Jan. 27, 1970 H. H. EELKEMA 3,491,907

BREAK-AWAY CONTAINER

Filed Aug. 12, 1968

FIG. 1

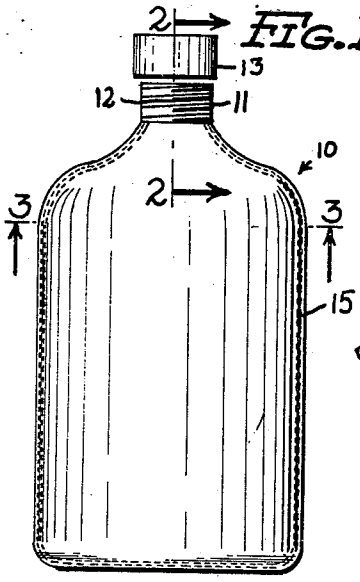


FIG. 2

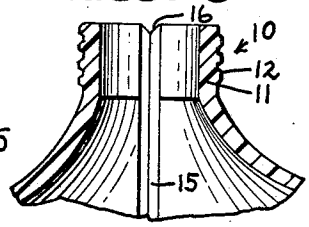


FIG. 3

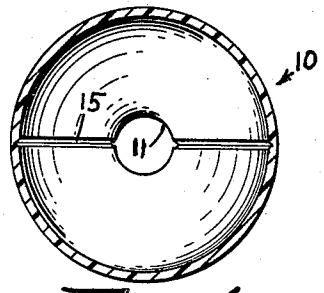


FIG. 4

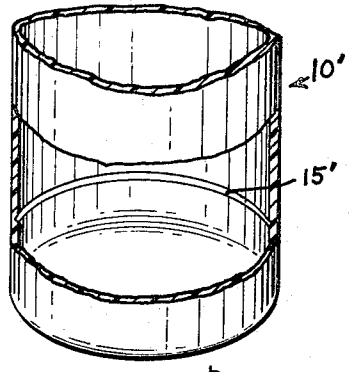


FIG. 6

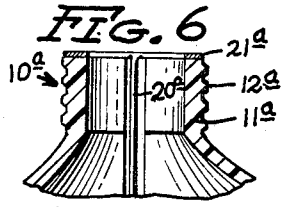


FIG. 5

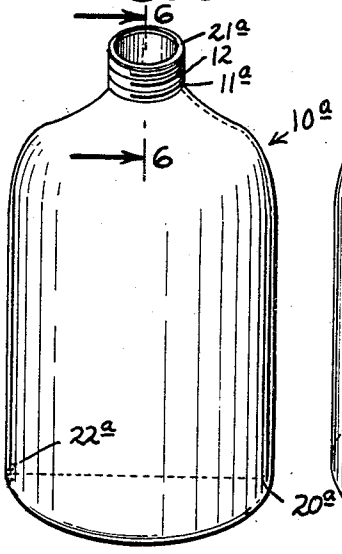


FIG. 7

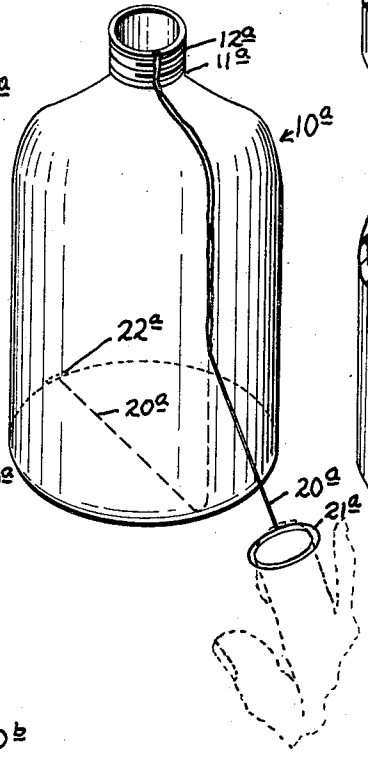


FIG. 8

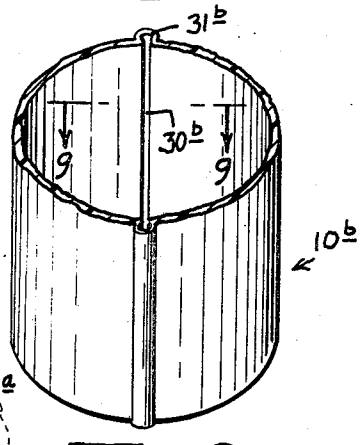
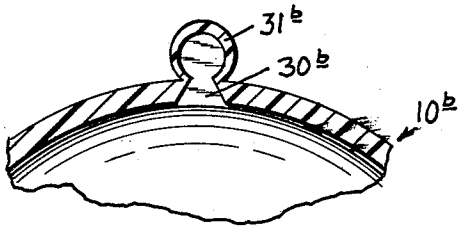


FIG. 9



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3,491,907

BREAK-AWAY CONTAINER

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ABSTRACT OF THE DISCLOSURE

A container formed of a relatively soft plastic or the like formed with grooves in the walls so that the container can be broken open easily to remove all of the material contained therein.

