Dec. 16, 1958 L. T. CRABBE 2,864,519

SAFETY CLOSURE FOR BOTTLE

Filed March 27, 1956

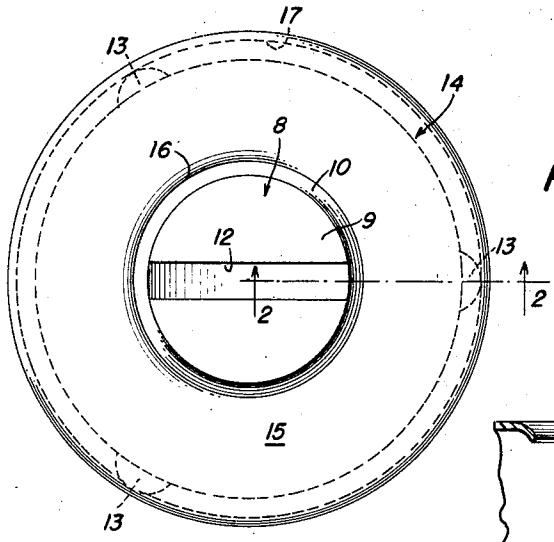


FIG. 1

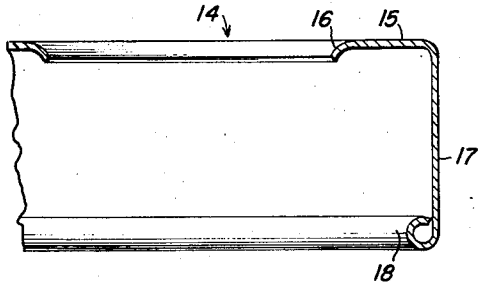


FIG. 3

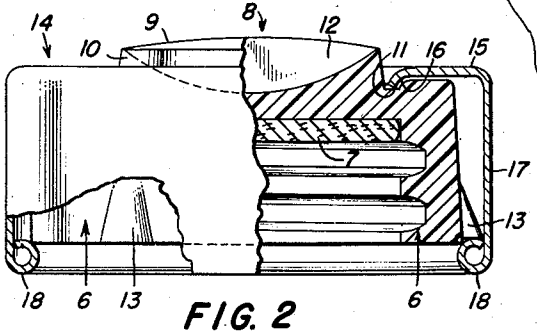


FIG. 2

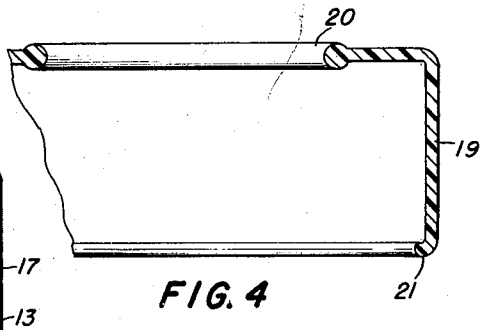


FIG. 4

LINDSAY T. CRABBE
INVENTOR

BY Mason, Portas, Miller & Stewart

ATTORNEYS

United States Patent Office 2,864,519 Patented Dec. 16, 1958

2,864,519

SAFETY CLOSURE FOR BOTTLE

Lindsay T. Crabbe, Hinsdale, Ill., assignor to Phoenix Metal Cap Company, Inc., Chicago, Ill., a corporation of New York

Application March 27, 1956, Serial No. 574,191

2 Claims. (Cl. 215—9)

The following specification describes in detail a novel improvement in safety closures for bottles and the like.

There is a very serious problem in handling small bottles of medicine, poisons and many other dangerous materials.

Ordinarily such containers are apt to be kept within reach of patients, children or others who should not have free access to the contents of the bottles. This is especially true of the case of small children who will find the bottle an attractive inducement to be opened and sampled. It will also be apparent that even though such bottles are kept in medicine chests, lockers and the like, it is important that something more than warning labels be used to prevent inadvertent persons from opening the bottles without fully considering the danger that may be present.

Many devices have been suggested to meet this problem. However, they are in the main difficult to manufacture, awkward to handle and frequently ineffective. The present invention provides a solution for the problem which has evident advantages.

One of the objects of the invention is to provide means for preventing the inadvertent or unauthorized opening of the screw cap of a medicine bottle or the like.

A further object of the invention is to provide a bottle closure, proof against tampering by unauthorized persons, particularly children.

Among the objects of the invention is to provide a guard for the screw cap so that the latter cannot be operated solely by the unaided fingers.

A still further object of the invention is to provide a device which may be easily, quickly and cheaply assembled and which can be used in all places where an ordinary screw cap is found desirable.

Other objects of the invention will be apparent from the following description of the preferred form of the invention as illustrated in the accompanying drawings in which

Fig. 1 is a plan view of the improved safety screw cap closure;

Fig. 2 is a side view, partly in cross-section on the line 2—2 of Fig. 1;

Fig. 3 is a partial vertical cross-section of the safety collar of metal and

Fig. 4 is a similar cross-section of the safety collar in non-metallic material.

