

[54] SNAP-ERECTED CONTAINER

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

[58] Field of Search **229/41 R, 41 B, 1.5 B, 229/8, 16 R, 21, 34 R, 57; 220/83**

[56] **References Cited**

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3,630,430	12/1971	Struble	229/16 B
3,684,157	8/1972	Mendez	229/16

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[57]

ABSTRACT

A container in the form of a scoop having front, rear and end wall panels hingedly connected together at arcuate score lines defining convex side edges for the end wall panels and concave side edges for the front and rear wall panels, a bottom hingedly connected to at least two of the wall panels, and an open top, the carton being erected by squeezing together the end wall panels with the fingers of one hand. The carton erects with a "snap" and stays erect without pushing up from the bottom, stands erect before or after filling or when partly empty, and can be conveniently erected and used for the "scooping" of materials thereto in the same motion and using a single hand.

11 Claims, 10 Drawing Figures

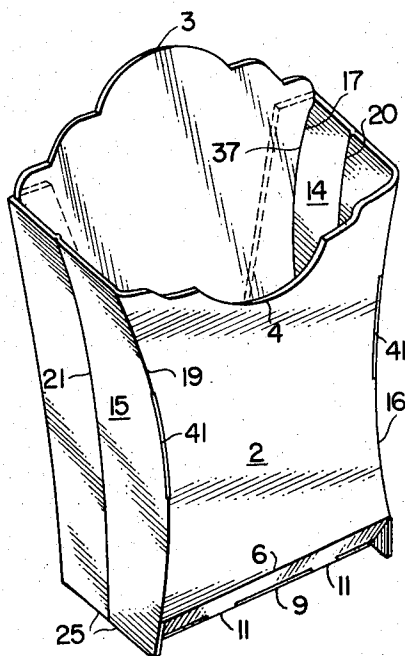


FIG. 2

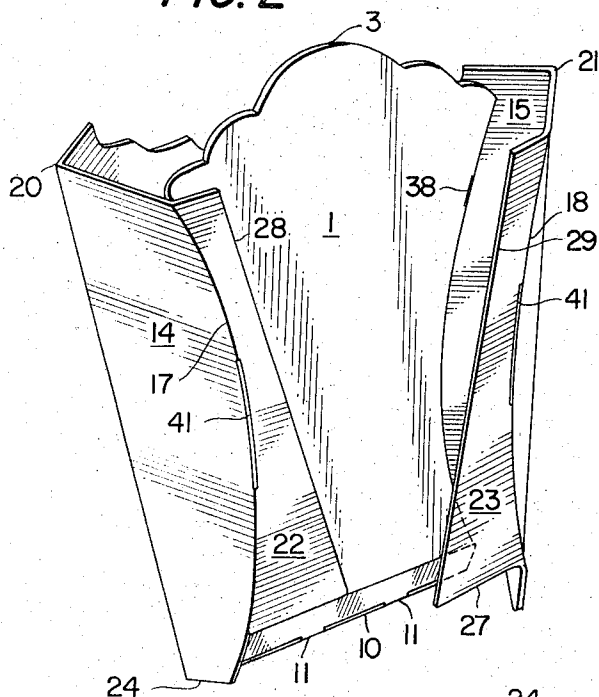


FIG. 3

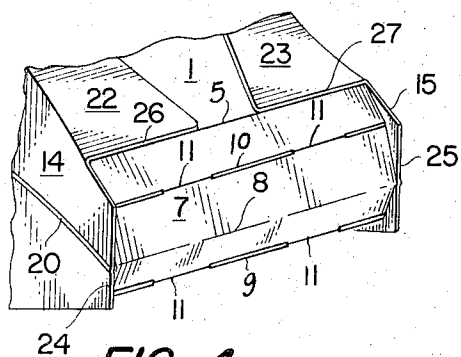
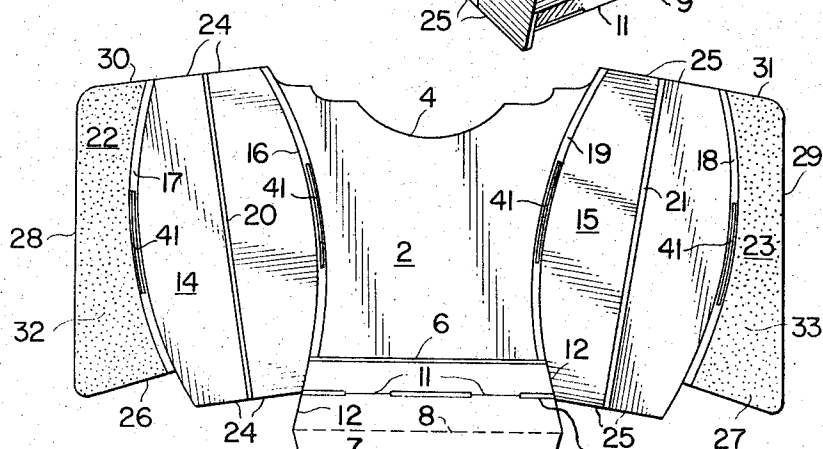
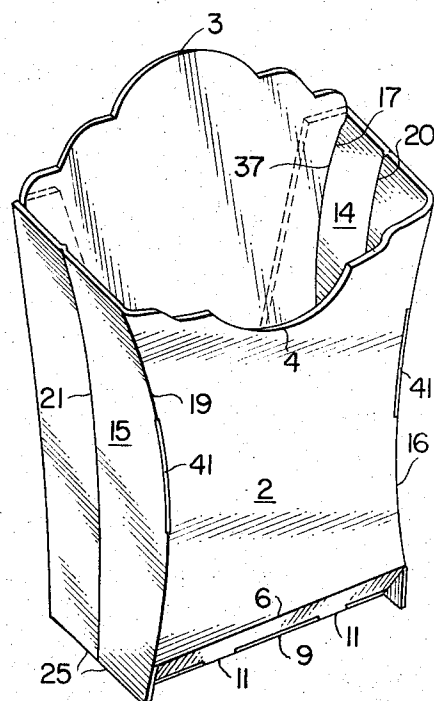


