United States Patent [19]

Monaghan

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[45] **Nov. 27, 1973**

[54] **CONTAINER CONSTRUCTION AND CONTAINER BLANK**

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[73] Assignee: **Monaghan Automated Systems, Inc.,** Green Brook, N.J.

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[52] **U.S. Cl.**..... **229/32,** 220/62, 229/DIG. 12

[51] **Int. Cl.**..... **B65d 5/26,** B65d 5/36, B65d 71/00

[58] **Field of Search**..... 229/32, 31, DIG. 12; 220/62, 106

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Primary Examiner—Davis T. Moorhead
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[57] **ABSTRACT**

A container blank comprises a one piece sheet of paper board, fibre board and similar material which includes a central bottom forming panel having rounded corner portions formed by score lines which separates each side and end portion of the bottom from substantially coextensive side and end flaps formed on the exterior of the score lines. Each rounded corner is provided with a rounded slot cutout which defines a rectangular securing tab or flap joined at the center of the rounded corner to the bottom panel. The blank is erected into a container by orienting the side and end flaps upwardly by bending them about the score line connections to the bottom panel and then by bending the rectangular flap upwardly to close the slot formed between adjacent ends of the side and end panels. The side and end panels are either abutted at the rounded corners or spaced apart, but in each case they are overlapped by the securing flaps. The complete container is held in a rigid erected condition by stapling the corner securing flaps to the associated side and end panels.

