Sept. 4, 1956

B. N. DANIEL

2,761,337

CONICAL SCREW CAP REMOVER

Filed April 29, 1954

FIG. 1

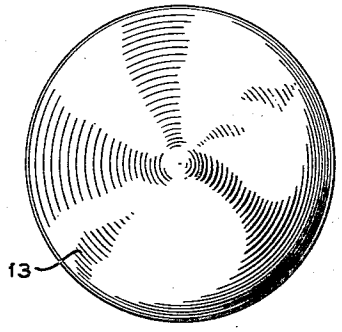


FIG. 2

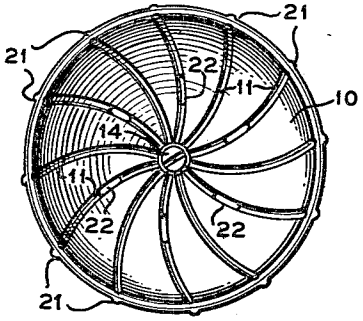


FIG. 3

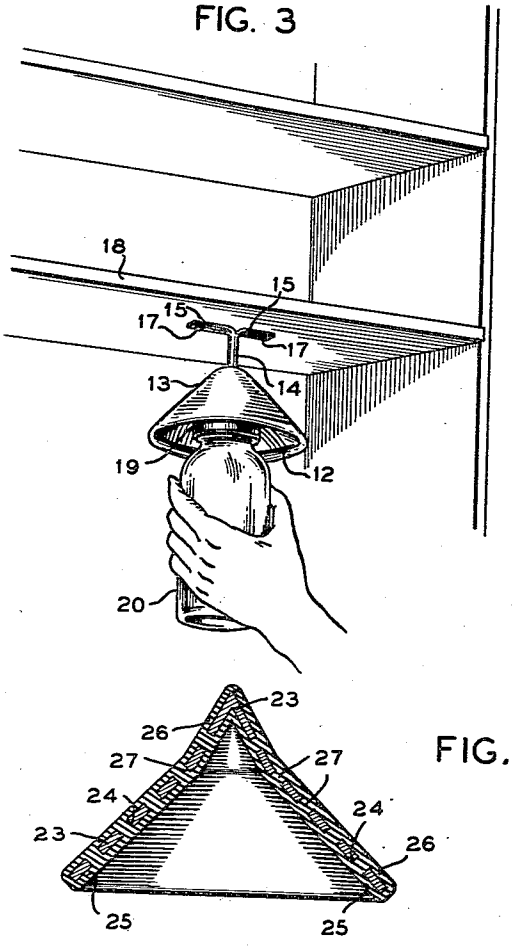


FIG. 4

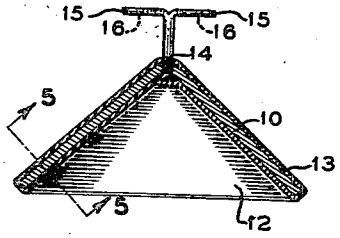


FIG. 5

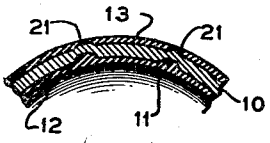


FIG. 6

INVENTOR.

B. N. DANIEL

BY A. Yates Dowell

ATTORNEY

United States Patent Office

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CONICAL SCREW CAP REMOVER

Blake N. Daniel, Bronx, N. Y.

Application April 29, 1954, Serial No. 426,428

8 Claims. (Cl. 81—3.4)

This invention relates to articles employed in the home and elsewhere, and more particularly to implements or tools used in everyday life in and about the house and in other places where it is desired to remove a screw cap from a container.

Specifically, the invention relates to openers for the screw caps of bottles, jars, or other containers, which caps are of varying sizes and it is necessary that they be tightly gripped and rotated in order to loosen and remove the same and is a continuation-in-part of my application Serial No. 284,338 filed April 25, 1952, now abandoned.

