

[54] LIQUID DISPENSING CONTAINER
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 [51] Int. Cl. B65d 5/72
 [58] Field of Search 229/17 R, 17 G; 206/65 K

[57] ABSTRACT

A liquid dispensing container is provided with a dispensing spout on one side and a corresponding recess on the other side so that adjacent containers can nest. The container is designed so that it can be opened by pulling apart two tabs, so that the body of the container is not held during the opening operation.

In one modification, the container is made from a paper blank which is a generally rectangular sheet having generally parallel opposed free side edges.

The container is provided with score lines so as to enable the blank to be folded to form a container with a peak top.

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12 Claims, 15 Drawing Figures

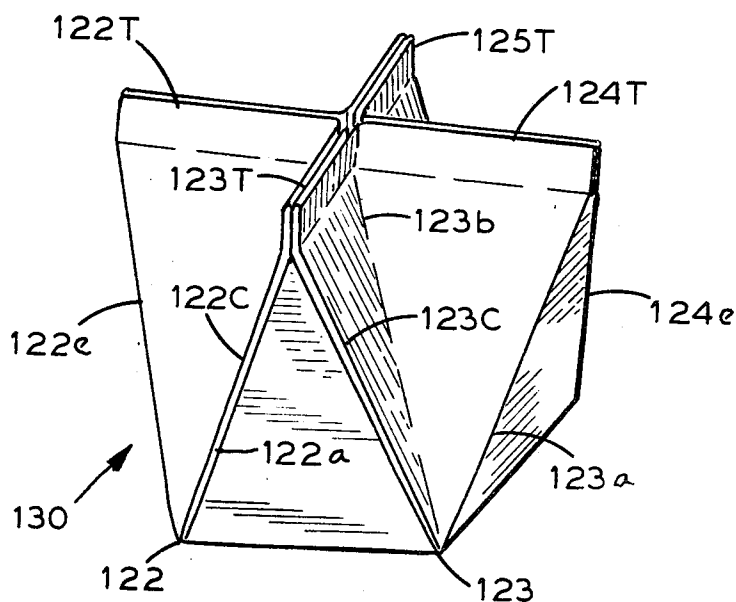


FIG. 1

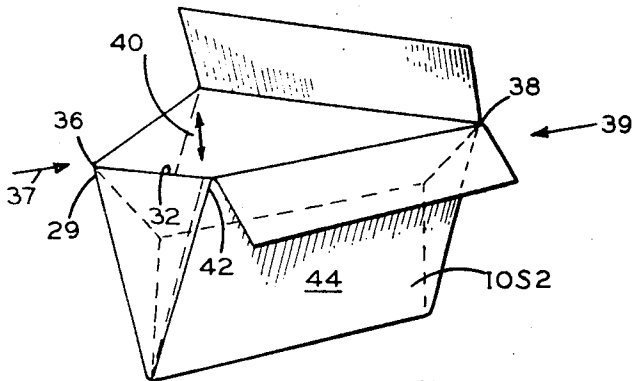


FIG. 2

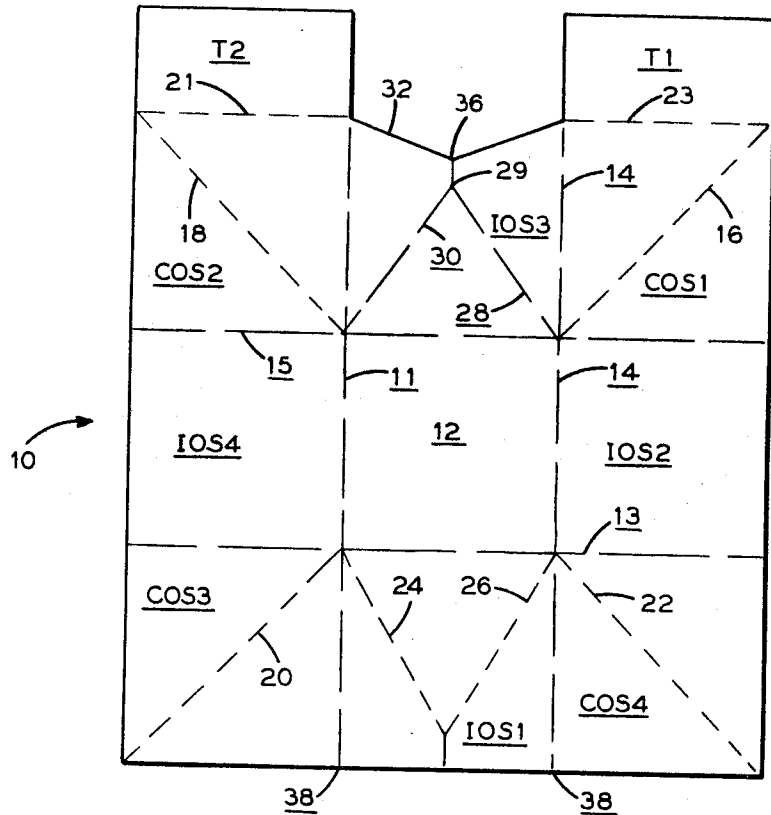
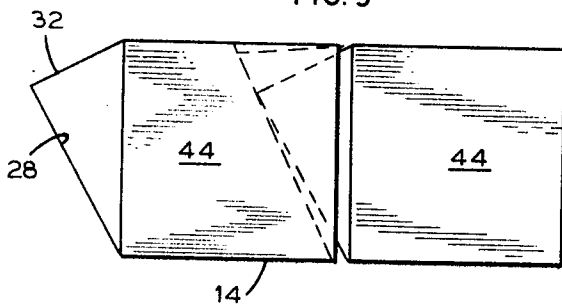


FIG. 3



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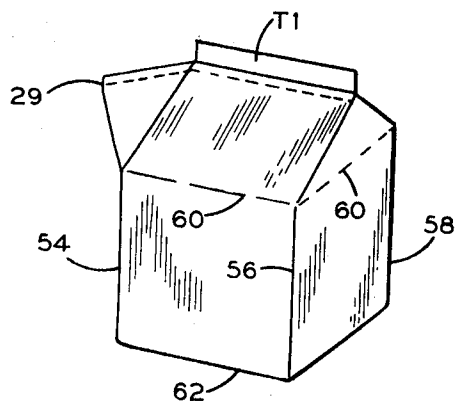
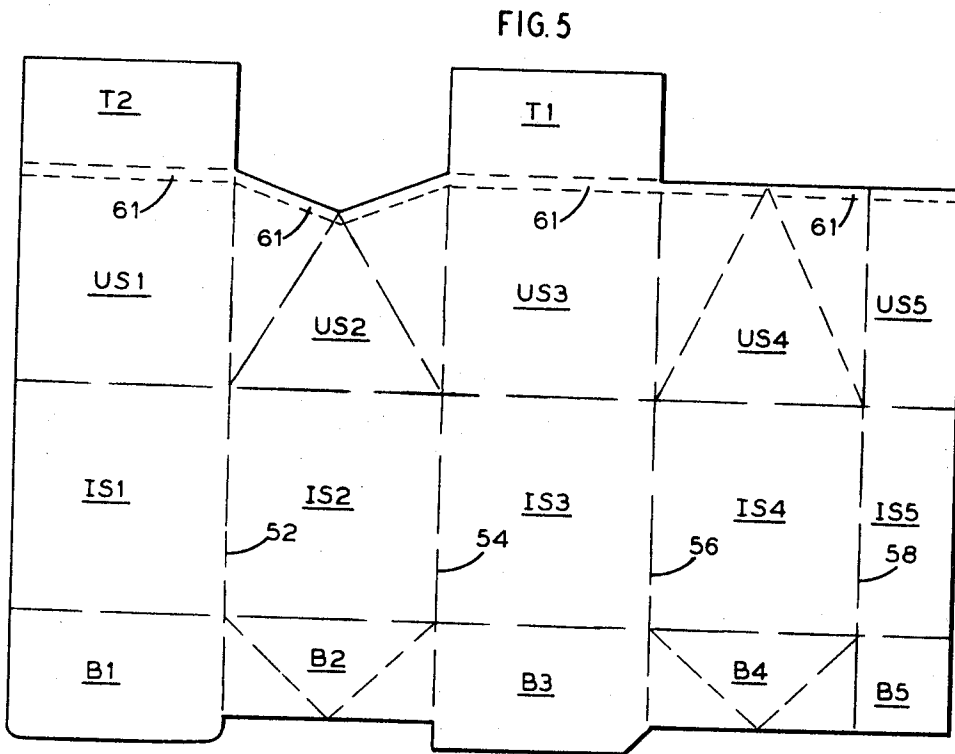
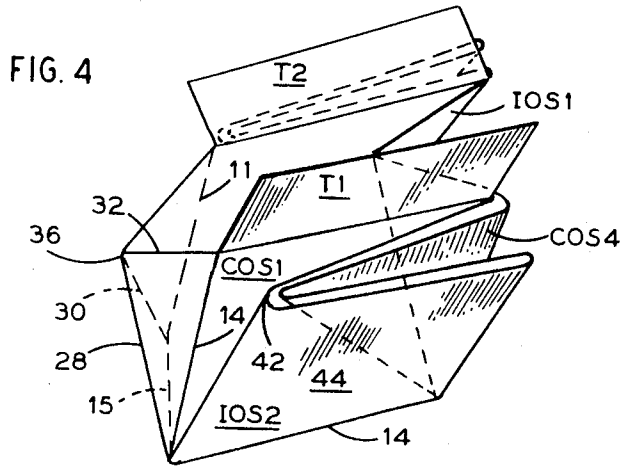


