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G. DALIANIS

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SAFETY BOTTLE CLOSURE

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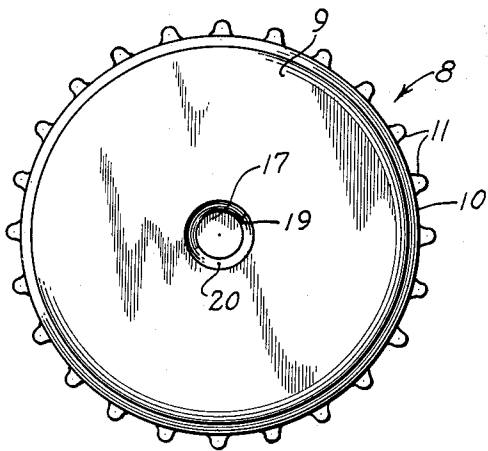


Fig. 1

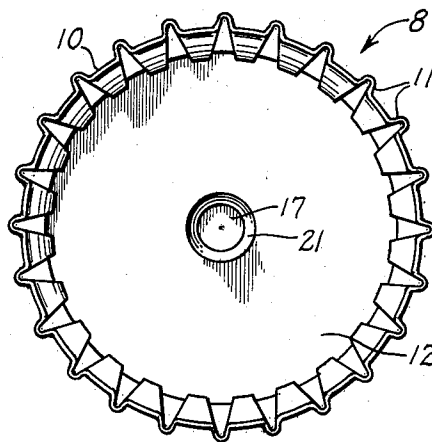


Fig. 2

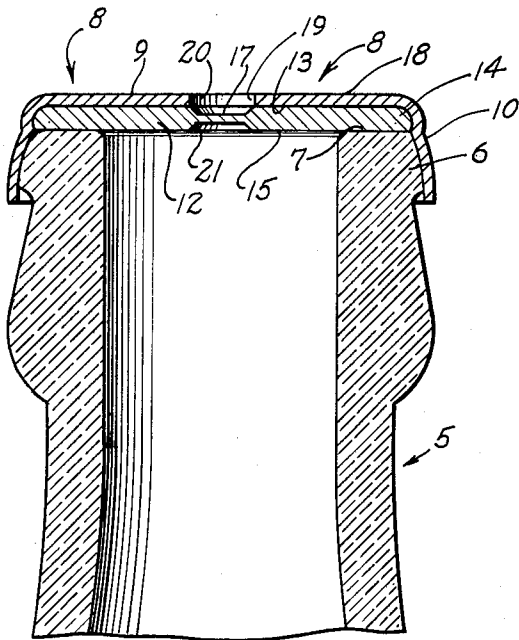


Fig. 3

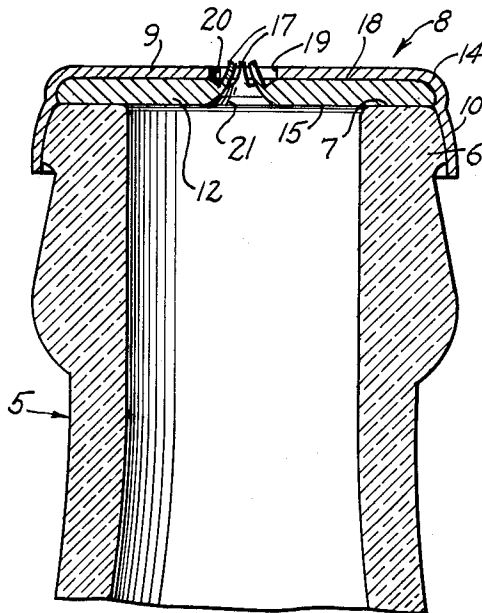


Fig. 4

INVENTOR.
George Dalianis
BY

McMorrow, Berman & Davidson
ATTORNEYS

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SAFETY BOTTLE CLOSURE

George Dalianis, Wappingers Falls, N. Y.

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1 Claim. (Cl. 215—39)

This invention relates to improvements in crown cap closures for containers, and more particularly to an improved crown cap bottle closure of the type which provides for escape of bursting pressures from within a bottle, the primary object of the invention being to provide a simpler, more practical, and more reliable closure of this kind which can be made in an attractive, rugged, and serviceable form at relatively low cost.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawing, wherein, for illustration purposes only, a specific embodiment of the invention is set forth in detail.

Figure 1 is a top plan view;

Figure 2 is a bottom plan view;

Figure 3 is a fragmentary transverse vertical section taken through a bottle neck and a closure cap in accordance with the invention applied thereto, the cap being intact; and

Figure 4 is a similar view showing the cap ruptured.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the numeral 5 generally designates the neck of a conventional bottle, such as a carbonated beverage bottle, having a lateral annular bead 6 and a terminal lip 7.

Shown applied to the bottle neck 5 is a crown cap 8 comprising a cap body preferably of metal having a disc-like top wall 9 integral at its peripheral edge with a depending annular side wall 10, formed with circumferentially spaced crimps or corrugations 11, the side wall being embracingly engaged around the bead 6 in the usual manner.

In accordance with the present invention, the usual porous, fragile, and relatively greatly compressible material sealing disc is replaced by a sealing disc 12 of material of greater density and tensile strength, such as plastic material, which nevertheless has sufficient compressibility or plasticity to form a good seal with the bottle neck lip 7 when compressed thereon by the metal cap body.

The sealing disc 12 covers the underside 13 of the cap

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body top wall 9 and has a peripheral edge 14 which engages the inner side of the cap side wall 10, and an underside 15 which engages the bottle mouth lip 7 when the cap 8 is installed under pressure.

The area of the sealing disc 12 in the region of its peripheral edge 14 is of sufficient thickness to provide for good sealing action between the cap top wall 9 and the bottle mouth lip 7. However, at a location preferably at its center the disc is provided with a relatively small and preferably circular weakened area which is preferably achieved by reducing the top and bottom of the disc so as to provide a relatively thin membrane 17 which is thin enough to rupture, as shown in Figure 4, upon development of excessive pressure within the bottle, and thereby preclude bursting of the bottle.

As shown in Figure 3, the membrane 17 is spaced from the top surface 18 of the disc and from the bottom surface 15, and is registered with a circular pressure escape hole 19 which is provided in the cap body wall 9. The disc around the opposite sides of the membrane 17 are preferably beveled, as indicated at 20 and 21, and the membrane itself is preferably smaller in diameter than the pressure escape hole 19. These formations produce more controlled and uniform disruption of the membrane without damage to the cap body.

What is claimed is:

In a safety bottle closure, a crown cap comprising a top wall having a depending crimped side wall, said top wall being provided with a central pressure escape opening of relatively small diameter, a sealing disc engaging and covering said top wall and having a peripheral edge engaging the cap side wall, said disc having top and bottom surfaces, registered indentations in the top and bottom surfaces, said indentations not being larger in diameter than said escape hole, the material between the indentations constituting a pressure frangible membrane, the indentation in the upper surface of the sealing disc having a peripheral edge beveled in a radially inward and downward direction, said upper indentation having a bottom spaced downwardly from the top wall of the cap.

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