FIG. 4

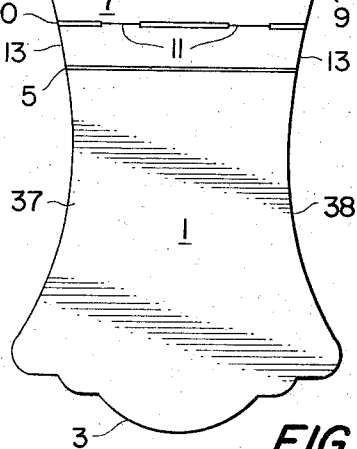


FIG. 1

FIG. 5

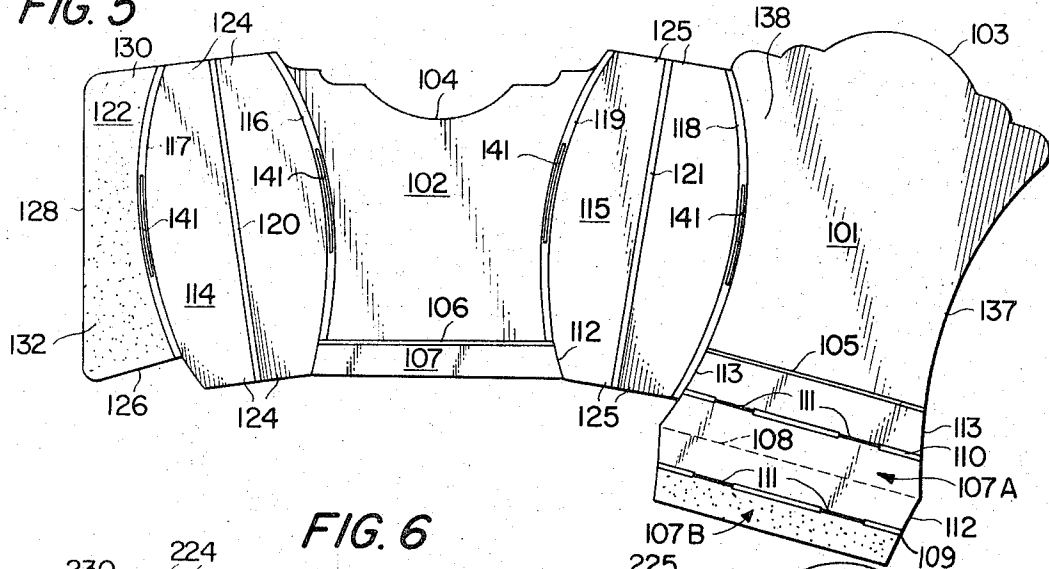