BACKGROUND OF THE INVENTION

Field of the invention

Many materials sold in bottles and other containers cannot be completely removed from the container by the consumer, especially if the material is relatively thick or the containers are designed in odd shapes. Because the containers cannot be completely emptied a large percentage of the material sold therein is thrown away.

Description of the prior art

In the prior art containers are constructed so that they are larger at the open end to aid in removing all of the material therefrom. However, this is unsatisfactory when the manufacturer desires a certain peculiar shaped container, which container may or may not be indicative of the material contained therein. Also in the prior art many containers are constructed which can be severed along predetermined lines to utilize the container for another purpose after it is emptied. For example, plastic containers are presently constructed which, after being emptied, may be utilized as pails, scoops, etc. These prior art devices are also unsatisfactory because the container must be constructed in a special design and a large amount of additional cost is utilized in forming the container so that it is suitable for the additional use.

SUMMARY OF THE INVENTION

The present invention pertains to a break-away disposable container having a portion of the wall substantially diminished in thickness so that it can be easily cut, with an external tool or a wire imbedded in the wall, to break the container open and utilize all of the material contained therein.

It is an object of the present invention to provide a new and improved container which can be easily broken open, regardless of the shape, to utilize all of the material contained therein.

It is a further object of the present invention to provide a break-away container formed so that knives, scissors, or the like, can be easily utilized to cut the walls of the container to open the same.

It is further object of the present invention to provide a break-away container having a wire imbedded in the wall thereof to cut the wall so that the container can be opened and the material easily removed.

These and other objects of this invention will become apparent to those skilled in the art upon consideration of the accompanying specification, claims, and and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring to the drawings, wherein like characters indicate like parts throughout the figures:

FIGURE 1 is a view in side elevation of a first embodiment of the break-away bottle;

FIGURE 2 is an enlarged sectional view as seen from the line 2—2 in FIGURE 1;

FIGURE 3 is a sectional view as seen from the line 3—3 in FIGURE 1;

FIGURE 4 is a view in perspective of a second embodiment of the break-away bottle, portions thereof broken away and shown in section;

FIGURE 5 is a view in perspective of a third embodiment of the break-away bottle;

FIGURE 6 is an enlarged sectional view as seen from the line 6—6 in FIGURE 5;

FIGURE 7 is a view in perspective of the break-away bottle illustrated in FIGURE 5, partially broken open;

FIGURE 8 is a view in perspective of a fourth embodiment of the break-away bottle, portions thereof broken away and shown in section; and

FIGURE 9 is an enlarged sectional view as seen from the line 9—9 in FIGURE 8.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIGS. 1 through 3 a generally cylindrical bottle **10** is illustrated having a neck **11** at the upper end thereof with a substantially diminished diameter. The neck **11** has outside threads **12** formed therein and a cap **13** is adapted to be threadedly engaged thereon. While the bottle **10** is illustrated as having the usual shape it should be understood that any desired shape might be utilized and the present invention will operate thereon.

The bottle **10** has a portion or groove **15** with a substantially diminished or smaller thickness extending from an edge of the opening in the neck **11** downwardly along the neck **11** and the side of the bottle **10**, across the bottom thereof and up the other side to the opening in the neck **11**. The groove **15** lies generally in a plane through the bottle **10** and positioned so that approximately one-half of the bottle **10** is situated on either side thereof. The upper end or opening of the bottle **10** has notches **16** in the edge thereof coinciding with the groove **15** for placing the sharp edge of a knife or the like therein to correctly align it with the groove **15**. Once the material contained in the bottle **10** is utilized as much as possible by pouring the material through the opening in the neck **11**, a knife is placed in the notch **16** and the bottle **10** is severed along the groove **15** to open the bottle **10** and remove the remaining material.

FIG. 4 is a slightly modified version of the embodiment illustrated in FIGS. 1–3 with similar parts designated by similar numerals having a prime added to indicate a modification. The bottle **10'** has a groove **15'** extending therearound in a plane generally parallel with and spaced from the bottom. The groove **15'** is illustrated on the inner periphery but it should be understood that it could also be on the outer periphery. In this modification a score mark on the outer periphery is utilized to position a knife or the like to start the cutting of the bottle **10'**.