FIG. 7

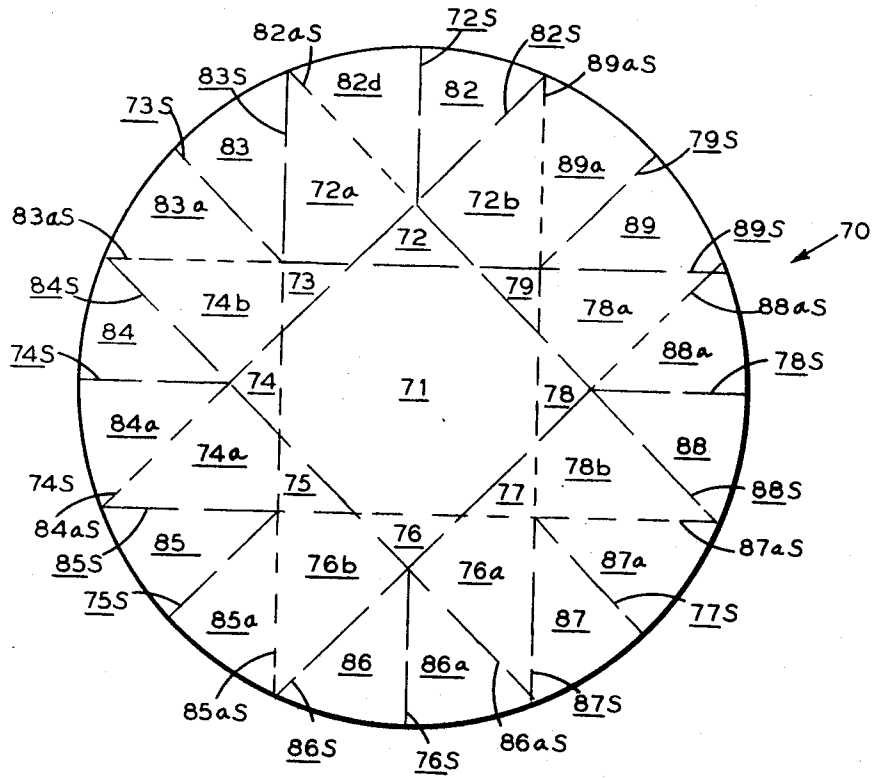


FIG. 8

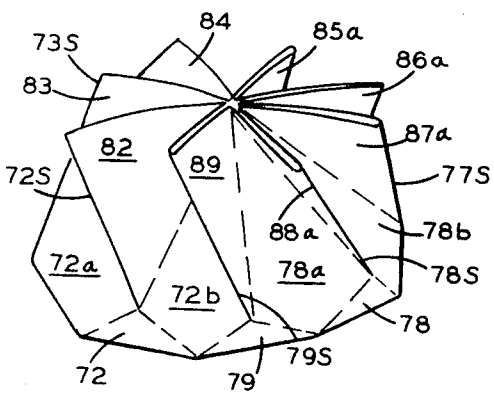


FIG. 8A

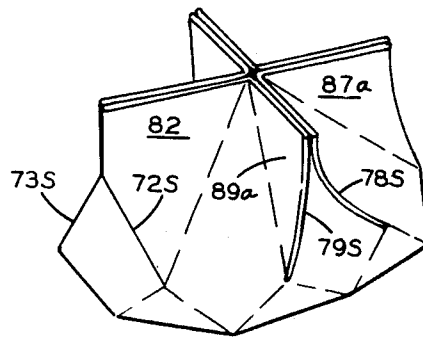


FIG. 9

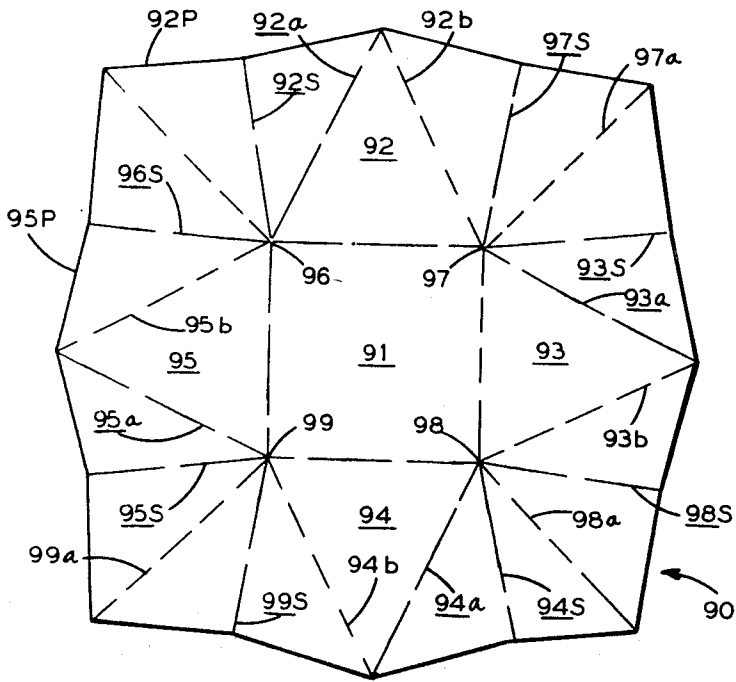


FIG. 10

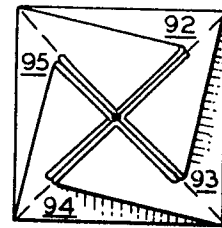


FIG. 11

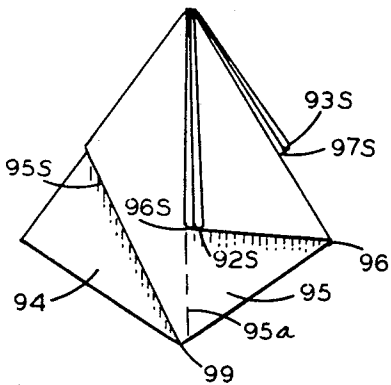


FIG. 11A

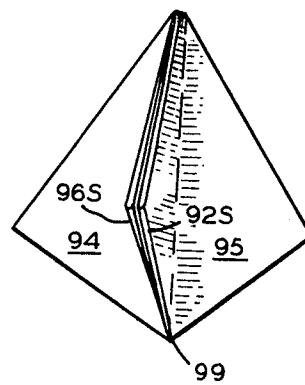


FIG. 12

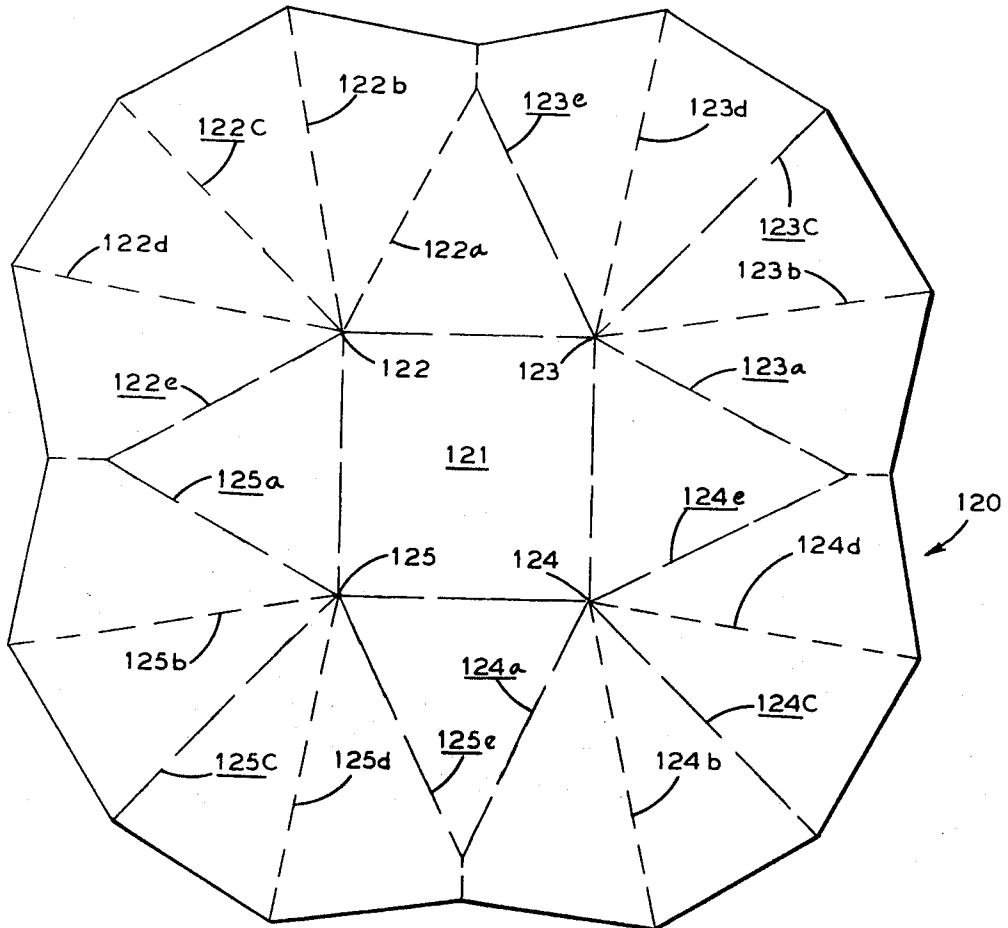
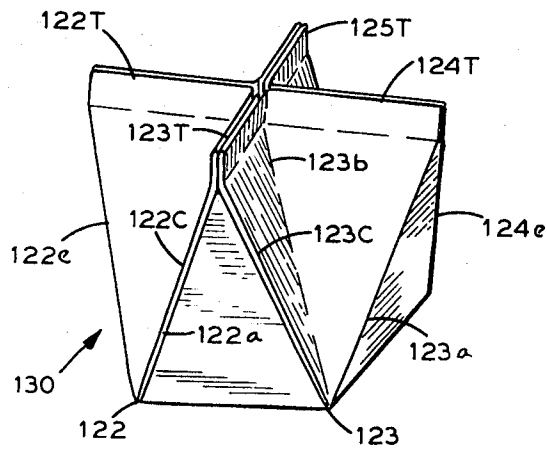


FIG. 13



LIQUID DISPENSING CONTAINER**BACKGROUND OF THE INVENTION****1. Field of the Invention**

This invention relates to containers and more particularly to a container made from a folded paper blank and which is provided with a dispensing spout.

2. Description of the Prior Art

The field of dispensing containers has been rapidly growing and many innovations can be found in the patent art. Nevertheless, in the area of small containers which are designed to hold one serving of a liquid, certain desirable features are still not found in commercial containers.

For example, the single service container is frequently employed in planes and trains and should be easy to open with one hand and should be easy to open without any danger of liquid being splattered on the user. One modification which is a low cost structure and employs a closure tab over a punched hole, tends to squirt liquid when opened, because the body of the container must be held during the opening operation. The plastic cup type in which metal foil is used to cover the opening does not lend itself to compact stacking.

