

[54] CONTAINER HAVING SNAP-ON, TWIST-OFF CAP 3,826,397 7/1974 Atkins..... 215/295

[75] Inventor: John A. Foster, Rockford, Ill.

Primary Examiner—George T. Hall  
Attorney, Agent, or Firm—Wolfe, Hubbard, Leydig,  
Voit & Osann, Ltd.

[73] Assignee: J. L. Clark Manufacturing Co.,  
Rockford, Ill.

[22] Filed: June 6, 1974

[21] Appl. No.: 476,937

[57] ABSTRACT

[52] U.S. Cl. .... 215/295; 215/296; 215/318;  
215/320

The cover is adapted to be snapped tightly onto the body to establish a good seal between the cover and the body and yet may be easily removed with a simple turning motion. When the cover is turned, coacting teeth on the cover and the body cam against one another to release the snap-fit and permit removal of the cover.

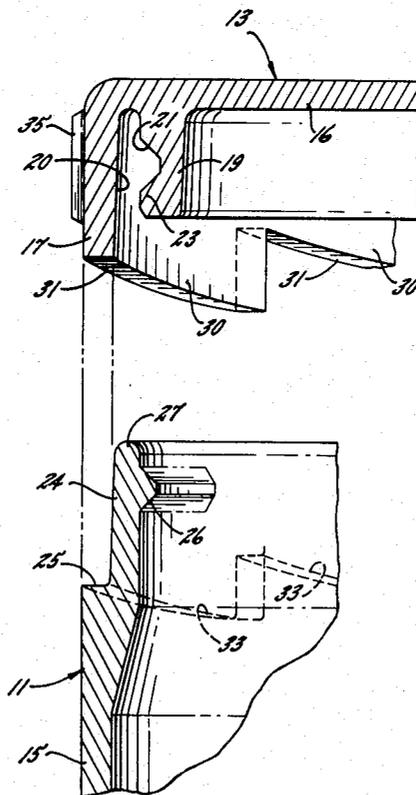
[51] Int. Cl.<sup>2</sup>..... B65B 43/38; B65B 43/40;  
B65D 17/00; B65D 39/00

[58] Field of Search ..... 215/295, 296, 318, 320

[56] References Cited  
UNITED STATES PATENTS

3,677,431 7/1972 Westfall ..... 215/318

6 Claims, 6 Drawing Figures



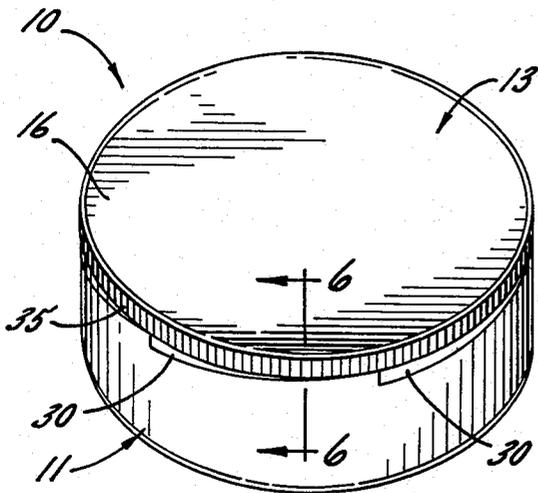


Fig. 1.