Various types of devices have been utilized in attempting to remove screw caps of varying sizes including those used for fruit jars and other containers ordinarily found around the home. Although numerous devices have been produced for loosening screw caps of various types, a single structure capable of removing caps varying in size from those which are relatively large to those which are quite small has not been available.

It is an object of the invention to provide a simple, inexpensive device by means of which a screw cap may be easily removed from a container whether large or small and which device can be mounted on a suitable support or manipulated independently of such mounting, and operated to effectively perform the function for which it was designed.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a top plan view of one application of the invention;

Fig. 2, a bottom plan view with the surface coating removed;

Fig. 3, a perspective of the device with a handle added and illustrating how the device may be mounted;

Fig. 4, a vertical section through the device of Fig. 3;

Fig. 5, a section on the line 5—5 of Fig. 4; and

Fig. 6, a vertical section of the remover per se of the preceding figures with perforations providing greater intimacy between the coating and base and with a pair of internal annular surfaces disposed at different angles, the smaller portions being suitable for removing small caps from bottles of fingernail polish or the like.

Briefly stated, the invention comprises a conical body having a relatively short axis so that screw caps of jars may be inserted into and against the inner surface of the same and removed by a rotating action. The smaller the cap the further it will extend into said body.

Referring to the drawing, a conical base or body **10** may be formed of relatively rigid metal, plastic, or other suitable substance and preferably with rough or irregular surface to facilitate intimate engagement with a surface coating of rubber-like or other material, capable of providing a gripping action when engaged by the hand as well as when a screw cap is engaged for loosening the same. The surface may be made rough or irregular in numerous ways, as for example by sanding, by spiral or

arcuate grooves **11** which are best shown in Figs. 2 and 5.

To the base is intimately applied a surface coating having inner and outer portions **12** and **13** and in or through the apex of the base may be a shank **14** of a handle having oppositely disposed arms **15** with openings **16** for the application of fasteners **17** by means of which the device may be attached to the underside of a shelf **18** or other support as shown in Fig. 3. When thus mounted a cap **19** of a jar or other container **20** may be inserted and the jar or container rotated for removing the cap.

If desired the device of Fig. 1, without the handle applied thereto, may be fitted in the palm of the hand and applied over the screw cap of a container and rotated for loosening or removing the cap. Also, if preferred the device may be used unmounted and the handle employed to increase the ease or leverage with which the device can be rotated.

The grooves **11** on the inner surface of the body form ribs **21** on the exterior of the body and assist in the uniting of the surface material to the base. This intimacy of engagement may be implemented by the provision of one or more openings **22** in the base or body **10** as shown. Also, the extra material in the grooves **11** and about the ribs **21** assist in both the gripping of the device and the cap to be unscrewed.

While the body **10** is described as a cone having a relatively short axis, it will be understood that the axis of the body will correspond to the diameter and axial length best suited for caps or closures to be removed. To increase the usefulness of the device an internal gripping surface may be provided with internal annular surfaces disposed at different angles, such surfaces constituting portions of cones having axes of different lengths and walls at different angles, for example, as disclosed in Fig. 6.

In the structure illustrated in Fig. 6 a relatively rigid cone structure **23** is provided, the same as in the preceding figures, however, in order to provide a more intimate bonding of the inner and outer surface coatings the body **23** may have numerous perforations **24** distributed over the same so that the inner and outer coatings **25** and **26** of rubber, plastic or other substance capable of providing a gripping surface may have integral connections **27** for enhancing the effectiveness and insuring the inner and outer surface coatings from separation under normal conditions of use. The interior of the apex or smaller portion of the body **23** is designed to grip the screw cap of a bottle of fingernail polish or other container having a cap of relatively long pointed character while the larger portion is suited to engage larger less tapered caps.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawing and described in the specification, but only as indicated in the appended claims.

