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Scuderi

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[54] CHILD PROOF CLOSURE FOR CONTAINERS

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[52] **U.S. Cl.** **215/9**

[51] **Int. Cl.** **B65d 55/02**

[58] **Field of Search** ..... 215/9, 43 A

[56] **References Cited**

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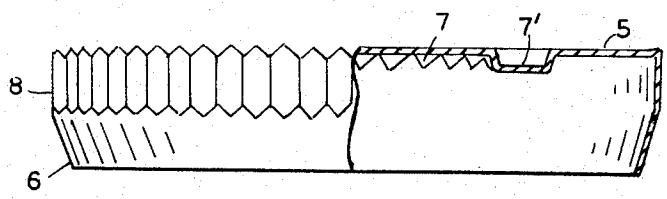
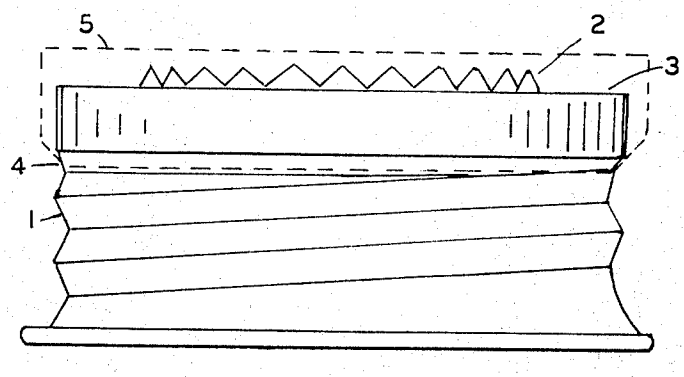
[57] **ABSTRACT**

A child proof closure for containers having a threaded neck. A screw type cap has an annular groove in the side of said cap adjacent to the top thereof, and a first circle of teeth on the top of the cap. A drive member fits over said cap and has a second circle of teeth adapted to engage said first circle of teeth when said drive member is firmly pressed down upon said cap. The drive member has a lower lip turned inwardly to engage said groove with a loose fit to permit easy rotation of said drive member when the drive member is not pressed down on the cap. It is necessary to press and turn said drive member simultaneously to unscrew said cap.

2 Claims, 3 Drawing Figures





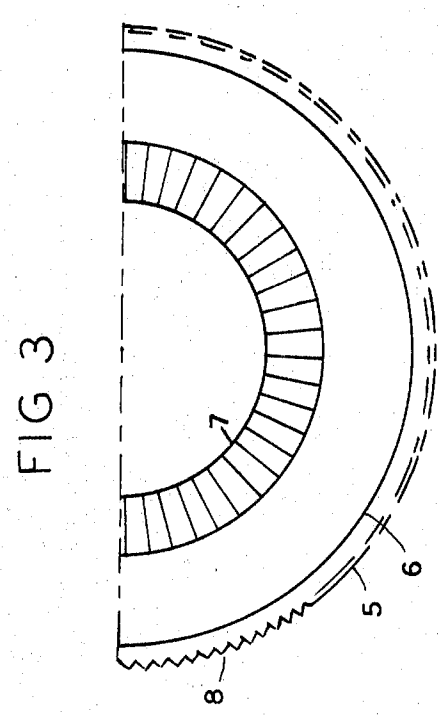


FIG 3

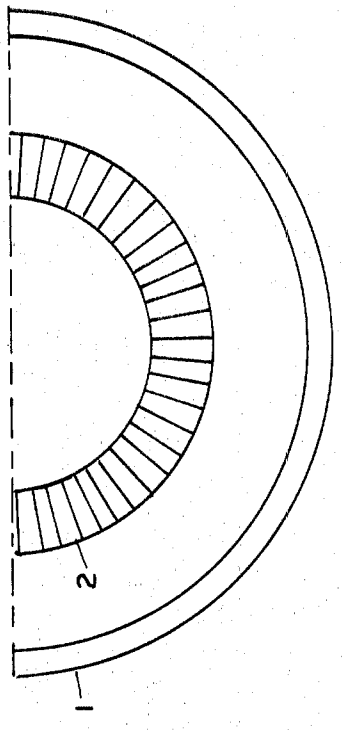
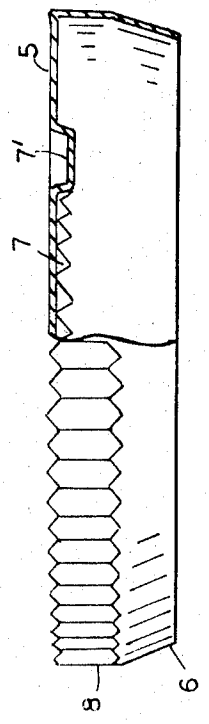


FIG 2



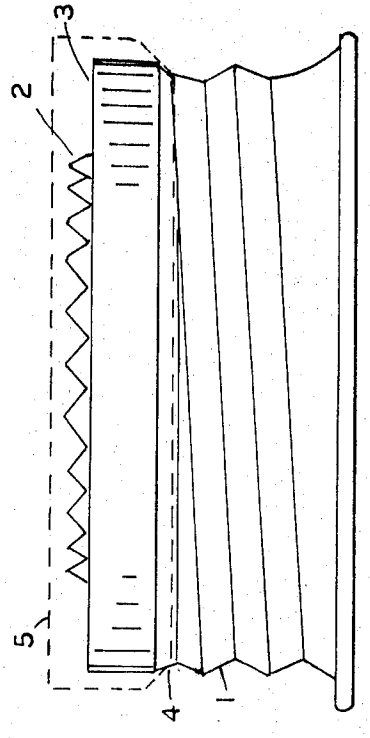


FIG 1

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CHILD PROOF CLOSURE FOR CONTAINERS

This invention relates to child proof closures for containers, such as medicine bottles.

