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[54] **CUP-SHAPED CARTON WITH GUSSETED SEAMS**

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[58] **Field of Search** .....229/21, 31, 1.5 B

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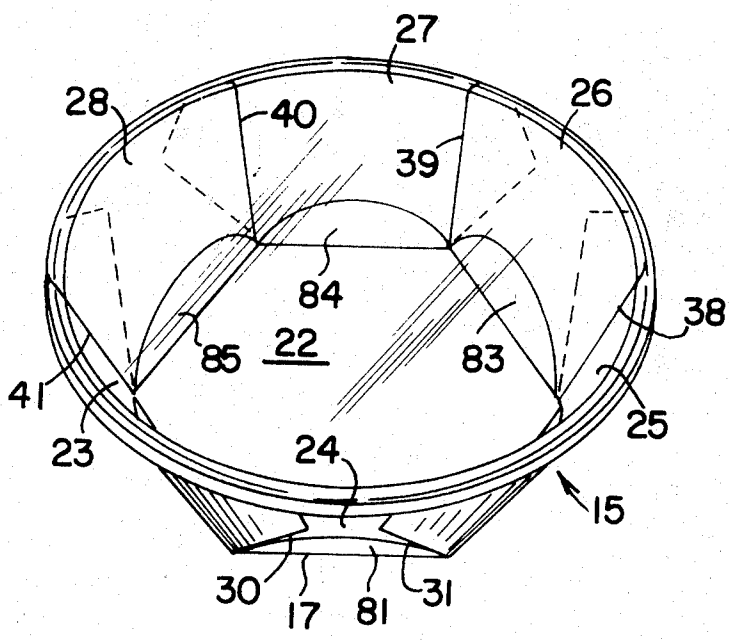
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[57] **ABSTRACT**

A container or package which is adapted for use in the packaging of a variety of products where the container is formed from a single paperboard blank which is cut and scored so that it may be folded into a cup-like or dish-like body shape with gusseted side wall seams and a marginal rim formation enabling the container to be filled with a liquid product without leakage at the seams and to be readily closed by the application of a cover member secured or seated on the rim formation.

4 Claims, 5 Drawing Figures



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CUP-SHAPED CARTON WITH GUSSETED SEAMS

This invention relates to packaging and is more particularly concerned with improvements in a package and a container therefor which is formed of foldable sheet material and provides a cup-like body which is leakproof and which has a rim formation at the top edge of the side wall on which a cover member is adapted to be secured.

Containers of many different types and designs have been developed for packaging various products, such as foods, or the like, in order to satisfy the needs of particular markets. In the packaging of food products in relatively small portions, for example, single servings, containers in the form of paper cups and tubs, or plastic cups and tubs, have generally been resorted to, particularly where it is intended that the product may be used directly from the package and the container discarded. One such package is disclosed in my copending application filed concurrently herewith. Another package of this general type, generally intended for use in packaging a larger quantity of a product, is disclosed in my U.S. Pat. No. 3,381,877, granted May 7, 1968. Experience with the latter and similar packages has indicated the desirability of providing a package container having some of the characteristics of the previously developed designs but capable of being formed more economically from less costly materials and adapted for the packaging of a greater variety of products. It is a general object, therefor, of the present invention to provide a container which is adapted for packaging various products and which can be produced in large quantities on existing machinery at a cost which will enable it to compete with similar containers previously designed for like products.

It is a more specific object of the invention to provide a container which is particularly adapted for packaging products such as foods and similar products in relatively small quantities, which will present a neat and attractive appearance when filled with a product, which can be supplied at sufficiently low cost to justify discarding it after a single use, and which is readily adaptable to the formation, filling and closing by machinery of relatively simple design.

A further object of the invention is to provide a package employing a container which is adapted to be fabricated from a single sheet of paperboard or similar material, cut and folded so as to have the form of a dish or bowl of sufficiently attractive appearance for marketing a food product, or the like, and which is adapted to receive a closure which may be readily removable to provide access to the contents of the package.