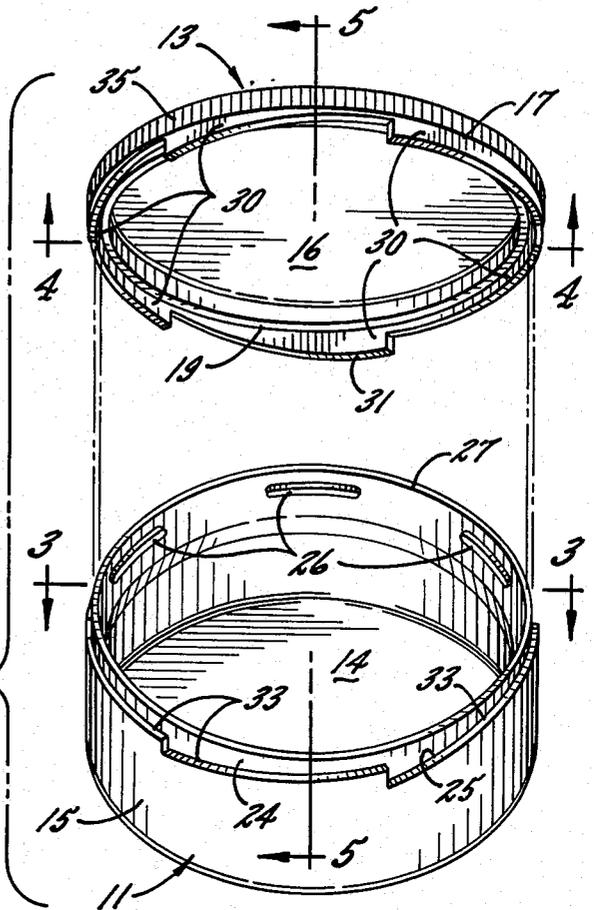


Fig. 2.

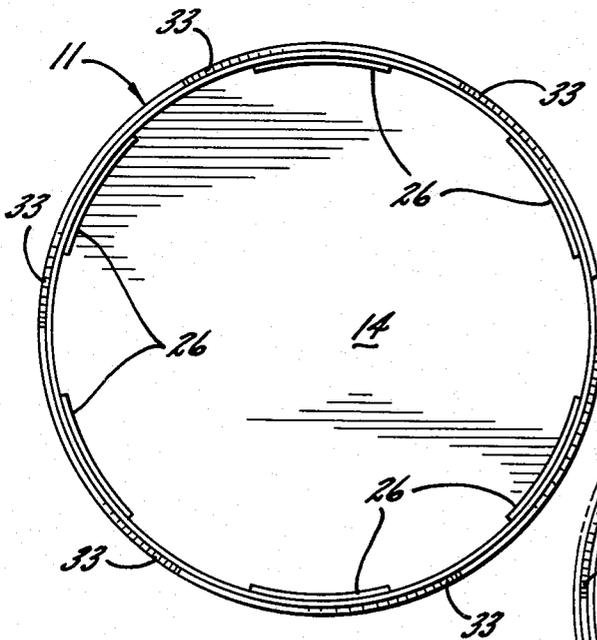


Fig. 3.

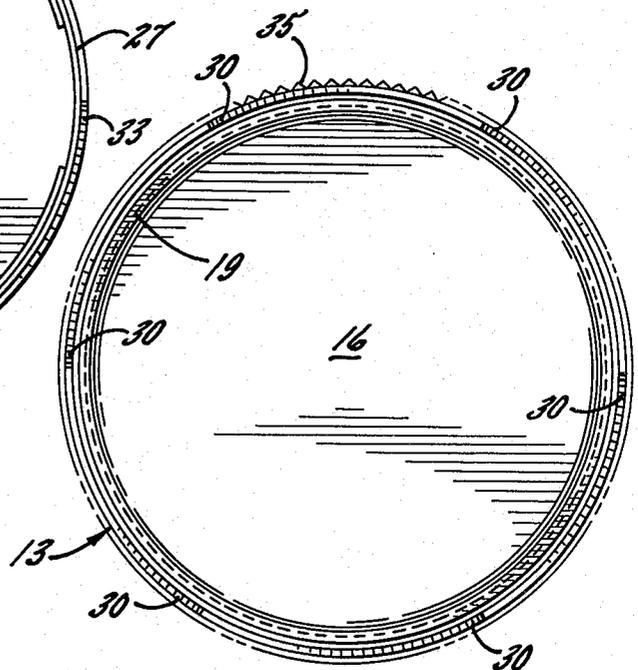


Fig. 4.