What is claimed is:

1. A jar cap remover comprising a hollow relatively rigid conical body having a relatively short axis, the interior surface of said body being provided with a plurality of arcuate spiral grooves emanating outwardly from the apex of the cone, the exterior surface of said body being provided with a plurality of arcuate spiral ridges complementary to said grooves and located in alignment therewith, said body being provided with a plurality of spaced apertures providing communication between certain of said grooves and the ridges associated therewith, and a coating of rubberlike material intimately bonded to the interior and exterior surfaces of said body to provide a unitary structure, the material of said coat-

ing projecting through the apertures in said body, the coating on the interior surface of said body providing a ridged surface for gripping engagement with a jar cap receivable within said remover.

2. In a jar cap remover as set forth in claim 1, a handle for said body fixedly secured to the apex of the cone and extending outwardly therefrom whereby the device may be selectively secured to a support or manually grasped so that the cap of a jar may be pressed against the interior surface of the cone and the jar rotated for removing the cap therefrom.

3. A jar cap remover comprising a hollow, relatively rigid generally conical body with a portion having a relatively short axis and a second portion having a relatively long axis and with the walls of said portions disposed at different angles, said body having an irrgeular surface with perforations distributed over the same including spiral grooves with its interior between its opposite sides defining an angle of substantially 90°, a coating of rubber-like material intimately bonded to said body and providing a surface on the interior of said body for gripping engagement with a jar cap of a size corresponding to that of the interior of said hollow body, and a handle for said body by means of which the device may be manipulated and also by means of which the device may be attached to a support and held so that the cap of a jar may be pressed against the interior of said cone and the jar rotated for loosening said cap.

4. A jar cap remover comprising a hollow relatively rigid generally conical body including porttions with axes of different lengths, one relatively short and one relatively long and with the walls of said portions disposed at different angles, a coating intimately bonded to said body and providing a gripping surface on its interior of a character to grippingly engage a screw cap in either of the portions of said body corresponding to that of the size of the screw cap, said jar cap remover having a capacity for engagement with both flat and sharply tapered screw caps.

5. A jar cap remover comprising a hollow relatively rigid generally conical body including portions with axes of different lengths, one relatively short and one relatively long and with the walls of said portions disposed at different angles, a coating intimately bonded to said body and providing a gripping surface on its interior of a character to grippingly engage a screw cap in either of the portions of said body corresponding to that of the size of the screw cap, said jar cap remover having a capacity for engagement with both flat and sharply tapered screw caps, said body having perforations and said coatings covering the exterior and interior of said body and

providing an external surface capable of being readily held against slippage in the hand and with bonding connections between the interior and exterior coatings located in the openings in said body.

6. A jar cap remover comprising a relatively rigid conical body having a relatively short axis and a hollow extension having a relatively long axis to accommodate screw caps of long and short axes, and a grip facilitating coating on the interior and exterior of said body; said extension having walls of a steeper taper than the walls of the conical body.

7. A jar cap remover comprising a hollow relatively rigid substantially conical body having a relatively short axis, a plurality of spiral grooves on the interior surface of the body, a plurality of spiral ridges on the exterior surface of the body, said body having a plurality of spaced apertures and a coating of rubber-like material covering the interior and exterior surfaces of said body and intimately bonded to said body providing a unitary structure, the material of said coating projecting through the apertures in said body, the coating on the interior surface of said body providing a surface for gripping engagement with a screw cap of a size corresponding to that of the interior of said hollow body and the coating on the exterior surface of said body providing a hand-gripping surface by means of which the device may be rotated to loosen said cap.

8. A jar cap remover comprising a hollow relatively rigid generally conical body including wall portions disposed at different angles and having axes of different lengths, one relatively short and one relatively long, a coating intimately bonded to said body on both its interior and its exterior and providing a gripping surface on its interior of a character to grippingly engage a screw cap in either of the portions of said body corresponding to that of the screw cap for applying pressure to rotate the same in either direction, and providing an exterior surface by which said jar cap remover being capable of engagement with both flat and sharply tapered screw caps.

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