BRIEF DESCRIPTION OF THE INVENTION

It has now been found that a container, particularly of the single service type, designed to be easy to open without exerting pressure on the body of the container and to be tightly stacked, can be made from a paper blank. Moreover, the containers are designed to encourage the user to hold only flaps while opening the containers so that pressure is not exerted on the container walls.

In accordance with the present invention, a paper blank is provided with a first pair of parallel score lines and a second pair of parallel score lines at right angles to the first pair of parallel score lines, forming a rectangular center section, four corner outer sections and four intermediate outer sections. Four score lines extend from the four corners of the blank and four score lines extend from the four corners of the center section to the periphery of the blank. The latter four score lines being in pairs and meeting at the periphery of the blank.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects of the invention will be evident and the invention will be more fully understood when the specification is read in combination with the following drawings wherein:

FIG. 1 is a perspective view of a container of the present invention, shown open;

FIG. 2 is a plain view of a blank used in making the container of FIG. 1;

FIG. 3 is a side elevational view of a pair of containers of FIG. 1, shown nested;

FIG. 4 is a perspective view of the container of FIG. 1, shown in a semi-assembled condition;

FIG. 5 is a plan view of a blank for another modification of a container;

FIG. 6 is a perspective view of a container made from the blank of FIG. 5;

FIG. 7 is a plan view of a blank for a still further modification of a container;

FIG. 8 is a perspective view of a container made from the blank of the modification of FIG. 7;

FIG. 8A is a perspective view of a modification of the container of FIG. 8;

FIG. 9 is a plan view of a blank for still another modification of a container;

FIG. 10 is a plan view of a container made from the blank of FIG. 9;

FIG. 11 is a perspective view of the container of FIG. 10;

FIG. 11A is a perspective view of a modification of the container of FIG. 8;

FIG. 12 is a plan view of still a further modification of a container and;

FIG. 13 is a perspective view of the container made from the blank of FIG. 12.

DESCRIPTION OF THE INVENTION

As shown in FIG. 2, a paper blank 10 is divided into a plurality of sections by score lines. The pair of parallel score lines 11 and 14 intersect at right angles with the pair of parallel score lines 13 and 15.

The two pair of score lines 12, 14 and 13, 15 divide the blank into a rectangular center 12, four corner outer sections, COS 1, COS 2, COS 3, and COS 4, as well as four intermediate outer sections IOS 1, IOS 2, IOS 3, and IOS 4.

Each of the corner outer sections, COS 1, COS 2, COS 3, and COS 4 has a score line 16, 18, 20 and 22 respectively which extends from the four corners of the center section 12 to the four corners of the paper blank 10.

If desired two tabs T1 and T2 can be provided to facilitate opening of the container.

Two opposing intermediate outer sections IOS 1 and IOS 3 have pairs of score lines 24, 26 and 28, 30 respectively. Each pair extends from the four corners of the center section to a point 29 proximate the periphery of the respective intermediate outer sections.

The intermediate outer section IOS 3 has a cut-out section for a reason which will be apparent when discussed in connection with FIG. 3.

The section which includes the corner outer sections COS 1, COS 4, and the intermediate outer section 2 is folded as shown in FIG. 4, by folding inwardly at the score lines 16 and 22. The section which includes COS 2, IOS 4 and COS 3 is similarly inwardly folded.

The intermediate outer section IOS 1 is inwardly folded while the opposite intermediate outer section IOS 3 is outwardly folded to form a spout section.

As shown in FIG. 3, the containers nest, with the spout of one container fitting in the conversely folded section of an adjacent container. The cut-out portion of the spout side IOS 3 is essential in order to provide a nestable structure. The clearance provided by the cut-out enables the upper edge 32 of the spout to fit under the sealed section 34 of the adjacent container.

As shown in FIG. 1, the preferred embodiment described above can be opened by applying pressure at the point 36 and 38 in the direction shown by the arrows 37 and 39. This causes the container to open by breaking the seal at points 41 and 42, which points are caused to separate as shown by the arrow 40.