14 Claims, 12 Drawing Figures

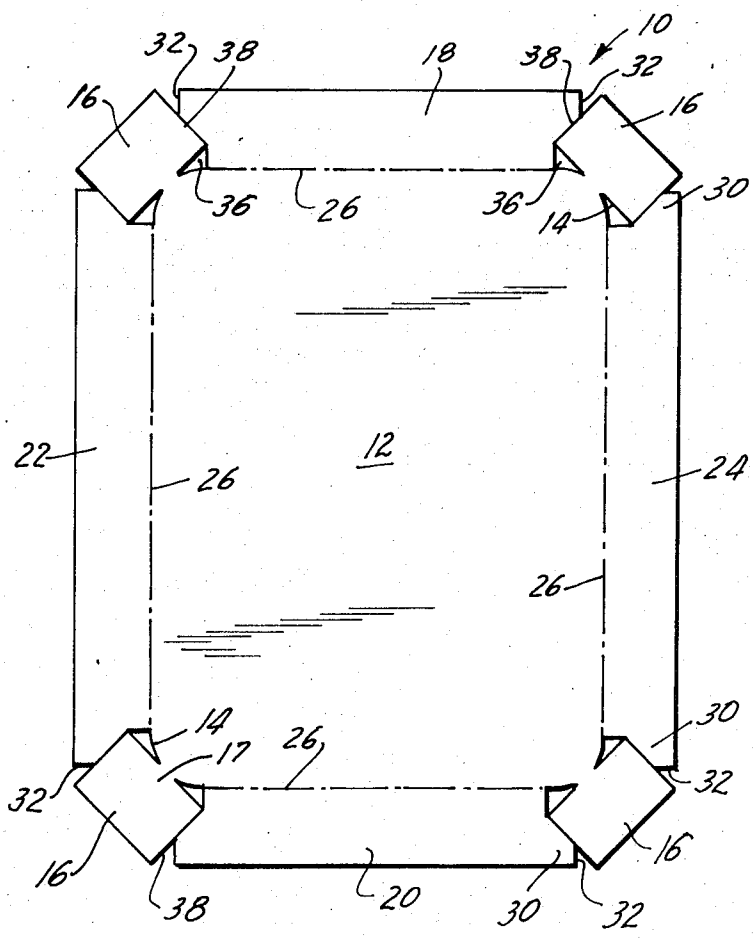


FIG. 1

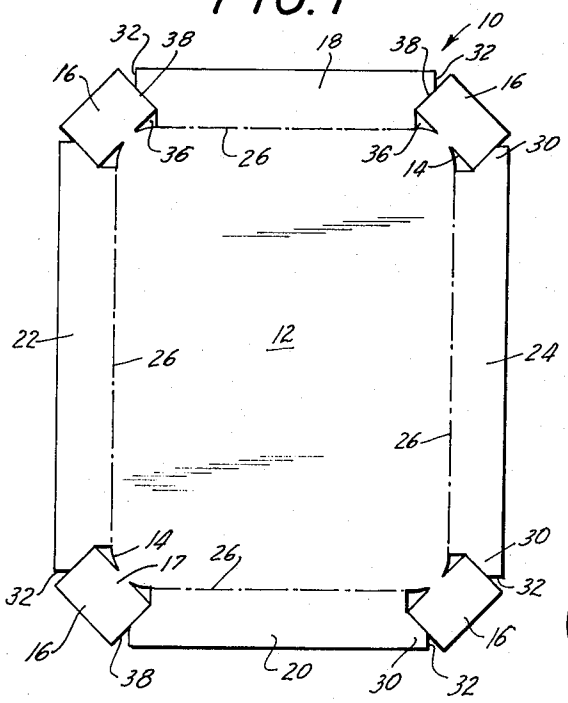
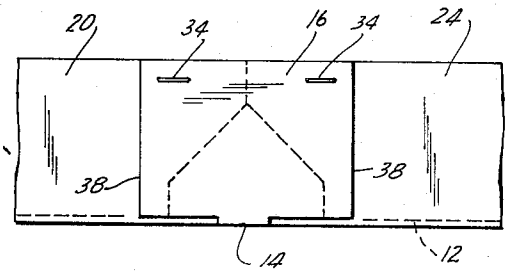


FIG. 4



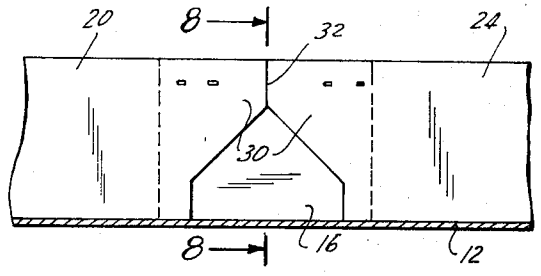


FIG. 5

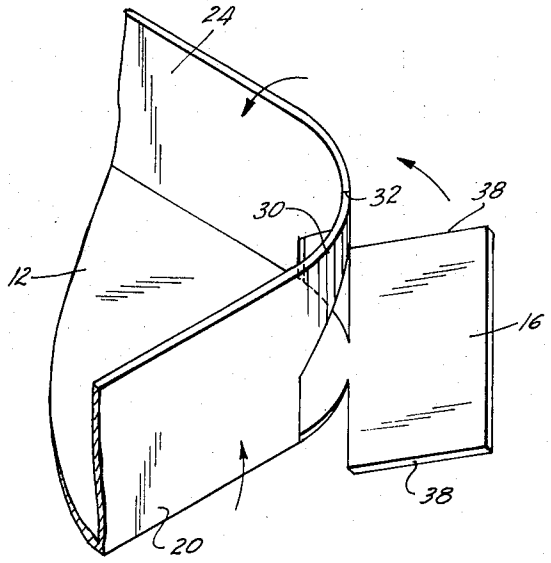


FIG. 2

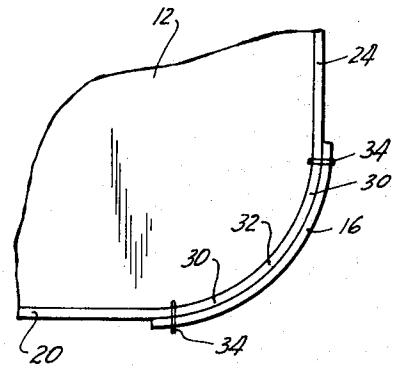


FIG. 3

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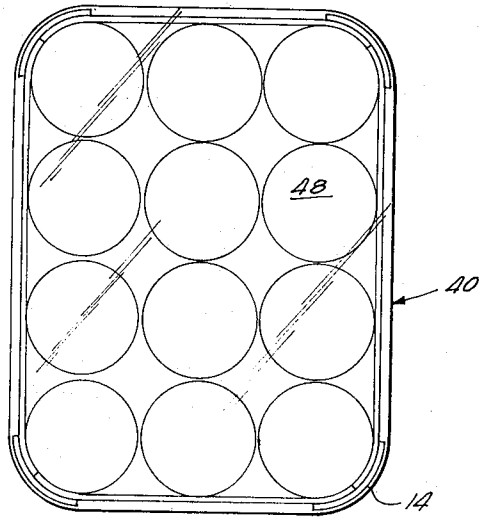


