



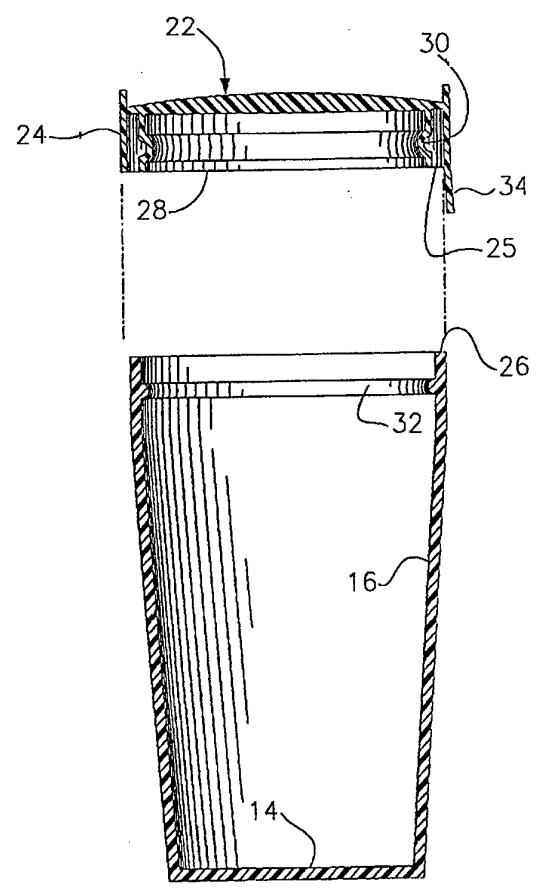
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(54) Title: CLOSURE MEMBER FOR BEVERAGE OR FOOD CONTAINERS

(57) Abstract

A container lid (22) has a depending insert (28) having a thickness sufficient to have a groove (30) formed in its peripheral edge, and a beverage container (12) has an annular, radially inwardly extending protrusion (32) formed in it that snaps into the groove when the insert is inserted into the container. The connection is sufficiently strong so that the lid will not separate from the container when the container is filled and inverted. The lid includes a peripherally positioned handle (34) that enables removal of the lid, and the interconnection between the lid and the container includes a double seal that inhibits the risk of spillage.



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## CLOSURE MEMBER FOR BEVERAGE OR FOOD CONTAINERS

## BACKGROUND OF THE INVENTION

## 1. Field of the invention

This invention relates, generally, to lids for beverage or food containers. More particularly, it relates to a lid having an insert that snaps into a container and is tightly secured thereto to inhibit inadvertent spilling.

## 2. Description of the prior art

In a well-publicized case, a customer of a fast food restaurant was scalded by hot coffee when the coffee spilled from a beverage container. Inventors have produced numerous container and lid designs over the years, but the art has not yet provided a container and lid combination that minimizes the chances that a hot beverage will be spilled inadvertently.

A 1906 patent to Kindig (822,895) discloses a bottle having a plurality of circumferentially and equidistantly spaced apart tabs integrally formed about its rim, and a closure means having a matching number of complementarily formed latches that mate with the tabs. Since the tabs must be formed as a part of the bottle, this design increases the cost thereof.

A means for effecting sealing of a container in which the container is provided with a rim having a plurality of openings therein and a sealing cover is provided with a plurality of barbs for engaging such openings is disclosed in U.S. patent No. 3,892,327 to Leitz.

U. S. patent No. 1,127,993 to Hayworth discloses a construction somewhat like that of the above-mentioned Kindig invention. A plurality of circumferentially and equidistantly

spaced apart gripping members are formed integrally with a bottle and project upwardly therefrom; each gripping member has a recess formed therein that captures a corresponding tab formed in a closure means. A special tool is needed to separate the lid from the bottle.

All of these earlier designs advanced the art at the time of their invention, but there remains a need for a design that enhances the grip between a container and its lid. Specifically, there remains a need for a design that provides a double seal between a container and its lid. In view of the prior art considered as a whole at the time the present invention was made, however, it was not obvious to those of ordinary skill in this art how the needed construction could be provided.