Another object of the invention is to provide a container for the packaging of products which is formed from a single sheet of paperboard or similar foldable sheet material wherein the sheet is cut and folded so as to form a bowl-like container with gusseted side wall seams and a marginal rim formation enabling the container to be filled to the brim with a liquid product without leakage at the seams and to be readily closed by the application of a cover sheet or lid with its margins secured to or interlocked with the rim formation.

Still another object of the invention is to provide a container for forming a package which is fabricated from a single sheet or blank of paperboard or similar material, with the blank being cut and folded so as to have the form of a cup or bowl with gusseted side wall portions which render the container wall leakproof and

with a top marginal rim formation which lends rigidity to the container and enables it to be readily closed by application of a cover member with its margins engaging the rim formation.

A still further object of the invention is to provide a container for packaging products of the type described wherein the bottom wall forming panel has a perimeter defined by straight hinge lines and upwardly bowed score lines are provided in side wall forming panel portions adjoining the hinge lines connecting the bottom wall forming panel and side wall forming panel portions resulting in planar panels at the bottom of the side wall which merge into curved side wall panel portions with the latter extending to a rolled top edge formation.

These and other objects and advantages of the invention will be apparent from a consideration of the form of the package which is shown by way of illustration in the accompanying drawings wherein:

FIG. 1 is a perspective view of a package formed with a container which embodies therein the principles of the invention;

FIG. 2 is a side elevational view of the package of FIG. 1;

FIG. 3 is a plan view of the container shown in the package of FIG. 1;

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 3; and

FIG. 5 is a plan view of a flexible paperboard blank employed in fabricating the container, the view illustrating the manner in which the blank is died out and creased preliminary to fabrication of the container.

In the package and container illustrated in FIG. 1 of the drawings, a bowl-like container body **10** is provided which is fabricated from a single paperboard blank. The container body **10**, which is adapted to be filled with a product to be packaged, has a bottom wall **11** defined by a series of straight lines and upwardly and outwardly tapering or slanted wall portions forming a side wall **12** which terminates at a marginal rim formation **13** enabling a closure lid **14** or cover sheet or closure forming membrane to be secured thereon for enclosing a product therein.

The container **10** is formed from a blank **15** which is cut and scored as illustrated in FIG. **5**. The blank **15** is formed from a sheet of paperboard or similar foldable sheet material of suitable gauge, weight or caliper for the size of the container and/or the weight of the product being packaged. The center of the blank is scored on a series of straight lines **16, 17, 18, 19, 20** and **21** which are arranged in the form of a hexagonal and circumscribe a bottom wall forming panel **22**, the score lines constituting bottom edge forming hinge lines and defining the inner edges of the side wall forming panel portions **23, 24, 25, 26, 27** and **28**, respectively. The side wall forming panel portions **23, 25** and **27** are of identical size and shape while the panel portions **24, 26** and **28**, which extend between the same, are also of identical size and shape, being somewhat smaller than the adjoining side wall panels. Radial score lines **30, 31, 32, 33, 34** and **35** extend outwardly from the intersection of each pair of adjoining score lines **16, 17**; **17, 18**; **18, 19**; **19, 20** and **20,21** and define the side edges of the larger side wall forming panels **23, 25** and **27**. The side edges of the smaller panels **24, 26** and **28** are defined by non-radially extending score lines **36, 37, 38, 39, 40** and **41**. These score lines extend from the points of intersection of the score lines **30, 31, 32, 33, 34** and

