July 10, 1962 K. B. ANDERSON 3,043,489

PACKAGE FOR LIQUIDS AND OTHER MATERIALS

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Fig. 1.

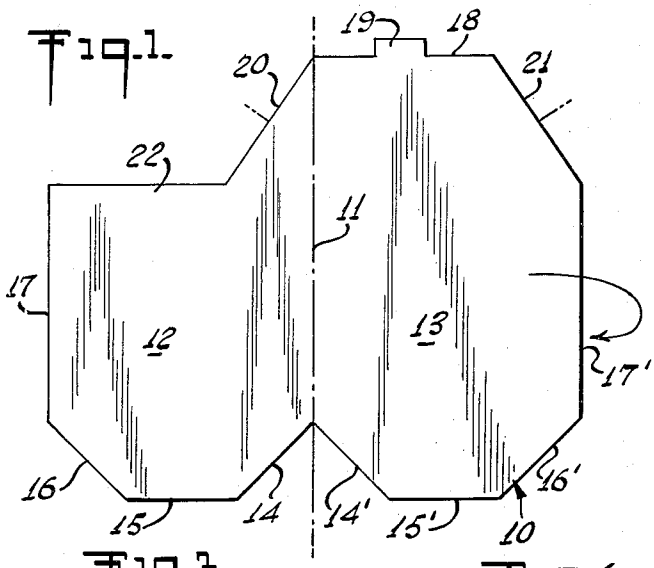


Fig. 2.

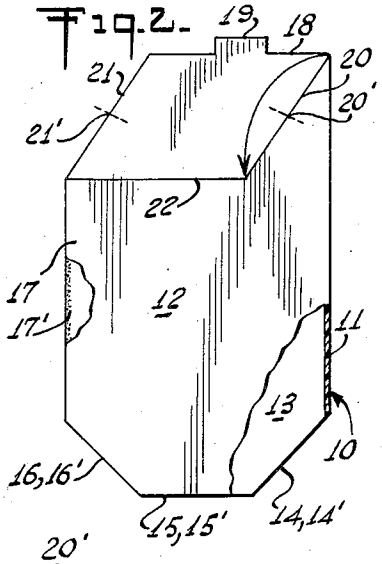


Fig. 3.

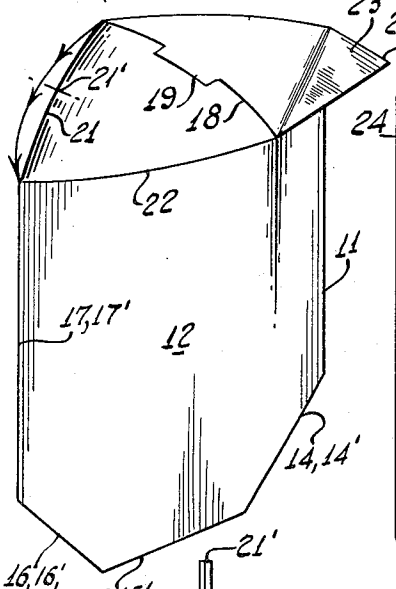


Fig. 4.

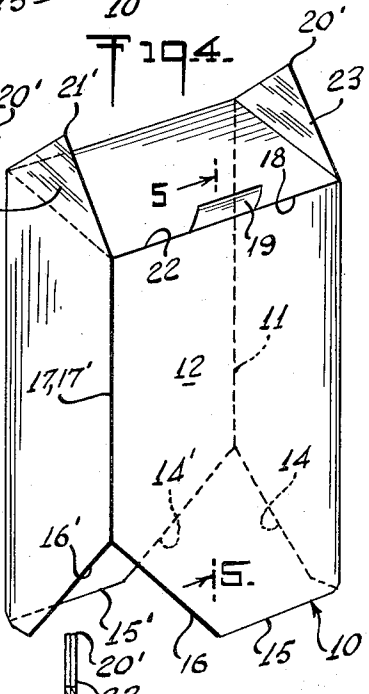


Fig. 5.