#### SUMMARY OF THE INVENTION

The longstanding but heretofore unfulfilled need for an improved container closure means having a double seal has now been met by an elegant design that includes a closure means with an insert having a peripheral groove that snap fittingly mates with an annular protrusion that is integrally formed in the interior cylindrical side wall of a container.

More particularly, the novel lid includes an insert of predetermined thickness and an annular groove of predetermined depth is formed in the peripheral edge of such insert. A mating annular protrusion or ridge formed in an interior side wall of a food or beverage container extends radially inwardly toward the center of the container and has a radial extent substantially equal to the depth of said groove. The lid, container and ridge are formed of a flexible, resilient material. Thus, each of said parts flexes momentarily as the insert is inserted into the container, i.e., as the ridge enters the groove, and said parts resume their respective positions of repose when the insert is fully

seated within the container, i.e., when the ridge on the container is firmly seated within the groove formed in the insert. The grip therebetween is so tight that the lid will not separate from the container even when the container is filled with a beverage or a food product and inverted and shaken in an effort to loosen the lid.

A peripherally mounted handle enables facile removal of the lid when desired, and the lid is slightly domed to reduce the likelihood of spillage when the container has been over-filled.

Thus, it should be understood that a primary object of this invention is to provide a container and lid design that prevents inadvertent separation of a lid from a container.

Another object is to provide such a design that does not defeat intentional removal of the lid from the container.

These and other important objects, features and advantages of the invention will become apparent as this description proceeds.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts that will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

#### BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the nature and objects of the invention, reference should be made to the following detailed description, taken in connection with the accompanying drawings, in which:

Fig. 1 is an exploded perspective view of a first embodiment of the novel lid and container;

Fig. 2 is a sectional view taken along line 2-2 in Fig. 1; Fig. 3 is a sectional view of the container and lid of Figs. 1 and 2 in their assembled configuration;

Fig. 4 is a top plan view of the first embodiment;

Fig. 5 is an exploded perspective view of a second embodiment of the invention;

Fig. 6 is a sectional view taken along line 6-6 in Fig. 5; and

Fig. 7 is a sectional view of the container and lid of Figs. 5 and 6 in their assembled configuration.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the Figs., it will there be seen that a first illustrative embodiment of the invention is denoted as a whole by the reference numeral 10. As depicted in Fig. 1, the novel structure has the appearance of a conventional fast food container and lid when the lid is secured to the container.

As best understood in connection with Figs. 2 and 3, container 12 has a flat, imperforate bottom wall 14 of preferably circular configuration. Cylindrical side wall 16 is mounted about the periphery of said bottom wall 14 and projects upwardly therefrom, defining a beverage or food-holding cavity 18 in the well-known way. The beverage or food is denoted 20 and may be any beverage or food at any temperature.

Lid 22 is slightly domed as depicted and includes a depending peripheral skirt 24 that frictionally engages the outer surface of rim 26 of container 12 in the well-known way.

Insert 28, which depends from lid 22 and which is positioned radially inwardly of skirt 24, has an annular groove 30 of predetermined depth formed therein. Note that insert 28 is hollow in this embodiment, i.e., it has a structure similar to that of depending skirt 24.

A radially inwardly extending ridge 32 of predetermined radial extent is formed in side wall 16 of container 12.

Note that ridge 32 is positioned downwardly a predetermined distance from rim 26 of container 12. The spacing is such that the bottom surface of lid 22 abuttingly overlies rim 26 when the lid is attached to the container as depicted in Fig. 3.

The annular space between insert 28 and depending peripheral skirt 24 is sized to snugly receive therebetween rim 26 of the container. Thus, a seal is formed where the uppermost edge of rim 26 abuts the bottom surface of lid 22. It enables a consumer to easily remove lid 22 if removal of said lid is desired. Lid 22 may also be provided with a perforated section 36 (Figs. 1 and 4) that when removed by pulling upon tab 38 enables consumption of a beverage without requiring disengagement of the lid and container. Such perforated sections and pull tabs integral therewith are well known in the art and form no part of the invention, per se.