Referring to FIGS. 5 through 7 a second embodiment of the break-away bottle is illustrated wherein similar parts are designated with similar numerals and all of the numerals have an "*a*" affixed thereto to designate a second embodiment. In this embodiment a relatively thin strong wire **20***a* is imbedded in the wall of the bottle **10***a* from adjacent the opening in the neck **11***a* along one side and across the bottom to the other side thereof. It should be understood that the wire **20***a* may be imbedded in the wall of the bottle **10***a* in a variety of positions and the present position is simply illustrated as an example. Also, the wire **20***a* should be formed from a material which will not react with material inside of the bottle **10***a*. One end of the wire **20***a* has a ring **21***a* affixed thereto for easily gripping the wire **20***a* and applying a force thereto. The ring **21***a* is affixed coaxial with the opening over the

upper edge of the neck **11***a* for convenience in storage. The opposite end of the wire **20***a* is anchored in the wall of the bottle **10***a* by means of a small piece **22***a* of material extending transverse to the longitudinal axis of the wire **20***a*. Thus, removing the ring **21***a* from its coaxial position over the opening in the bottle **10***a* and pulling the wire through the wall of the bottle **10***a* along one side and the bottom thereof (as illustrated in FIG. 7) will cut the bottle **10***a* so that it can be broken open to allow easy access to the material contained therein. It should be understood that the wall of the bottle **10***a* may have a diminished thickness adjacent the wire **20***a* or the wire **20***a* itself may diminish the thickness of the wall by its presence therein. That is, because the wire **20***a* is imbedded in the wall of the bottle **10***a* the thickness of the material making up the bottle **10***a* is diminished where the wire **20***a* replaces the same.

Referring to FIGS. 8 and 9 another embodiment of the break-away bottle is illustrated wherein parts similar to the embodiment illustrated in FIGS. 1 through 3 are designated with similar numerals and all of the numerals have a "*b*" affixed thereto to designate another embodiment. In this embodiment a slot **30***b* is formed in the walls of the bottle **10***b* on opposite sides of the bottle **10***b* so as to lie in a plane positioned with approximately one-half of the bottle on either side thereof. The slot **30***b* extending down opposite sides of the bottle **10***b* is bridged by channels **31***b* extending radially outwardly from the outer periphery of the bottle **10***b*. The channels **31***b* close the bottle **10***b* so that liquids or other material may be contained therein without leakage. The thickness of the material forming the channels **31***b* is somewhat diminished as compared to the remainder of the bottle **10***b* so that the channels **31***b* can be easily cut from the bottle **10***b* or severed so that the bottle **10***b* can be opened along the slot **30***b*. In the production of the bottle **10***b* it may be desirable to leave a thin web of material across the slot **30***b* on the inner periphery of the bottle **10***b* so that material will not flow into the channels **31***b*. Thus, when the channels **31***b* are cut from the bottle **10***b* material contained therein will not spill out. Also, it should be understood that many varieties of channels **31***b* may be utilized and the present embodiment, illustrated as a substantially ring-shaped cross section, is simply illustrated for exemplary purposes.

Thus, several embodiments of a break-away bottle are disclosed, all of which can be formed in substantially any configuration and upon emptying all of the material therefrom that can be removed, the break-away bottles can be broken open to remove all of the material contained therein. Very little additional cost is required to produce any of the embodiments disclosed and no special tools are required for the break-away process.

What is claimed is:

1. A break-away container comprising:

(a) a disposable container having walls formed of a relatively soft cutable plastic and a normal opening for the egress of substantially all material contained therein;

(b) a portion of the walls of said container having a substantially diminished thickness, said portion lying generally along a line through which it is desired to open said container for removing material not removable through the normal opening; and

(c) a portion of said container adjacent the portion with a diminished thickness formed for receiving a cutting instrument therein.

2. A break-away container as set forth in claim **1** wherein the portion having a diminished thickness extends from an opening in said container generally vertically down opposite sides thereof to the bottom thereof.

3. A break-away container as set forth in claim **1** wherein the portion having a diminished thickness substantially encircles the container a spaced distance from the bottom thereof.

4. A break-away container as set forth in claim **1** wherein the portion having a diminished thickness includes outwardly projecting channels bridging a slot through the walls of the container and extending a substantial distance therealong, said channels being formed for removal to allow the container to be opened along the slot therethrough.

5. A break-away container as set forth in claim **1** having in addition a relatively thin wire imbedded in the container wall adjacent the portion having a diminished cross section for cutting the wall to open the container.

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GEORGE T. HALLS, Primary Examiner

U.S. Cl. X.R.

215—32; 220—49; 229—51