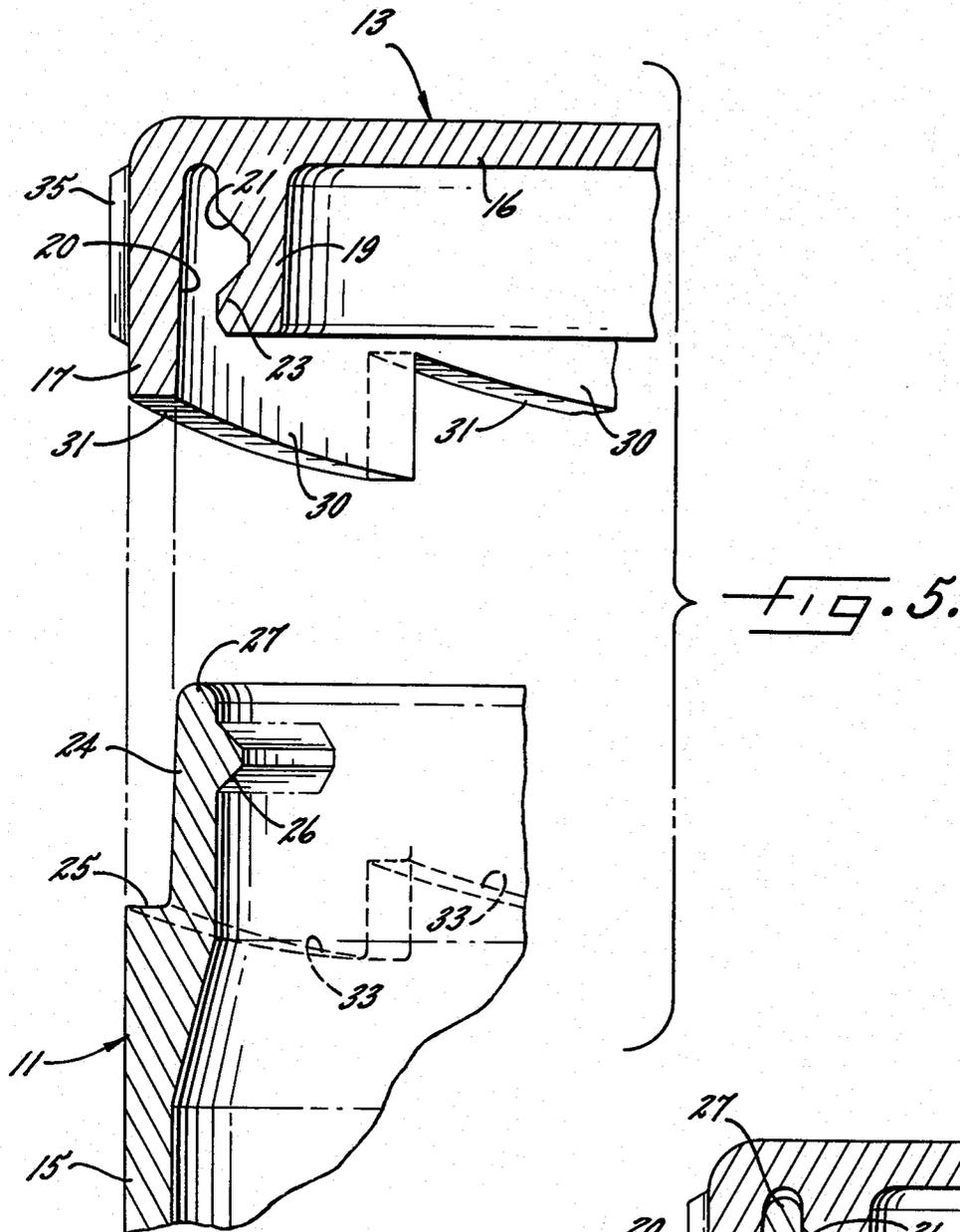


FIG. 5.

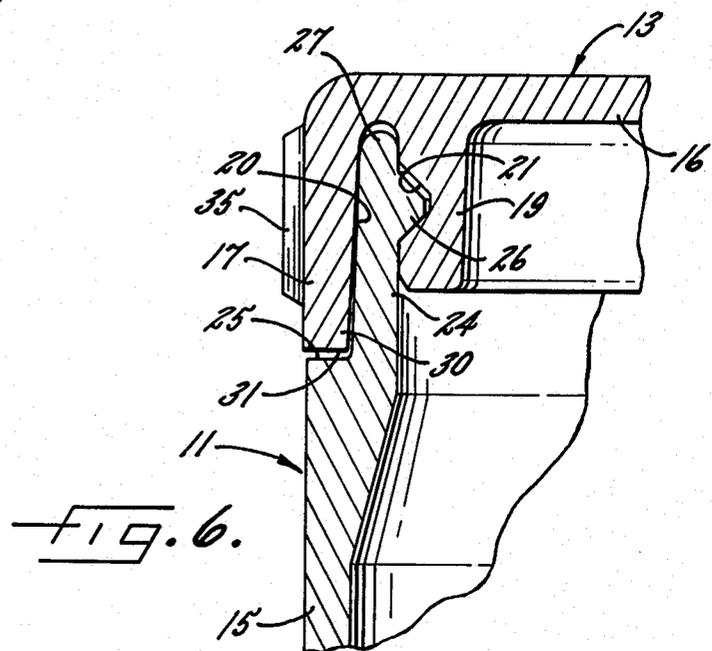


FIG. 6.