Han

The eccentric mounting of handle 34 is novel. Even though the strength of the grip between the lid and container as provided by this invention is substantial, the peripheral mounting of said handle enables facile separation of container and lid.

Note that insert 28 has a breadth less than that of lid 22. The toroidal space 25 between the outer periphery of insert 28 and depending skirt 24 is predetermined so that rim 26 of the container is snugly received between said insert outer periphery and said depending skirt.

Note further that the breadth of insert 28 is substantially equal to the breadth of cavity 18, i.e., the internal breadth of said container. Thus, toroidal space 25 is substantially equal to the thickness of sidewall 16 of container 12.

In a second embodiment, depicted in Figs. 5-7, insert 28 is solid. This increases the structural integrity of the assembly.

Both embodiments include a double seal. The first seal is between groove 30 and ridge 32. The second seal is formed by the abutting engagement of rim 26 and the bottom of lid 22.

This invention is clearly new and useful. Moreover, it was not obvious to those of ordinary skill in this art at the time it was made, in view of the prior art considered as a whole as required by law.

It will thus be seen that the objects set forth above, and those made apparent from the foregoing description, are efficiently attained and since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matters contained in the foregoing construction or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Now that the invention has been described,



## WHAT IS CLAIMED IS:

1. A lid and container combination, comprising:

a container having a bottom wall and a side wall mounted about a periphery of said bottom wall, said side wall projecting upwardly from said bottom wall, and a cavity defined collectively by said bottom wall and side wall;

a lid having a peripheral depending skirt for releasably engaging an outer surface of a rim of said container;

said peripheral depending skirt having a breadth substantially equal to an external breadth of said container;

an insert depending from said lid;

said insert having a breadth substantially equal to an internal breadth of said container;

a space between said insert and said peripheral depending skirt being sized to snugly receive said rim of said container;

a groove of predetermined depth formed in a peripheral edge of said insert;

a protrusion formed in said side wall of said container, said protrusion extending radially inwardly toward a center of said container a predetermined distance substantially equal to the predetermined depth of said groove;

said lid and said container being made of a flexible, resilient material;

said container adapted to flex momentarily upon introduction of said insert into said container;

said lid and container adapted to resume respective positions of repose upon full seating of said protrusion into said groove; and

said seating of said protrusion into said groove providing a first seal.

2. The combination of claim 1, wherein said protrusion is positioned a predetermined distance downwardly from said

rim of said container, said rim of said container being slideably received within said space, and a second seal being provided where said rim of said container abuts a bottom surface of said lid.

3. The combination of claim 1, wherein said bottom wall is circular in configuration, wherein said side wall is cylindrical in configuration, and wherein said lid, groove, and protrusion are annular in configuration.

4. The combination of claim 1, further comprising a handle attached to said lid to facilitate removal of said lid from said container, said handle being mounted to a peripheral edge of said lid in depending relation thereto.