35 with the inner score lines **16, 17, 18, 19, 20** and **21.** The associated pairs of score lines **30, 36; 37, 31; 32, 38; 39,33; 34, 40** and **42,35** define the side edges of triangular shaped web forming panels **42, 43, 44, 45, 46** and **47.** The larger side wall forming panels **23, 25** and **27** are cut at their outer edges on the lines **50, 51** and **52,** the middle portions of which are curved, while the smaller side wall forming panels **24, 26** and **28** are cut at their outer edges on the lines **54, 55** and **56,** the middle portions of which have a curvature corresponding approximately to the curvature of the lines **50, 51** and **52.** The dimension of each of the side wall forming panels on a radial line bisecting the associated inner score line is the same. The outer edge of the side wall panel forming portions of the blank is cut away on the lines **60, 61, 62, 63, 64** and **65.** These cutting lines which define the outer edges of the triangular web panels **42, 43, 44, 45, 46** and **47** terminate at one end at the lines which define the side edges of the smaller side wall forming panels **24, 26** and **28** and cross the radial lines which define the side edges of the larger side wall forming panels **23, 25** and **27** to join the outer edge defining lines of the latter. Each of the side wall forming panels is scored on an outwardly curved or bowed line **70, 71, 72, 73, 74 75,** each of which extends at its ends to the ends of the inner score line for that panel so as to define sub-panels **80, 81, 82, 83, 84, 85.**

In setting up the blank to form a cup-shaped container, the side wall forming panels **24, 26** and **28** are hinged upwardly about the bottom edge forming hinge lines **16, 19** and **21** followed by upward hinging of the side wall forming panels **23, 25** and **27** about the hinge lines **16, 18** and **20** which results in the triangular connecting web panels **42, 43, 44, 45, 46** and **47** folding against the inside face of the side margin of the adjoining panels **23, 25, 27** and the outside face of the side margin of adjoining panels **24, 26, 28** where they are adhesively secured by application of a suitable adhesive or activation of an adhesive coating in the seam areas, thereby forming gusseted seams which are leakproof and enable the container to be used for liquids and to be filled to the brim. The container is completed preferably by rolling or outwardly turning of the top edge margins to form a relatively rigid rolled or turned edge or rim formation **90** which reinforces and stiffens the side wall structure and which enables a closure, such as the lid **14,** to be secured thereon. Alternatively, the top edge may be flanged to rigidify the same and provide a surface of greater area for securing a cover sheet or like closure by adhering the margins thereto.

I claim:

1. A container having the general shape of a bowl or cup which is fabricated from a single sheet of flexible sheet material of generally circular outline and which is cut and scored so as to provide in the set-up condition a bottom wall forming panel of hexagonal outline and upwardly and outwardly inclined side wall forming panel portions which have hinged connections with the peripheral edges of the bottom wall forming panel on straight lines, said side wall forming panel portions being integrally connected at adjoining ends by triangular web portions which are folded on upwardly opening V-shaped score lines extending between the peripheral edge of said bottom wall forming panel and the top edge of the adjoining side wall forming panel portions, said folded web portions being secured between adjoining margins of said side wall forming panel portions which overlap so as to provide gusset seams connecting said side wall forming panel portions, said side wall forming panel portions terminating at their top edges at an outwardly and downwardly rolled edge formation which extends on a continuous curved line in the plane of the top edge of the container and forms a rim for attaching a closure member thereon.

2. A container as set forth in claim **1** wherein said side wall panel portions have upwardly bowed score lines in the bottom areas thereof which form with the associated hinge connections between the bottom wall and the side wall panel portions flat panel sections at the bottom of the side wall which merge at the top into curved top sections of said side wall panel portions.

3. A container as set forth in claim **2** wherein said upwardly bowed score lines extend from points of intersection of adjoining straight hinge lines which define the perimeter of the bottom wall forming panel.

4. A container in the form of a bowl or cup which is fabricated from a one piece blank of folded sheet material comprising a bottom wall forming panel having a perimeter defined by straight line hinge connections with upstanding side wall forming panel portions, which side wall forming panel portions are disposed in upwardly and outwardly inclined relation and integrally connected by triangular webs which are folded on upwardly extending hinge lines to lie between adjoining margins of the side wall forming panel portions and which are adhesively secured to the confronting faces thereof to form gusset seams, said side wall forming panel portions extending at their top edges to a relatively rigid, outwardly rolled continuous rim formation for reinforcing the side wall top edge and for receiving thereon a closure member, and said side wall forming panel portions each having a web section which extends adjacent the hinge connection with the bottom wall forming panel and which is defined by an upwardly bowed fold line and a straight bottom edge, said web section having a substantially flat panel area adjacent the bottom edge thereof and merging at its top edge into the curved top area of the panel portion.

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