FIG. 6

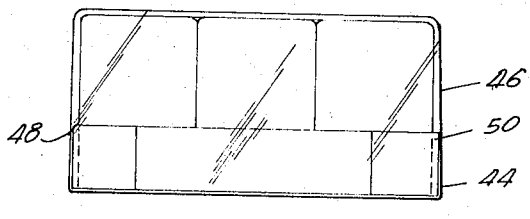


FIG. 7

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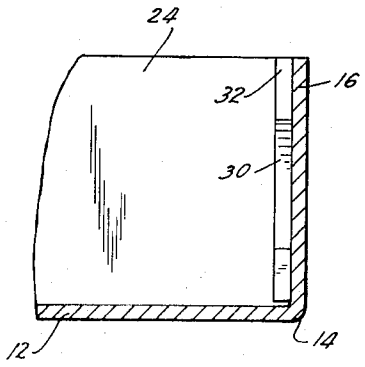
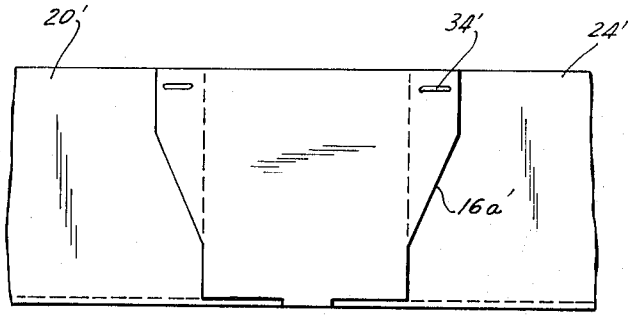