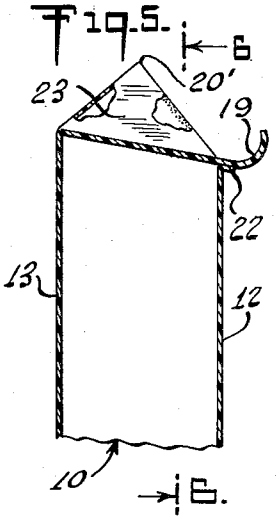
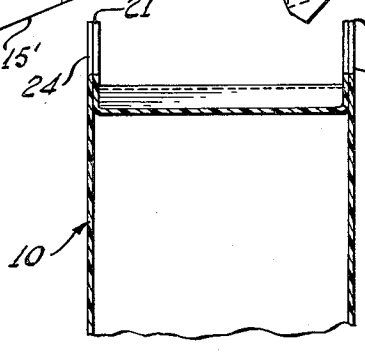


Fig. 6.



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Fig. 7.

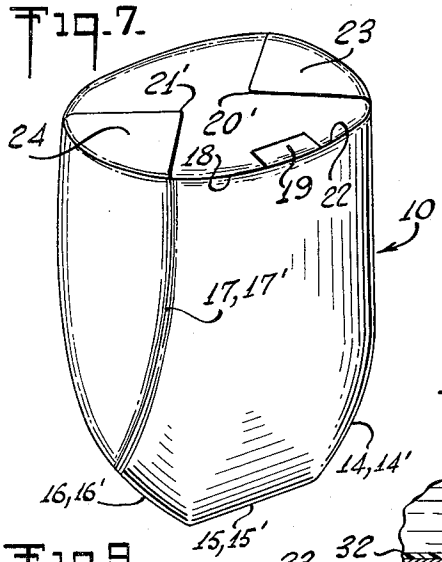


Fig. 8.

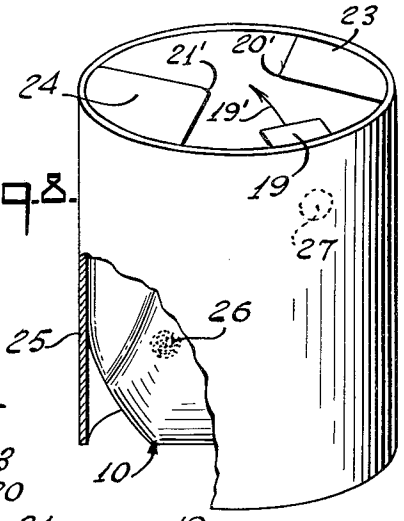


Fig. 13.

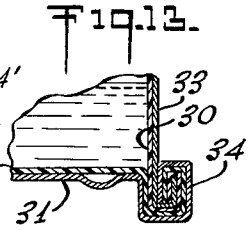


Fig. 9.

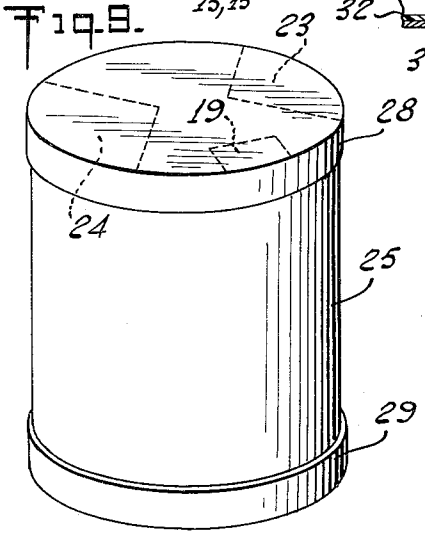


Fig. 10.

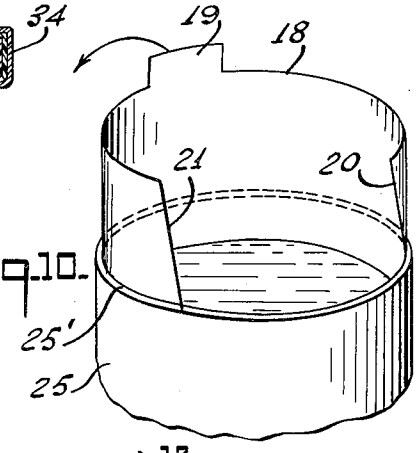


Fig. 11.