5. The combination of claim 4, wherein said handle includes a finger-receiving opening.

6. The combination of claim 1, wherein said insert is hollow.

7. The combination of claim 1, wherein said insert is solid.

8. The combination of claim 1, wherein said lid is domed.

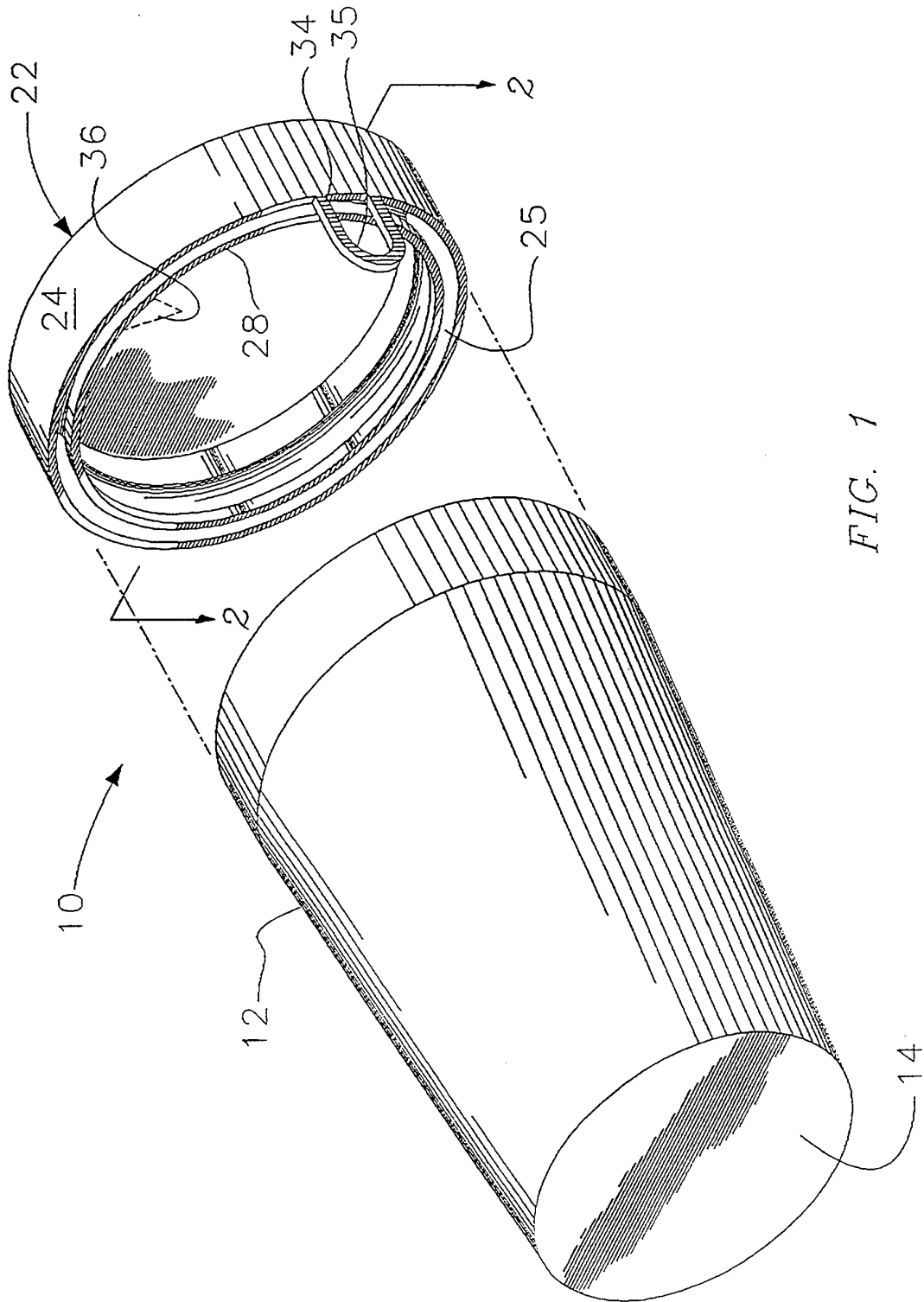
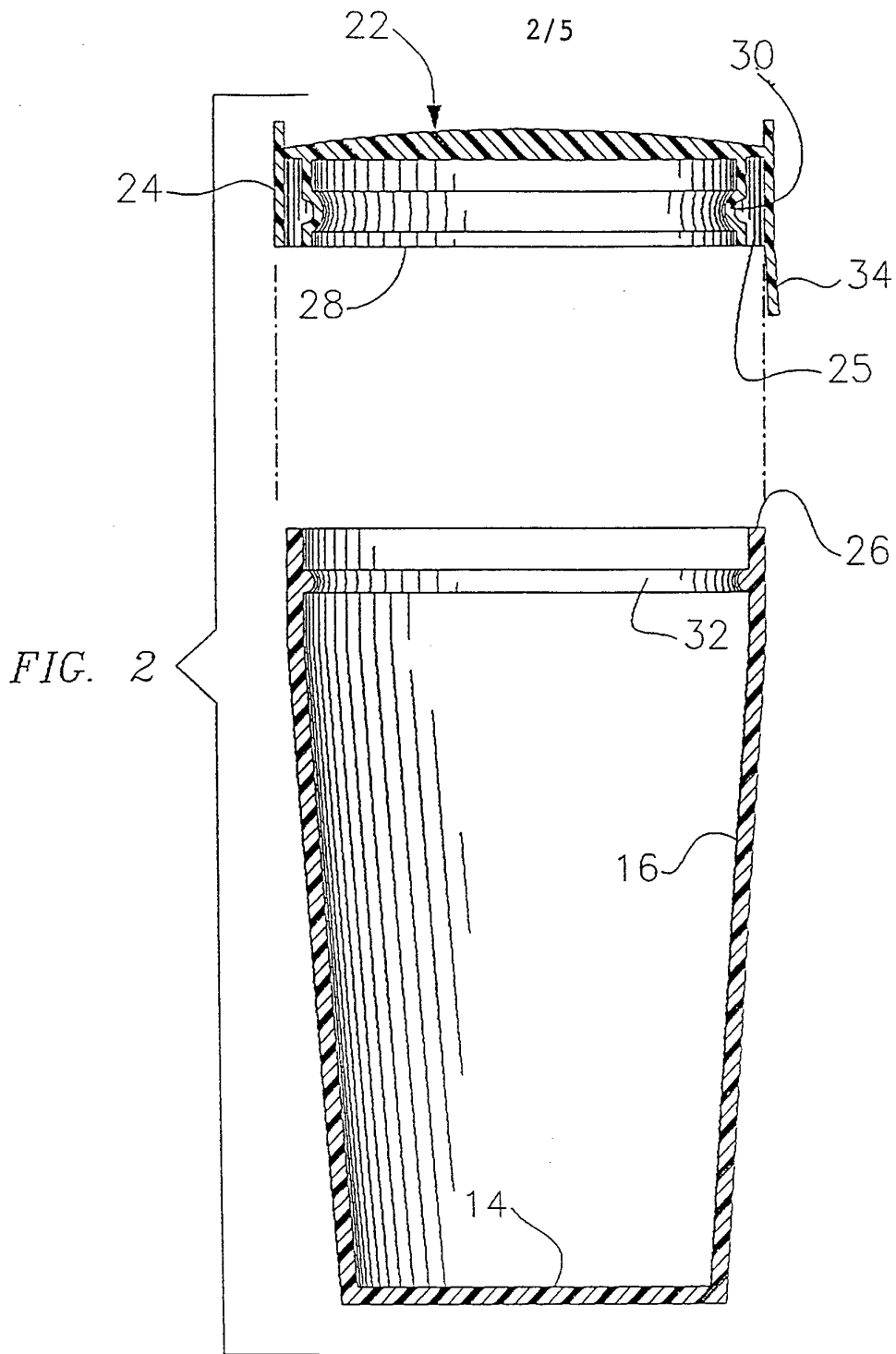