FIG. 8

FIG. 10



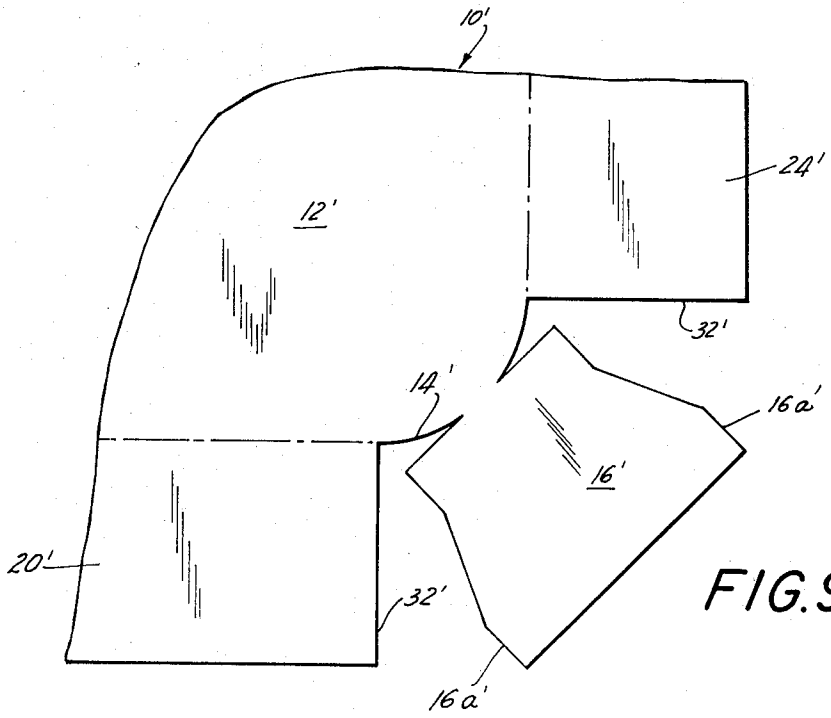


FIG. 9

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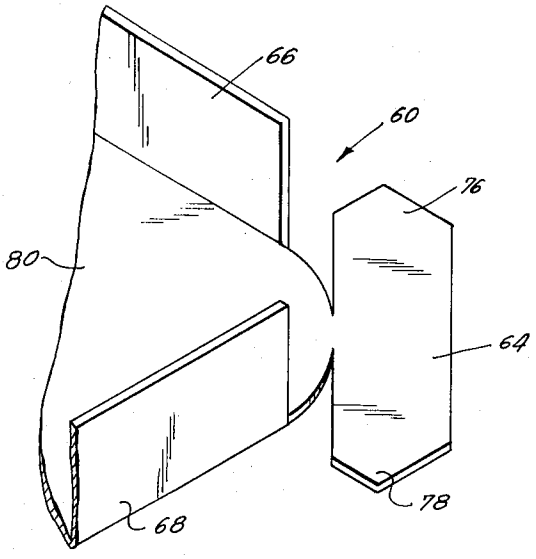


FIG. 11

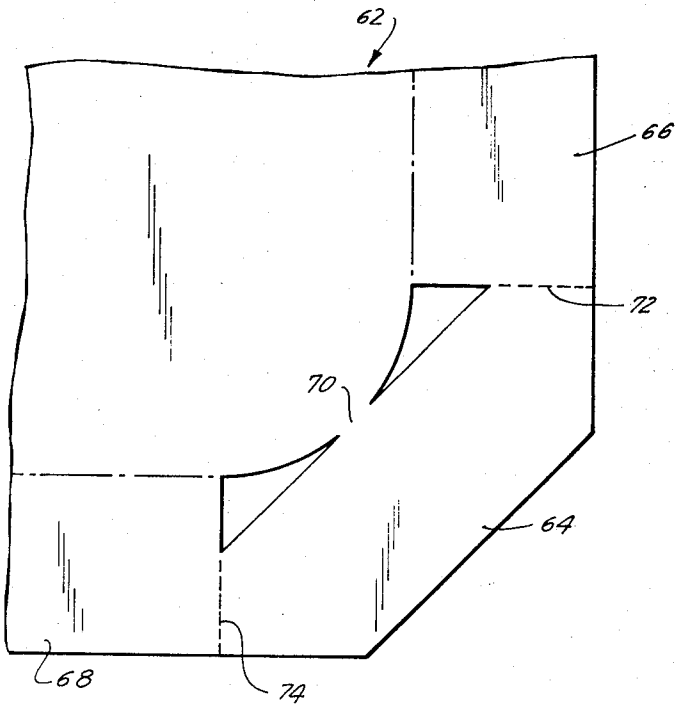


FIG. 12

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CONTAINER CONSTRUCTION AND CONTAINER BLANK

SUMMARY OF THE INVENTION

This invention relates in general to the construction of containers and container blanks, and in particular to a new and useful container having rounded ends and to a blank therefor which is formed of a single piece of a material such as cardboard, fibre board, and the like, and which include end and side flaps which are folded upwardly from a bottom panel with rounded corners and which includes rectangular securing panels joined to each corner which bridge the gap between and is fastened to adjacent end and side panels.

The present invention is an improvement over the prior art in the provision of an easily erectable container blank construction which may be made of a single piece and which includes rectangular panel portions which are centrally connected at each rounded corner, and which provides bridging tabs to hold the side and end flaps together when the side and end flaps and the bridging tabs are oriented upright in respect to a bottom panel. The construction makes is possible to form a rounded tray or container simply and easily from a single container blank and using a minimum amount of material, and it provides a reinforced rounded corner construction of a simple, durable and economic formation.

Accordingly, it is an object of the invention to provide an improved container blank which includes a central bottom forming panel having rounded corners with bridging tabs or securing tabs formed integrally therewith and joined at the center of the rounded corner part, and which tabs are employed to join together the side and end flaps which are formed outwardly of score lines at the edges of the bottom panel; and wherein the tabs form bridging and reinforcing elements which overlap the adjacent sides and end flap at the rounded corners.

A further object of the invention is to provide a container or tray which includes a bottom formed with rounded corners and end and side flaps having tab portions which extend outwardly from the associated flaps to the center of the rounded corners, and which are overlapped and interconnected at the corners by a bridging tab which is formed integrally with the bottom and which closes the end and side flaps.