There is a need for a closure for medicine bottles which cannot easily be opened by a child. There are a number of cases where small children have opened medicine bottles and have swallowed the contents, causing severe personal injury and death in some cases.

Accordingly, a principal object of the invention is to provide new and improved means for child proof closures for containers.

Another object of the invention is to provide new and improved means for child proof closure for containers of the type having a threaded neck.

Another object of the invention is to provide new and improved screw type closures for containers such as bottles which require simultaneous pressing and turning in order to unscrew the cap.

Another object of the invention is to provide new and improved screw type cap having a drive member loosely mounted on the cap wherein both the cap and the drive member have teeth which must be engaged by firmly pressing the drive member onto the cap and simultaneously turning in order to unscrew the cap.

Another object of the invention is to provide a new and improved child proof closure for containers having a threaded neck comprising, a screw type cap, an annular groove in the side thereof adjacent to the top thereof, a first set of teeth on the top of said cap, a drive member loosely mounted on said cap, said drive member having a second set of teeth adapted to engage said first set of teeth when said drive member is pressed down upon said cap, whereby it is necessary to press and turn said drive member simultaneously to unscrew said cap.

These and other objects of the invention will be apparent from the following specifications and drawings of which,

FIG. 1 is an exploded side view of an embodiment of the invention, partially in section.

FIG. 2 is a top view of the cap of FIG. 1.

FIG. 3 is a bottom view of the drive member of FIG. 1.

Referring to FIG. 1, the cap 1 is a screw type cap which is adapted to be screwed onto a container such as medicine bottle, of the type which has a threaded neck. The cap is conventional except for two features. First the cap has a plurality of teeth 2, which are preferably arranged in a circle and which are mounted on the top 3 of the cap, and secondly the cap has an annular groove 4, the purpose of which is to loosely retain the cap on drive member 5.

The drive member 5 has an inwardly turned lower lip 6, which is adapted to fit into the groove 4, so as to hold the drive member loosely on the cap. The drive member has a circle of teeth 7 on the interior of its upper surface which are adapted to mate with the teeth 2 of the cap 1 when the drive member is pressed down on the cap. The drive member also has a knurled portion 8 around its periphery to facilitate the gripping by the fingers of the user. The sectional view passes through

one of the teeth 7'.

The drive member is mounted on the cap and the dimensions are such that the drive member is retained loosely on the cap so that it can be easily turned without turning the cap, as shown by dotted line position.

In order to unscrew the cap, it is necessary to press firmly down on the drive member and turn it simultaneously so that the teeth of the drive member engage the teeth of the cap forming a clutch drive.

Therefore, a child merely turning the drive member will not unscrew the cap. The teeth are pointed or beveled with rounded edges so that a firm pressure is required to hold them into engagement when unscrewing the cap.

It is unlikely that a small child would be able to appreciate that it is necessary to press and turn simultaneously to unscrew the cap. Furthermore,, since the teeth are not square, a small child would not have sufficient strength to hold the teeth in engagement while unscrewing the cap.

FIG. 2 shows a top view of the cap illustrating the teeth 2, arranged in a circular configuration which is a preferable design.

FIG. 3 shows a bottom view of the drive member 5, showing the teeth 7, arranged in a circular configuration so as to engage the teeth 2 on the cap. The outer edge of the drive member contains a knurled ring 8, to facilitate gripping by the fingers of the user. The cap and drive member may be made of metal or plastic. If the parts are made of metal, the teeth may be pressed in. If the parts are made of plastic, the teeth may be molded. After the drive member is assembled onto the cap the lower lip of the drive member is turned inwardly to rest within the groove in the cap to retain the drive member loosely on the cap.

I claim:

1. A child resistant closure for containers having a threaded neck comprising:

a screw type cap,

an annular groove in the side thereof adjacent to the top thereof,

a first set of teeth on the top of said cap,

a drive member loosely mounted on said cap, said member having a second set of teeth adapted to engage said first set of teeth when said drive member is pressed down upon said cap, whereby it is necessary to press and turn said drive member simultaneously to unscrew said cap,

said cap having an annular groove in the side thereof adjacent to the top thereof and said drive member has a lower lip turned inwardly to engage said groove, said groove and lip having a loose fit to permit easy rotation of drive member when it is not firmly pressed down on said cap,

said drive member covering only the upper portion of said cap so that said cap may be directly gripped when attaching said cap to a container.

2. Apparatus as in claim 1, wherein said teeth have rounded edges so as to require firm pressure to keep said teeth engaged while turning said drive member.

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