FIG. 6

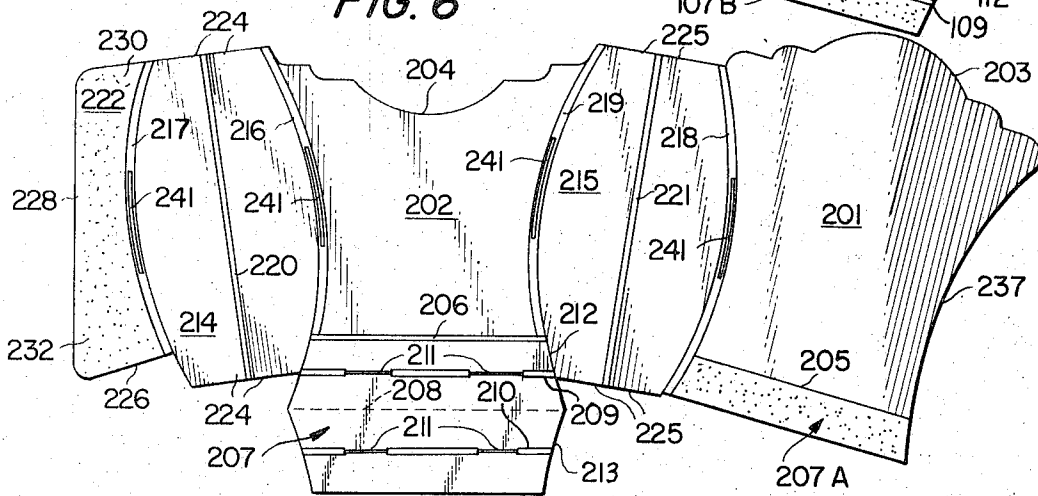
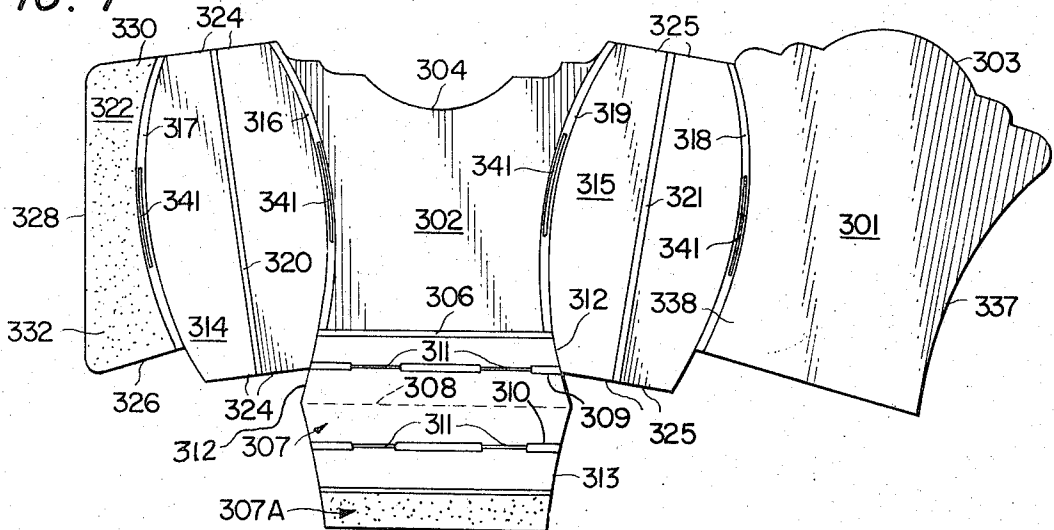