A further object of the invention is to provide a container, tray or the like, which is simple in design, rugged in construction and economical to manufacture.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference should be had to the accompanying drawing and descriptive matter in which there are illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of a container or tray blank constructed in accordance with the invention;

FIG. 2 is a perspective view of a tray or container shown without its corner flaps fastened;

FIG. 3 is a top plan view of the container shown in FIG. 2 but with the corner flap fastened;

FIG. 4 is a partial end elevational view of the corner of an erected tray or container of the type shown in FIG. 2;

FIG. 5 is a partial corner sectional view of an erected corner;

FIG. 6 is a top plan view of a container or tray having articles packed therein;

FIG. 7 is an end elevational view of the container or tray shown in FIG. 6;

FIG. 8 is a section taken along the line 8—8 of FIG. 5;

FIG. 9 is an enlarged partial plan view of another embodiment of the invention;

FIG. 10 is a view similar to FIG. 4 of the embodiment shown in FIG. 9.

FIG. 11 is a partial perspective view similar to FIG. 2 of the preferred embodiment of the invention; and

FIG. 12 is partial top plan of a partly folded blank of the embodiment shown in FIG. 11.

GENERAL DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in particular, the invention embodied therein as shown in FIGS. 1–8 includes a container or tray blank generally designated 10 which includes a generally rectangular bottom panel 12 having rounded corners 14 with securing tabs or corner flaps 16 integrally connected to a center area of each corner. The securing flaps 16 are foldable upwardly about a rounded score line connection 17 at the corners 14 and they may be arranged upright and bent around the corners during erection. The blank 10 also includes end flaps 18 and 20 and side flaps 22 and 24 which are demarcated from the bottom panel by score lines 26. The side and end panels 18, 20 and 22, 24, are all provided with cutaway projecting end tabs or flap portions 30 at each end which are of a length such that partial straight edges 32 at their outer lateral ends are arranged after erection in abutting relationship inside the radius of the corner as shown in FIGS. 2 and 3. When adjacent end and side flaps 18 and 24, 20 and 24, 20 and 22, and 18 and 22 are arranged in abutting relationship, after they have been folded upwardly about their associated score lines 26, the container is secured in an erected condition by bending the corner flap 16 around the corner curve and by applying securing means in the form, for example, of staples 34.

In the embodiment shown in FIGS. 1–8 the corner flaps 16 are substantially rectangular and they are formed between adjacent end and side flaps by slotting substantially triangular areas 36 in the blank 10 on each side of the corner center points. The tabs 16 are separated by slit lines 38 from the associated end and side panels.

In the embodiment of FIGS. 9 and 10 a blank 10′ includes a bottom panel 12′ having rounded corners 14′ with a securing tab 16′ connected centrally to the rounded corner and extending outwardly therefrom as shown in FIG. 9. In this embodiment adjacent end flaps and side flaps 20′ and 24′ are formed with straight edges 32′ and after erection these edges 32′ are spaced apart and located at opposite ends of the corners 14′. The securing flap 16 is then formed and oriented upright to extend around the corner and only a tab portion 16a′ on each end overlaps the adjacent side and end panels 24′ and 20′ respectively. The securing flaps

16' are secured in the erected condition by means of adhesive or staples 34' as in the other embodiment.

FIGS. 6 and 7 show an example of a container generally designated 40 which is formed of a blank similar to the blank shown in either of the other embodiments, and in this construction the container includes a tray portion 44 filled with rounded containers, or cans 48, which are placed into the tray portion and they may be compactly arranged with the rounded containers at each end filling into the space defined by the rounded corners 14''. A cover or wrap of a light weight plastic film 46 is applied over the containers in close clinging engagement therewith and over the bottom of the tray 44.