Briefly described the invention consists in providing a screw cap with a shell or collar which completely covers all parts of the cap except a small central area of the top. This shell may be made of any cheap, convenient material and once attached will remain in place preventing movement of the cap by the fingers alone. The shell moreover is proof against removal by the ordinary hand implements that may be available. In assembly and when applied to the screw top of a bottle, the shell may be freely rotated without, however, loosening the inner screw cap. To effect the unscrewing of the cap, it will be necessary to use some flat implement to apply unscrewing force centrally of the cap.

Referring to the drawings it will be found that the screw-threaded cap 6 is provided as a closure for a medicine bottle and the like in the usual manner. This screw cap is generally of conventional form. It contains a liner 7 by which the cap seals the contents of the bottle.

The top 8 of the cap is generally flat. However, its central portion 9 forms a protuberance or dome that rises slightly above the flat top 8. The dome 9 has a sloping side 10. The side goes below the level of the top 8 to form a concentric channel 11.

The dome 9 has a diametric groove which forms a circular channel for the reception of a coin, knife blade or similar flat object.

The screw cap 6 has a substantially cylindrical outer surface flaring slightly toward the bottom. Near the bottom the side wall of the cap has a series of spaced lugs 13. In the form illustrated, these lugs 13 are spaced equally around the periphery at 120 degrees apart. These lugs flare outwardly toward the bottom, as shown in Fig. 2.

The cover guard or protecting element of the closure is in the form of a shell 14. This shell is made of sheet material and has a flat top 15 which is annular in form. The top 15 has an inner rim 16 which is brought into the channel 11 so that no projecting edge is accessible.

The side walls 17 of the shell 14 are substantially cylindrical. The inner diameter of the shell proper is substantially the same as the overall diameter of the cap 6 and its lugs 13. At its bottom, its edge is curled inward to form a bead 18.

The shell is assembled on the cap 6 by being slipped down over the latter. When the bead 18 contacts the sloping walls of the lugs 13, the side of the shell 14 can be deflected by slight effort so that the bead is spread opposite each of the lugs 13 and readily dropped down over them.

The shell then resumes its circular form and contacts all lugs uniformly. After being thus put in place, there is slight if any probability of the shell being distorted enough to be removed from the cap by ordinary means. This is especially true where the cap comes down close to the shoulder of the bottle and thus prevents access to the bead.

When in final, assembled position, the rim 16 is carried loosely within the channel 11, but also inaccessible.

After assembly the shell 14 is loose enough to be rotated freely without transmitting any turning effort to the cap itself.

As shown in Figs. 2 and 3, the shell 14 is made of ductile sheet metal of any suitable gauge capable of being drawn or otherwise formed in the final desired shape.

It is, however, possible to provide a collar 19 as shown in Fig. 4 from moldable plastic resins. In this case an upper rim 20 is provided to fill the channel 11 while a bead or curl 21 can be readily sprung down over the spaced lugs 13. Molding resins are particularly suitable for providing slight resilience or distortion to permit the assembly of the shell on the cap proper.

It has been found that thus providing a loosely revoluble shell over the greater portion of the surface of the screw cap, no turning can be given to the latter.

The slight dome 9 is also proof against any loosening movement by the fingers alone. In fact it has been found that the cap can be screwed far enough on the neck of the bottle by finger pressure on the dome, but that any reverse movement is impossible.

It is to be expected that in applying the closure to a bottle, the top will be given a final turn by using the edge of a coin or other flat object in the groove of the dome. Thereafter the tight cap will resist any inadvertent or unauthorized opening effort, especially by the young child.

The invention has been specifically described in its pre-

ferred form. However, many changes in materials, proportions and form may be carried out without departing from the scope of the invention as defined by the following claims.

What I claim is:

1. A safety closure for a bottle and the like comprising a screw cap having a top with a central dome, and a channel around the dome and a substantially cylindrical side wall, a series of rigid spaced lugs projecting from the lower portion of the side wall, and a rotatable cylindrical shell in spaced relation around said cap and having a top resting on the top of the cap with its inner edge in said channel, and an internal peripheral bead on the shell fitting loosely below said lugs.

2. A safety closure for a bottle and the like comprising a screw cap having a top with a central dome, and a channel around the dome and a substantially cylindrical side wall, a series of rigid spaced lugs projecting from the lower portion of the side wall, and a rotatable cylindrical shell in spaced relation around said cap and having a top resting on the top of the cap with its inner edge having a downturned rim in said channel and an internal peripheral bead on the shell fitting loosely below said lugs.

References Cited in the file of this patent

UNITED STATES PATENTS

1,276,768	Hoyle et al.	Aug. 27, 1918
2,359,639	Hanahan	Oct. 3, 1944