and also adds to the gratification experienced by the individual opening the bottle.

In the operation of the form of the invention thus far described, the cap provided with a gasket preferably cemented in place is positioned over the top of the bottle for sealing and downward pressure exerted. The pressure must be sufficient to compress the gasket material to effect a tight seal and must also drive the lower edge of openings **18** below the lower edge of protrusions **14**. The slight amount of tension in the skirt of cap body **16** will cause the material bounding the lower edges of openings **18** to spring inwardly and exert a latching action which prevents the cap from moving in an upwards direction. The downward pressure during the sealing operation must, of course, not be sufficient to cause the fault lines to spread or open. It has been found that the slope of the bottle sealing surface **12** and the thickness and hardness of gasket **14** can readily be assigned values which will result in a relatively wide and fully workable margin between the maximum sealing force and the minimum force required to start the cap removal sequence. The bottle is opened at any desired time by forcefully striking the top surface of the cap and simply lifting away the mangled remains.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A closure comprising:
   a. a container neck defining a sealing surface;
   b. a plurality of protrusions on said container neck;
   c. a generally cup shaped cap body having a plurality of openings engaging said protrusions in a latching action while in sealing position;
   d. fault lines in said cap body adapted to part when said cap body is forced over said protrusions for cap removal; and
   e. a sealing gasket disposed between said sealing surface and said cap body.

2. The invention defined in claim 1, wherein said protrusions on said container neck are generally wedge shaped.

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