In the preferred embodiment of the invention shown in FIGS. 11 and 12, there is provided a container generally designated 60 which is formed of a blank generally designated 62. In this construction a securing tab or flap 64 is defined between a side panel 66 and an end panel 68 and is connected to the blank at a corner 70. The flap 64 is separated from the side wall panel 66 by a score line 72 and from the end wall panel 68 by a score line 74. The flap 64 which is formed in this fashion has triangularly shaped end tabs or securing wings 76 and 78 which overlie a respective adjacent end panel 68 and side panel 66 in the erected condition and may be secured thereto such as by a staple or adhesive (not shown) which are applied to the tabs 76 and 78. With this type of construction the container 60 forms an open top tray which may be filled with rounded articles such as cans similar to the cans 48 shown in FIG. 6, and thereafter the side and end flaps 66 and 68 may be turned upwardly and held against the sides of these cans. It is then a simple matter to bend the securing flap 64 upwardly and to form it around a container or can positioned on the bottom panel 80 after the securing tabs 76 and 78 have been coated with adhesive, for example.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A container blank comprising a bottom forming panel having rounded corners, a securing tab connected substantially centrally to each of said rounded corners and spaced from the remaining portion of said rounded corners, said securing tab being foldable in respect to said bottom forming panel, a side forming panel substantially coextensive with said bottom forming panel on each side thereof, and each being demarcated from said bottom forming panel by respective score lines, and an end forming panel substantially coextensive with said bottom forming panel at each end thereof and demarcated from said bottom forming panel by respective score lines.

2. A container blank according to claim 1, wherein said securing tab is substantially rectangular, said side forming panels and said end forming panels each having a projecting tab formation at each end.

3. A container blank according to claim 2, wherein said projecting tab portions at each end of said side and end panels are separated from said securing tabs by slits to define the end boundaries of the securing tabs.

4. A container blank according to claim 1, wherein said bottom forming panel is substantially rectangular and has four corners with a securing tab secured to each of said corners.

5. A bottom forming panel according to claim 4, wherein said securing tab is spaced from the adjacent side and end panels in each corner, said side and end panels all terminating in a substantially straight side edge.

6. A container construction made of a material as paper board, fibre board, cardboard and the like comprising a bottom having a plurality of corners which are rounded, a side flap secured to each edge of said bottom and extending upwardly therefrom to form side walls, a securing tab connected only substantially centrally to each of said rounded corners and unattached to the remainder of said rounded corners, said securing tab extending upwardly from said bottom and around said corners and overlapping the adjacent side walls at each end thereof, and means securing said securing tab to the adjacent side walls at each of its ends.

7. A container construction according to claim 6, wherein said securing tab is substantially rectangular.

8. A container according to claim 7, wherein said side walls at each side of said securing tab include projection flaps at each end which are arranged in end to end substantially abutting relationship, said securing tab overlying the projection tabs and being secured thereto.

9. A container according to claim 6, wherein said securing tabs are substantially rectangular and are connected centrally to the center of each corner and are folded upwardly from the central connection to said corner and oriented around the corner to overlap the adjacent side flaps.

10. A container according to claim 6, wherein said bottom is substantially rectangular and wherein said container bottom includes four corners, said side walls comprising walls which are substantially coextensive with said bottom and are hingedly connected thereto and extend upwardly therefrom, said securing tabs being connected to said corners and extending around said corners and being secured to respective ends of adjacent side walls of said container.

11. A container according to claim 10, wherein said securing tabs have extension flaps on each end, the adjacent side walls having straight edges which are overlapped by said extension tabs at each end of said securing flaps, said securing flaps being secured to the respective adjacent side walls at the location of said extension flaps.

12. A container according to claim 6, wherein said container comprises a tray being adapted to be filled with rounded articles, and a plastic film engaged around said rounded articles over said container and around the top and bottom of said tray.

13. A container construction for holding rounded containers comprising a bottom panel having four rounded corners adapted to hold a rounded container such as cans, a side flap secured to each edge of said bottom panel and extending upwardly therefrom and forming side walls extending along each side thereof, a securing tab connected only substantially centrally to each of said rounded corners and unattached to the remainder of said rounded corners, said securing tab extending upwardly from said bottom panel and formed around the containers at the corners and overlapping the adjacent side walls at each end thereof, a said securing tab having a wing portion at each end overlapping the adjacent side panels and being secured thereto.

14. A container according to claim 13, wherein said securing tab includes integrally formed wings of triangular configuration.

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