FIG. 1



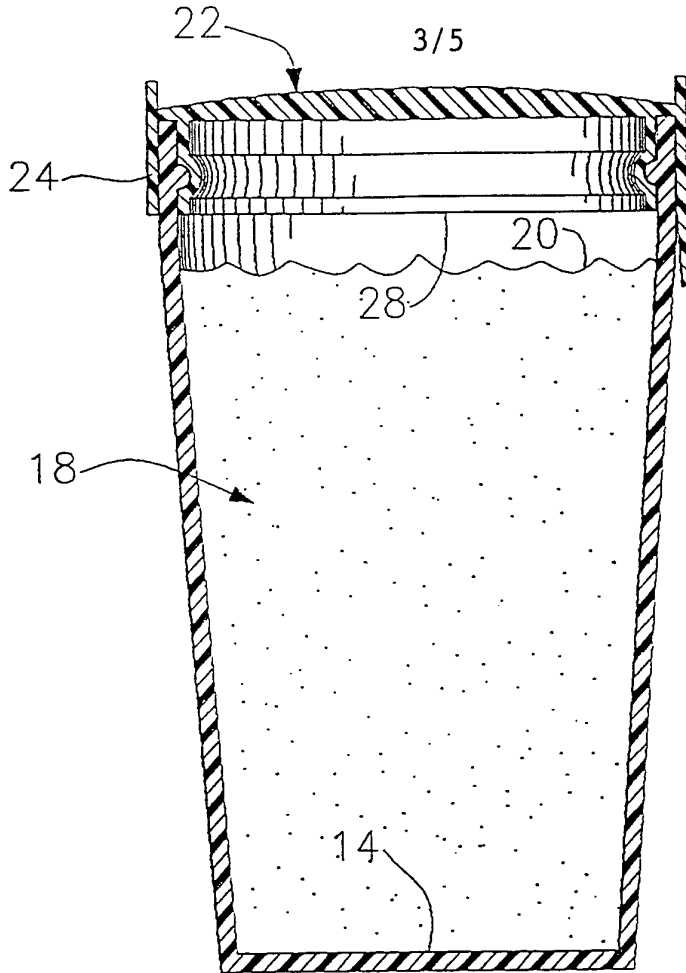


FIG. 3

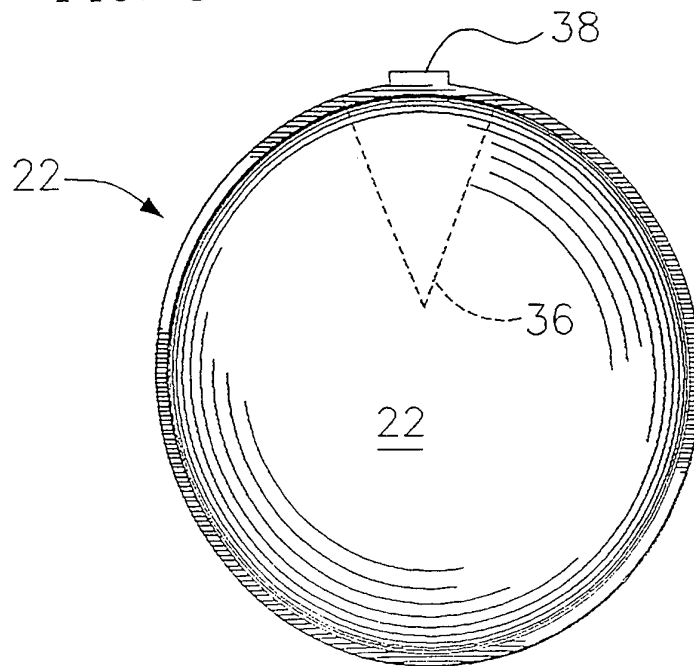


FIG. 4

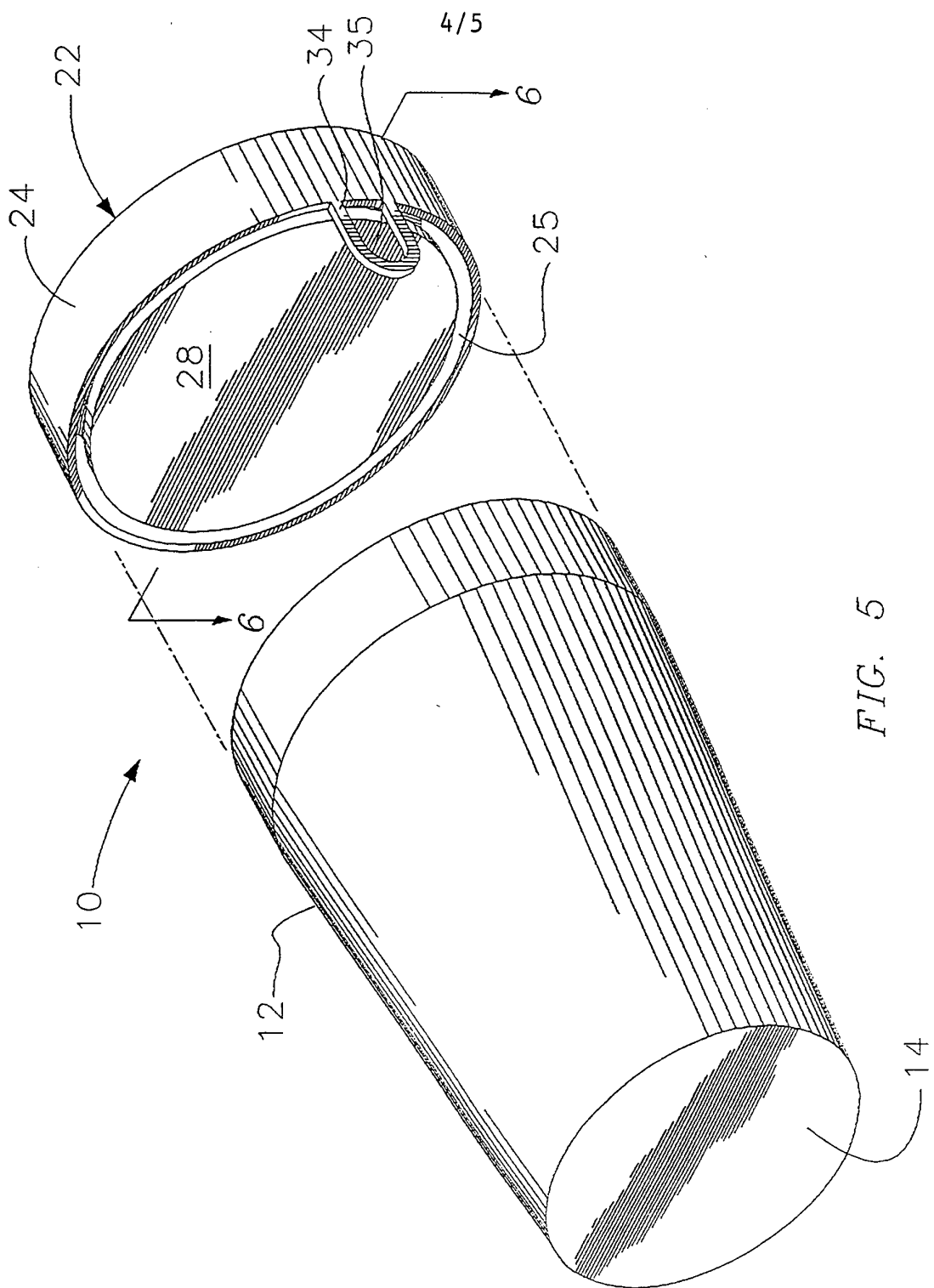


FIG. 5

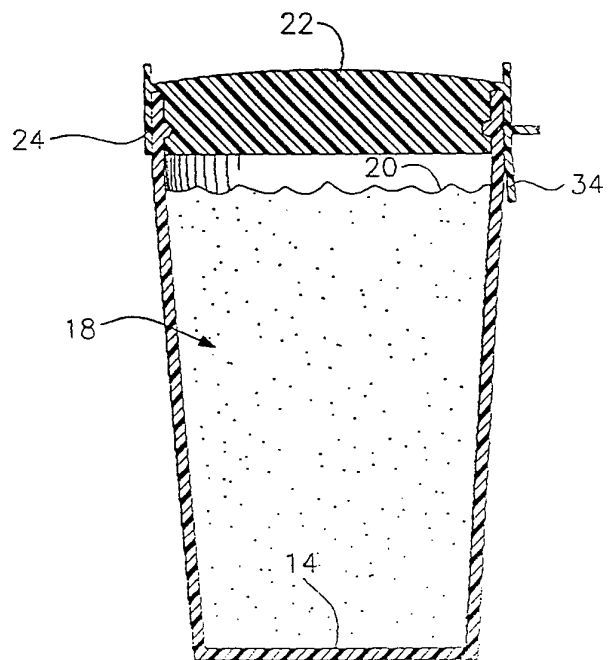
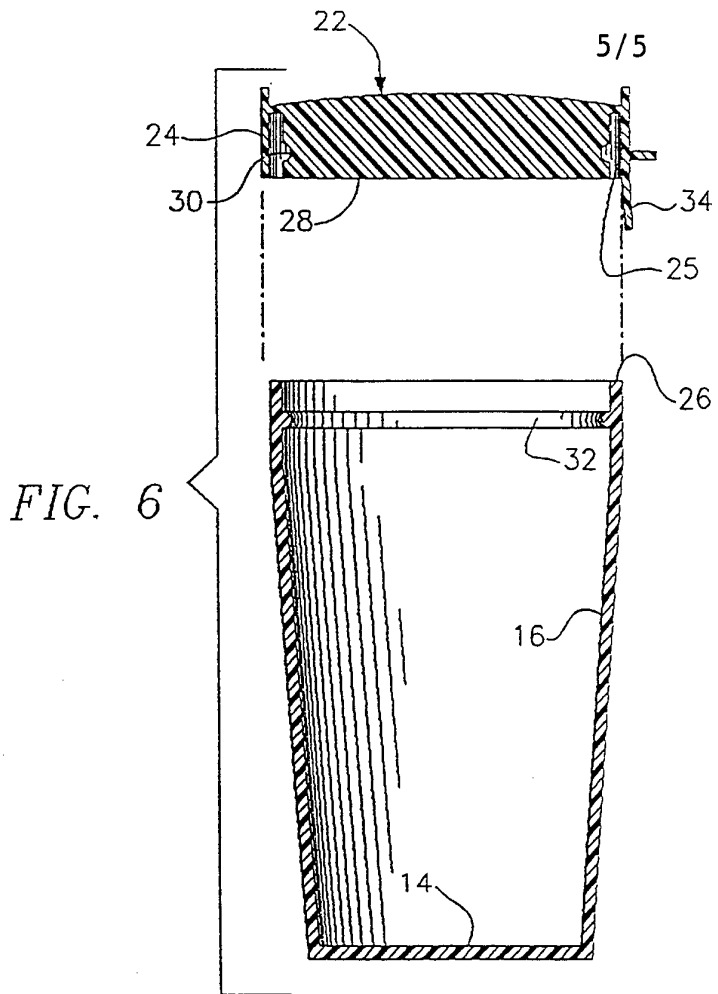


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US96/07818

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A47G 19/22; B65D 39/00  
US CL :220/307, 712

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 220/212.5, 307, 710.5, 711, 712; 215/318, 320, 321, 354, 355, 356

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2,487,400 A (TUPPER) 08 November 1949 (08/11/49), see entire document, especially figures 3 and 8 and column 2 lines 27-44.	1-4, 7, 8 ----- 5, 6
Y	US 3,860,162 A (SCHUTZ) 14 January 1975 (14/01/75), see entire document.	1-5, 7, 8
Y	US 5,253,780 A (ADADO) 19 October 1993 (19/10/93), see entire document, especially figures 6 and 7 and column 5 lines 3-55.	1-5, 7, 8
Y,P	US 5,472,542 A (WERMUND) 05 December 1995 (05/12/95), see entire document, especially figure 4 and 5.	1-6, 8
Y	US 4,393,976 A (MAGUIRE) 19 July 1983 (19/07/83), see entire document, especially figure 3 and column 5 lines 13- 41.	1-6, 8

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US96/07818

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,144,950 A (ROSENHEIM) 18 August 1964 (18/08/64), see figure 4.	5