FIG. 7



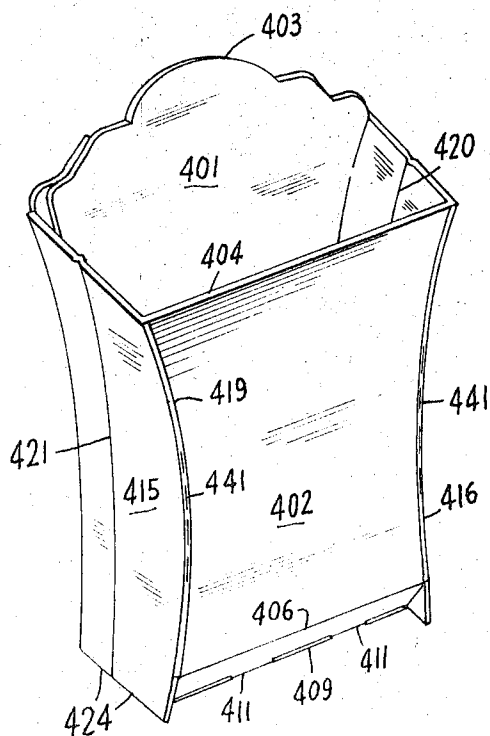
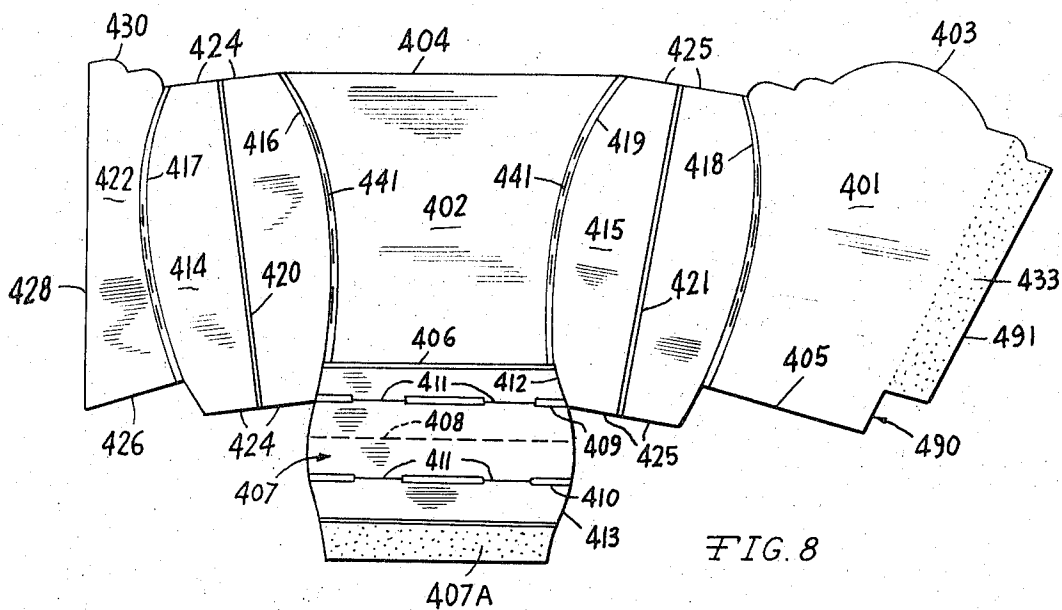


FIG. 10

SNAP-ERECTED CONTAINER

BACKGROUND OF INVENTION

The present invention relates to containers, and particularly refers to containers of the scoop-type which may be rapidly snap-erected by pressing in the side walls, and which carton remains in such erected form.