The foregoing structure is admirably suited to stacking and is extremely strong because of the multiple folds which form each of the gable sections 44 and 46.

As shown in FIG. 5, a conventional container can be modified to provide several of the features of the modification of FIGS. 1 through 4. The bottom section of

the container is formed in any desired manner as is well known in the art.

The container blank 50 is provided with four parallel score lines 52, 54, 56 and 58 and two parallel score lines 60 and 62 which intersect at right angles with the four parallel score lines, to form five upper sections, US 1, US 2, US 3, US 4 and US 5, five intermediate sections IS 1, IS 2, IS 3, IS 4 and IS 5 as well as five bottom sections B 1, B 2, B 3, B 4 and B 5.

The sections US 5, IS 5 and BS 5 serve only an overlap section which is adhered to the corresponding sections US 1, IS 1 and B 1.

The zone 61 is the region in which the upper end of the container of FIG. 6 is sealed.

As an alternative the intermediate sections IS 1, IS 2, IS 3, IS 4, and IS 5 can be eliminated so that the container will take on an appearance which corresponds to that which is seen in FIGS. 1 and 3.

In the modification of FIGS. 1 through 4, the peripheral edge of the blank is sealed after the blank is formed into a container. It should be noted that the tabs T 1 and T 2 are merely accessories of convenience which assist in opening of the container, but for purposes of explanation the fold lines 21 and 23 are considered as peripheral edges of the blank.

It should also be noted that in the drawings, short dashed score lines are employed to signify inward folds while long dashed lines are employed to signify outward folds.

The blank 70 of FIG. 7 forms a conelike structure 80. Opposing tab sections such as 81 and 86 or 83 and 87 are pulled apart to open the container. One of the tabs can then be used as a spout for dispensing the contents of the container.

The circular blank 70 has an octagonal center section 71 which is bounded by eight triangular sections 72, 73, 74, 75, 76, 77, 78 and 79. Three score lines extend from the apex of each of the triangles, to the periphery of the blank. The radial score lines, as for example 72S and 79S which extend from triangles 72 and 79 respectively form edges of the container as shown in FIG. 8.

FIG. 8A shows another configuration which is possible using the blank 70 of FIG. 7. The score lines 82S, 83S, 84S, 85S, 86S, 87S, 88S and 89S are folded inward instead of outward, as shown in FIG. 7, and alternate pairs of sections; 89-89A and 88-88A; 87-87A and 86-86A; 85-85A and 84-84A; and 83-83A and 82-82A are brought together along their outer corner regions. Opposing pairs of flaps can thus be pulled in opposite directions in order to open the container.

The blank 90, of FIG. 9 produces a pyramid type of configuration as shown in FIG. 11. The blank has a square center section 91 and five score lines extend from each corner of the square to a point on the periphery of the blank 90.

The length of the score lines 92S and 96S are seen to be dimensioned such that the peripheral edges 95P and 92P lie on the score line 95A.

FIG. 11A shows an alternate fold modification of the blank of FIG. 9. In a manner similar to the FIG. 8A modification, pairs of flaps are brought together so that fold lines 92S and 96S, 93S and 97S, 94S and 98S, and 95S and 99S respectively are brought together.

The modification of FIG. 13 is formed from a blank 120. As in the case of the blank 90, five score lines extend from each corner 122, 123, 124 and 125 of the square center section 121. The blank 120 of FIG. 12

resembles the blank 90, of FIG. 9, but the blanks are not folded in the same manner and thus yield different types of containers.

The container 130 is opened by pulling on tabs 122T and 124T or 125T and 123T.

I claim:

1. A container blank comprising a generally rectangular sheet having generally parallel opposed free side edges,

a first pair of parallel score lines,

a second pair of parallel score lines, said first pair of parallel score lines being perpendicular to said second pair of parallel score lines and dividing said sheet into a plurality of sections, and including,

a rectangular center section, four corner outer sections, and four intermediate outer sections, each of said corner outer sections having a score line which extends from a corner of the center section to a corner of the sheet,

each of two opposite intermediate outer sections having two score lines which extend from the corners which border on said center section, and meet at a meeting point proximate the outer edge of the respective intermediate outer section and proximate the midway point of said outer edge,

the outer edge of one said intermediate outer sections being in two equal sections, each of said equal sections extending inwardly from a corner of an adjacent corner outer section to an edge point proximate said meeting point of said two score lines of said intermediate outer section.