## CONTAINER HAVING SNAP-ON, TWIST-OFF CAP

## BACKGROUND OF THE INVENTION

This invention relates generally to a container and more particularly to a container of the type having a cup-shaped cover adapted to telescope with the container body to close the latter.

## SUMMARY OF THE INVENTION

The primary aim of the present invention is to provide a new and improved container of the above character in which the cover may be snapped tightly onto and sealed against the body and yet, in spite of the tight fit, may be easily removed with a simple turning motion.

A related object is to provide a unique container having a snap-on, screw-off cover which may be tightly sealed to and easily removed from the body.

In a more detailed sense, the invention is characterized by the provision of a container with a cup-shaped body and a cup-shaped cover whose free edges are formed with unique teeth which, when the cover is rotated, cam against one another to overcome the snap-fit between the cover and the body and effect removal of the cover.

The invention also resides in the novel construction of the cover and the body to enable the container to be formed with an attractive cylindrical shape.

These and other objects and advantages of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a new and improved container incorporating the novel features of the present invention.

FIG. 2 is an exploded perspective view of the container.

FIGS. 3 and 4 are enlarged plan views taken along the lines 3-3 and 4-4, respectively, of FIG. 2.

FIG. 5 is an enlarged fragmentary cross-section taken substantially along the line 5-5 of FIG. 2.

FIG. 6 is an enlarged fragmentary cross-section taken substantially along the line 6-6 of FIG. 1.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in the drawings for purposes of illustration, the invention is embodied in a container 10 which comprises a body member 11 and a telescoped cover member 13, each member being generally cup-shaped with the body having a substantially greater depth than the cover. The body 11 includes a substantially flat bottom 14 and an integral axially extending circular wall 15 while the cover 13 includes a flat top 16 and an integral axially extending circular wall 17. The container 10 is particularly suited for use as a package for a tobacco product such as snuff.

In accordance with the present invention, the free edge portions of the walls 15 and 17 of the body 11 and the cover 13 are uniquely constructed to enable the cover to be snapped onto the body with a relatively tight seal and yet to permit fast and easy removal of the cover with a simple turning motion. In addition, the free edge portions are constructed so as to leave the container 10 with a substantially smooth cylindrical

wall which is streamlined in appearance and which may be neatly covered with a paper overwrap or a bandtype label.

More specifically, the cover 13 of the present invention is made of a resiliently yieldable plastic such as polypropylene and includes a circular band or skirt 19 (FIG. 5) which is formed integrally with and depends from the top 16. The skirt is spaced inwardly from and extends around the wall 17 of the cover and coacts with the wall to define a downwardly opening annular groove 20. A groove 21 of trapezoidal cross-section is formed in and extends around the inner side of the skirt and is bounded on its lower side by a bead 23 which constitutes part of the skirt.

The body 11 also is made of polypropylene and is formed with a reduced diameter band or neck 24 (FIG. 5) which projects upwardly from the upper edge 25 of the wall 15 of the body. Six nibs 26 (FIGS. 3 and 5) are molded on the inner side of the neck just below the rounded upper end 27 thereof and are equally spaced around the neck, the nibs having a shape complementary to that of the groove 21.

To close the container 10, the cover 13 is moved axially toward the body 11 to cause the neck 24 to telescope into the annular groove 20. As the cover is pressed downwardly, the bead 23 cams against and is flexed inwardly by the nibs 26 and then snaps outwardly beneath the nibs as shown in FIG. 6. In the closed position of the cover, the nibs 26 engage the lower side of the groove 21 to restrict axial removal of the cover while the rounded upper end portion 27 of the neck 24 seats against the similarly shaped upper end portion of the groove 20 to establish a seal between the cover and the body. The seal is enhanced by the fact that the lateral dimension of the neck 24 is slightly greater than the lateral dimension of the lateral groove 20 and thus the neck is gripped resiliently by the wall 17 and the skirt 19.