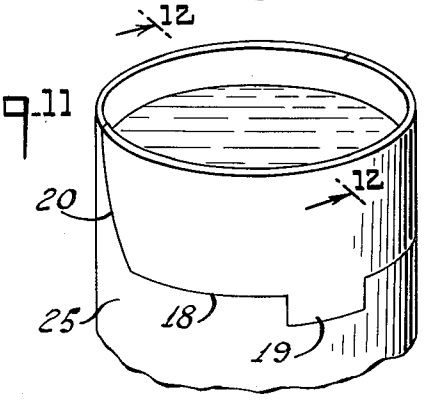
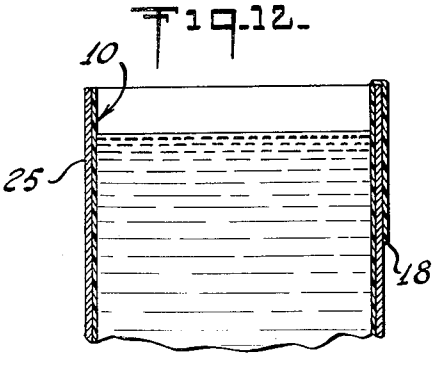


Fig. 12.



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3,043,489

PACKAGE FOR LIQUIDS AND OTHER MATERIALS

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Filed Dec. 9, 1959, Ser. No. 858,370
6 Claims. (Cl. 229—14)

This invention relates to the packaging of materials and more specifically to a novel and improved package which, while being generally adaptable for packaging all types of materials, is particularly useful for liquids such as soft drinks and the like that are intended to be consumed directly from the container.

The novel and improved package in accordance with the invention is characterized by its simplicity, relatively low cost, and ease of manufacture and filling. In the case of soft drinks, the container or package affords a sanitary lip surrounding the container opening for consuming the contents directly from the package.

A further object of the invention resides in the provision of a novel and improved plastic container adapted to be supported within an outer protective shell or receptacle of suitable material and embodies improved end closures to facilitate filling of the container and opening the container to remove the contents therefrom.

Still another object of the invention resides in the provision of a novel and improved plastic container for liquids and other materials which may be readily fabricated from plastic film and wherein the plastic container, when carried within an outer supporting structure of paperboard or other suitable material, provides a durable container not readily damaged and which, when opened, affords sanitary means for removing the contents from the container without contacting the outer supporting structure.

The above and other objects and advantages of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIG. 1 is a plan view of a pattern showing the outline of the container prior to assembly;

FIG. 2 is a partially assembled view of the container;

FIG. 3 illustrates a second step in the assembly of the container in accordance with the invention;

FIG. 4 is a perspective view of the container with the top closure completely assembled;

FIG. 5 is a fragmentary cross sectional view of FIG. 4 taken along the line 5—5 thereof;

FIG. 6 is a fragmentary cross sectional view of FIG. 5 taken along the line 6—6 thereof;

FIG. 7 is a perspective view of a completed plastic container in accordance with the invention;

FIG. 8 illustrates a container and outer receptacle in accordance with the invention;

FIG. 9 illustrates a modified form of container and outer receptacle;

FIG. 10 is a perspective view showing an initial step in the opening of the plastic container;

FIG. 11 is a view similar to FIG. 10 and showing the completion of the opening process of the container in accordance with the invention;

FIG. 12 is a cross sectional view of FIG. 11 taken along the line 12—12 thereof; and

FIG. 13 is a fragmentary cross sectional view of a modified container assembly in accordance with the invention.