2. The container blank of claim 1, wherein at least one of said two opposite intermediate outer sections has a score line which extends from said edge point to said meeting point of said two score lines.

3. The container blank of claim 1, wherein each of two corner sections have tab sections extending from one of its outer edges, said two corner sections bounding one of said two opposite intermediate outer sections, said one of its outer edges being the edge which is adjacent said one of said two opposite intermediate outer sections.

4. A container blank comprising a generally rectangular sheet having generally parallel opposed side edges,

at least three score lines parallel to two opposed side edges,

at least one score line perpendicular to said at least three score lines, and dividing said sheet into a plurality of sections, and including,

at least four upper sections, said at least four upper sections being bounded by one side edge and said at least one score line,

each one of two non-adjacent upper sections of said at least four upper sections having a score line which extends from each corner formed by the intersection of said at least three score lines and said at least one score line, to a meeting point proximate the mid-point of the side edge of the respective one of two non-adjacent upper sections,

the side edge of one of said one of two non-adjacent upper sections being in two equal sections, each of said equal sections extending inwardly from a corner of an adjacent upper section to an edge point proximate said meeting point of the score lines which extend from two corners of said one of two non-adjacent upper sections.

5. The container blank of claim 4, wherein at least one of said two non-adjacent upper sections score line which extend from the mid-point of said side edge to said meeting point.

6. The container blank of claim 4, wherein each of the other two non-adjacent upper sections have tab sections extending from its side edge.

7. A nestable liquid dispensing container having a dispensing spout and a peaked upper end, comprising two opposing rectangular side walls, said side walls slanting inwardly and upwardly from a base region to an upper region at which said side walls come together to form two triangular regions,

one of said triangular regions being closed by an inwardly folded wall member, the other of said triangular regions being closed by an outwardly folded wall member, the upper edge of said outwardly folded wall section sloping downwardly and outwardly, the distance from the side wall edge which adjoins said outwardly folded wall section to the outer-most point of said outwardly folded section being less than the distance from the side wall edge which adjoins said inwardly folded wall section to the corresponding point on the inwardly folded wall,

whereby said inwardly folded wall provides a recess for the nesting of an outwardly folded section of another identical liquid dispensing container.

8. The container of claim 7, wherein said outwardly folded wall has three substantially triangular sections forming a pyramid shape dispensing spout.

9. The container of claim 8, wherein the apex of the triangular region formed by the juncture of said two side walls is substantially above said outermost point of said outwardly folded section.

10. A container blank comprising a polygonal sheet having a plurality of score lines dividing said sheet into a plurality of sections, and including a rectangular center section,

four groups of four generally triangular sections each triangular section of each group having an apex co-

incident with one corner of said rectangular center section,

four generally triangular sections, each having one side coincident with one side of said rectangular center section.

11. A container blank comprising a substantially circular sheet having,

a first pair of parallel score lines, a second pair of parallel score lines, said first pair of parallel score lines being perpendicular to said second pair of parallel score lines,

a third pair of parallel score lines, said third pair of parallel score lines forming a substantially 45° angle with said first pair of parallel score lines,

a fourth pair of parallel score lines, said fourth pair of parallel score lines being perpendicular to said third pair of parallel score lines,

the four pairs of parallel score lines, in combination forming an octagonal center section, and eight triangular sections each having one side coincident with one side of said octagonal center section, and a score line extending from an apex of each of said eight triangular sections, said apex being opposite the side of the respective triangular section which is coincident with said octagonal center section.

12. A container blank comprising a polygonal sheet having a plurality of opposed free side edges,

a first pair of generally parallel score lines, a second pair of generally parallel score lines, perpendicular to said first pair of parallel score lines and forming a rectangular center section,

each corner of said rectangular center section being coincident with a vertex of at least three substantially triangular sections formed by score lines,

each one of at least two opposite sides of said rectangular center section being coincident with one side of a triangular section formed by two score lines each of which extends from a corner of said rectangular center section and which meet at a point proximate a side edge of said sheet.

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