As pointed out above, the container 10 is constructed so that removal of the tight-fitting cover 13 may be easily effected by turning the cover relative to the body 11. For this purpose, a set of six equally spaced teeth 30 (see FIGS. 2 and 5) are formed around the free lower edge 31 of the cover wall 17 while a set of six complementary teeth 33 (FIGS. 2 and 5) are formed around the upper free edge 25 of the body wall 15, each set of teeth defining a continuous circular saw tooth. When the container is closed, the teeth 30 mate with the teeth 33 as shown in FIGS. 1 and 6 and thus the vertical edges of the upper teeth abut against the vertically extending edges of the underlying lower teeth. The other edge of each upper and lower tooth slants upwardly upon progressing in a counterclockwise direction (as viewed from the top of the container). Accordingly, when the cover 13 is turned counterclockwise relative to the body 11, the slanted edges of the upper and lower teeth cam against one another to shift the cover upwardly relative to the body. As an incident to such shifting, the bottom of the groove 21 cams against the nibs 26 to flex the skirt 19 inwardly so as to free the groove 21 from the nibs and thus release the cover for removal from the body. When snapping the cover back onto the body, the cover may be given a slight turn to bring the vertical edges of the upper and lower teeth into substantial angular alinement, assuming that the vertical edges are not angularly alined when the cover is first placed on the body.

As shown in FIG. 6, the lateral thickness of the cover wall 17 is substantially equal to the difference in the outside diameters of the body wall 15 and the neck 24. Accordingly, the two walls 15 and 17 are substantially flush with one another when the cover 13 is in place and thus, in spite of the teeth 30 and 33, the container 10 defines a smooth cylinder which may be attractively wrapped or labeled. If desired, a band 35 with a knurled surface may be formed around the cover wall 17 to facilitate gripping of the cover when the latter is turned.

From the foregoing, it will be apparent that the present invention brings to the art a new and improved container 10 having a cover 13 which may be snapped tightly onto the body 11 and which may be quickly and easily removed with a simple unscrewing motion. The container is attractive in appearance and may be constructed in a comparatively simple and low cost manner.

I claim as my invention:

1. A container comprising a cup-shaped body and a cup-shaped top cover each made of resiliently yieldable material and each having an axially extending circular wall, said body having a substantially greater depth than said cover, a circular skirt formed integrally with and depending from the top of said cover, said skirt being spaced radially inwardly from and extending around the wall of said cover and coacting with such wall to define a downwardly opening annular groove, a circular neck of reduced diameter formed integrally with and projecting upwardly from the free edge of the wall of said body and telescoped into said groove, a circumferential groove extending around the outer side of said skirt, a series of angularly spaced nibs formed integrally with and projecting inwardly from the inner side of said neck and adapted to snap into and interlock with said circumferential groove as said neck is telescoped into said annular groove, said nibs and said circumferential groove coacting to restrict axial removal of said cover from said body, and first and second sets of angularly spaced teeth formed in and extending circumferentially around the free edges of the walls of said cover and said body, respectively, each set of teeth defining a continuous circular saw tooth, the teeth of each set normally mating with the teeth of the other set but camming against the teeth of the other set during relative rotation of said body and said cover and being operable as an incident to such camming to shift said

cover axially away from said body and release said nibs from said circumferential groove so as to permit removal of said cover from said body.

2. A container comprising a single-piece, cup-shaped body and a single-piece, cup-shaped cover each made of resiliently yieldable material and each having an axially extending circular wall, said body having a substantially greater depth than said cover, a circular skirt formed integrally with and depending from the top of said cover, said skirt being spaced radially inwardly from and extending around the wall of said cover and coacting with such wall to define a downwardly opening annular groove, a circular neck of reduced diameter formed integrally with and projecting upwardly from the free edge of the wall of said body and telescoped into said groove, means on one side of said neck and the opposing side of said groove and adapted to interlock with one another with a snap fit as said neck is telescoped into said groove, said means coacting with one another to restrict axial removal of said cover from said body, and first and second sets of angularly spaced teeth formed in and extending circumferentially around the free edges of the walls of said cover and said body, respectively, the teeth of each set normally mating with the teeth of the other set but camming against the teeth of the other set during relative rotation of said body and said cover and being operable as an incident to such camming to shift said cover axially away from said body and release said interlocking means so as to permit removal of said cover from said body.

3. A container as defined in claim 2 in which each set of teeth defines a continuous circular saw tooth, the teeth of said first set being complementary in shape with the teeth of said second set.

4. A container as defined in claim 2 in which said interlocking means comprise a groove extending circumferentially around the outer side of said skirt, and a series of angularly spaced nibs projecting inwardly from the inner side of said neck and adapted to snap into and interlock with said circumferential groove as said neck is telescoped into said annular groove.

5. A container as defined in claim 4 in which the walls of said annular groove resiliently grip said neck to establish a seal between said body and said cover.

6. A container as defined in claim 2 in which the outer side of the wall of said body is substantially flush with the outer side of the wall of said cover.

\* \* \* \* \*

50

55

60

65