The package in accordance with the invention preferably comprises a first container of relatively thin plastic film adapted to hold liquid or other material to be packaged. This container, while of sufficient strength to retain the packaged material, is preferably housed within a surrounding structure or receptacle which affords

mechanical support and protection for the plastic container. The receptacle may be of paper, plastic or other suitable material with adequate rigidity to retain the inner container. The container, when filled with a material may have any desired configuration and it is desirable, as will be shown, that the container have a size that will cause it to be snugly received within the receptacle and a length preferably less than that of the receptacle. With the foregoing structure and with the novel and improved configuration of the top opening of the plastic container, the material forming the top opening may be drawn over the edge of the receptacle and thereby provide a sterile and sanitary lip portion for pouring contents from the container or drinking directly from the container.

The inner plastic container illustrated generally in FIGS. 1 through 7, has been shown in FIG. 4 as being of substantially rectangular form, though in reality, the final container when filled with a liquid has a rounded or cylindrical configuration, as illustrated in FIGS. 7 through 12. The inner plastic container denoted generally by the numeral **10** in FIGS. 7 and 8, is formed of a flat sheet of plastic or other suitable material shaped in the manner illustrated in FIG. 1. For convenience in describing the assembly of the container from the pattern of FIG. 1, the portion to the left of the center line **11** will be denoted by the numeral **12**, while the portion to the right of the center line will be denoted by the numeral **13**. The bottom portion of each of the pattern sections **12** and **13** are identical and have mating portions **14** and **14'**, **15** and **15'** and **16** and **16'**. The portions **14** and **14'** which form part of the lower edge are inclined downwardly and outwardly from the center line, the portions **15** and **15'** are substantially horizontal and the portions **16** and **16'** are inclined upwardly and outwardly and terminate at the side edges **17** and **17'**. The top portions of the sections **12** and **13** are not symmetrical about the center line **11**, though the edge **18** and inclined side edges **20** and **21** form a symmetrical structure which further includes an upwardly extending tab **19**. The inclined side edge **20** actually forms part of section **12** of the pattern and terminates at its lower end in the horizontal edge **22** which completes the pattern.

The initial step in the assembly of the container consists of folding the section **13** as shown in FIG. 1 about and underneath the section **12** to bring the edge **17'** into alignment with the edge **17** and form the configuration as illustrated generally in FIG. 2. The container as illustrated in FIG. 2 has the section **12** lying flat on the section **13** and the edges **17** and **17'** are permanently sealed one to the other by known processes such as those involving heat sealing or utilization of a permanent adhesive. It will be observed in this figure that the edges **16** and **16'**, **15** and **15'**, and **14** and **14'** overly one another. At this step in the process, however, these edges are not sealed and remain open for purposes of filling as will be described.

The next step in the process of assembling the container **10** is shown in FIG. 3. In this step, the inclined edge **20** is folded upon itself at the midpoint **20'** and the overlying edges are sealed one to the other to form a fluid-tight seal but yet one that will permit the edges to be separated when the container is to be opened. This procedure forms a triangular tab-like member denoted by the numeral **23**. The edge **21** is then folded about the point **21'** in the same manner as described in connection with the edge **20** and the overlying portions are sealed to form a second triangular shaped tab denoted by the numeral **24** in FIG. 4. When this is accomplished, the edge **18** is sealed to the edge **22** to complete the top seal, and the tab **19** extends outwardly and upwardly and forms means for breaking the top seals as described

when the container is to be opened. The detailed views of the top of the container are shown in FIGS. 5 and 6.

After the top of the container has been sealed as illustrated in FIGS. 2, 3, and 4, the container is then preferably inverted and filled with liquid or other material to be contained therein. When this has been accomplished, the edges **14**, **14'**, **15**, **15'**, and **16**, **16'** are sealed one to the other to complete the formation of the container. For clarity of illustration, the container has been shown in FIGS. 4, 5, and 6 with a rectangular configuration, and in so doing the inclined edges **14** and **14'**, and **16** and **16'** appear to be disposed at opposite corners of the container. However, when these edges are sealed as described, the container is essentially cylindrical and takes the general conformation as illustrated more clearly in FIG. 7.

In the case of soft drinks such as fruitades and the like, the container **10** is preferably housed within a cylindrical receptacle **25** as shown in FIG. 8. The receptacle **25** has a diameter equal to or possibly slightly smaller than the actual diameter of the container **10** so that the latter will fit snugly within the receptacle **25**. In addition, the receptacle **25** is made slightly longer than the container **10**, and the latter may be spot cemented to prevent displacement of the container relative to the receptacle. These cemented portions are indicated generally at **26** and **27**, though any suitable mode of application of the cement may be employed. If desired, and to afford further protection for the plastic container, the receptacle **25** may include upper and lower caps **28** and **29**. It is evident that the container may be made of paperboard, plastic, metal, or any suitable material, and, similarly, the caps **28** and **29** may be made of like material.

When it is desired to open the container **10**, the cap **28** is removed and the tab **19** is then pulled in the direction of the arrow **19'**, as shown in FIG. 8. This action will break the seals along the cooperating edges **18** and **22**, **21** and **20**, as previously described, whereupon the container closure portion bounded by these edges will extend upwardly from the top of the receptacle **25** as indicated in FIG. 10. Since the upwardly extending portion of the container does not form a complete circle, it can be readily drawn down about the top edge **25'** of the container as illustrated in FIG. 11, and thus provide a sanitary pouring or drinking edge, as the case may be. Since this closure, which is bounded by the edges **18**, **20** and **21** has an angular width greater than 180°, it will lie flat against the receptacle when moved to the position shown in FIG. 11. Thus, in the case of soft drinks the user can be assured of complete safety in drinking directly from the container notwithstanding the manner or mode in which the article has been handled and shipped.

A modified form of the invention is shown generally in FIG. 13 which constitutes a fragmentary section of the lower corner of the container such as that shown, for instance, in FIG. 9. In this modification the body of the container would preferably be cylindrical and when installed in a receptacle **25** the container body would be long enough to extend beyond the bottom edge of the receptacle. A section of the wall of this modified container is denoted by the numeral **30**. After the container **10** is inserted in the receptacle **25** and filled, the container bottom **31**, having an overlying layer of plastic **32**, is applied to the receptacle **25** and the meeting edges of the

plastic members **30** and **32** are sealed one to the other and rolled within the adjoining edges of the bottom **31** and the wall **33** of the receptacle **25** to form a reinforced seal **34**. The top portion of the embodiment of the invention shown in FIG. 13 is fabricated in substantially the same manner as described in connection with FIGS. 2 through 4, and would be openable as illustrated and described in connection with FIGS. 10 through 12, inclusive.

The term "tubular structure" as used in the claims is intended to comprehend the container body or any portion thereof adjoining the top closure as described above.

While only certain embodiments of the invention have been illustrated and described, it is apparent that alterations, changes, and modifications may be made without departing from the true scope and spirit thereof as defined by the appended claims.

What is claimed is:

1. A container comprising a tubular structure of relatively thin material, one end of said structure having a closure member of thin material extending from a peripheral portion of said edge, the side edges of said closure member being disposed at an angle of greater than 90 degrees with the remaining peripheral portion of said edge and the upper edge of said closure member having a length substantially equal to the length of said remaining peripheral edge portion, said side edges being folded upon themselves, means releasably sealing the folded overlying portions of each of said side edges and said upper edge to the remaining peripheral edge portion to close one end of said container and means sealing the other end of said container.

2. A container according to claim 1 wherein said tubular structure and member are integrally joined and formed of a thermoplastic material.

3. A package for liquid and other products comprising a generally tubular container of pliable material, a closure member extending from one end of said structure and having a length less than the peripheral length of said container and with at least two portions disposed at an angle less than 180° one relative to the other, said closure member being releasably sealed to said one end, means sealing the other end of said container, a tubular receptacle surrounding said container and having a length at least equal to the length of said container, said closure member upon release from said closing position being movable outwardly and downwardly over the adjoining edge of said receptacle to form a self-retaining sanitary edge portion for removal of the contents.

4. A package according to claim 3 wherein said receptacle is provided with upper and lower closure lids.

5. A package according to claim 3 wherein said sealing means on the other end of said container comprises a sheet of said pliable material overlying said other end and joined to the edges thereof.

6. A package according to claim 5 wherein the last said sheet of pliable material is carried by a closure lid.

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