Representative "snap-erected" scoop-type containers are known in the art. In some of the prior art structures, the bottom folds down, whereas in others the bottom folds up, mostly with a much less than desirable degree of rapidity. In most versions, erection of the carton was far too slow to enable it to be erected and used as a scoop in a single motion. Representative patents of these types include Crawford U.S. Pat. No. 904,050; Shaw U.S. Pat. No. 1,034,522; Stephens U.S. Pat. No. 2,078,038; Holy U.S. Pat. No. 2,337,199; and Waters U.S. Pat. No. 2,385,898. A substantial advance in the art was provided by the structure of Struble U.S. Pat. No. 3,630,430, which had an arcuate bottom and which could be quickly erected upon pressure on both sides and the bottom. However, even this carton leaves considerable to be desired from the standpoint of ready erection, especially with a single hand, from the standpoint of not requiring pressure upon the bottom thereof, and also from the standpoint of standing erect in either empty or full position, or when partly empty. A similar carton but one having a bottom formed of trapezoidal panels is disclosed in Mendez U.S. Pat. No. 3,684,157. It is apparent that a container of the readily erectable type, which is useable as a scoop, and which stands erect, stably, when empty or full or when partly empty, and which can be erected with only a single hand of the user, without the necessity for any pressure on the bottom (which frequently requires the employment of both hands), and which can be readily erected and used as a scoop in a single convenient motion, would be highly desirable from the standpoint of the merchandising trade.

OBJECTS OF THE INVENTION

It is an object of the invention to provide a rapidly erected or "snap-erected" container which is useable as a scoop, having one or more of the foregoing advantages. It is a further object to provide a blank from which the container may be readily produced. Another object of the invention is the provision of such a carton and a blank therefor wherein the side panels are defined by outwardly bowing or convex edges, cooperating with concave edges of the rear panel and front panel, side panel bottom straight edges, and a bottom defined by a series of scores, preferably parallel which together with pendant glue flaps connected to an edge of the side panels and vertical scores bisecting the side panels provide the necessary elements for production of the blank and erection of the superior scoop-type container according to the invention.

Other objects will become apparent hereinafter and still others will be obvious to one skilled in the art to which this invention pertains.

SUMMARY OF THE INVENTION

The present invention relates to a readily-erected or "snap" erected container which may be conveniently employed as a scoop, and which fulfills all of the re-

quirements as set forth in the foregoing. The container has two convex end wall panels and concave front and rear wall panels which are defined by arcuate score lines, so that the container can be readily erected by pressing inwardly upon the side panels simultaneously with employing the same as a scoop. The novel container of the invention has a further advantage of requiring less paperboard for its construction, increasing the economy thereof. Because of the construction of the sides and bottom of the container, it rests stably and erectly upon the straight edges of the side panels whether full or empty or in partly empty condition.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, FIG. 1 illustrates a plan view of the blank of the carton in accordance with the present invention viewed from the inside.

FIG. 2 is a rear perspective view showing a blank of FIG. 1 partially assembled.

FIG. 3 is a front perspective view of the carton in completely assembled and expanded condition.

FIG. 4 is a perspective view of the bottom of the carton in assembled and expanded condition.

FIG. 5 is a plan view of a blank for forming a carton which is a modified embodiment of the invention.

FIG. 6 is a plan view of a blank for forming a carton which is a still further modified embodiment.

FIG. 7 is a plan view of a blank for forming a carton which is still an additional embodiment.

FIG. 8 is a plan view for forming a carton which is still another embodiment.

FIG. 9 is a plan view of a carton formed from the blank of FIG. 8, and showing the carton in knocked down flat form, and

FIG. 10 is a perspective view of the fully erected carton of FIGS. 8 and 9.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIG. 1, a carton blank is there shown comprising a rear wall panel 1 having an outwardly extending edge 3, and a front wall panel 2 having a recessed edge 4, both front wall and rear wall panels being hingedly connected to a bottom panel 7 along attaching fold or score lines 5 and 6. Equidistant from the score lines 5 and 6, and extending laterally of the bottom panel 7 is a central score line 8. Lying intermediate the central score line 8 and the attaching score lines 5 and 6 are intermediate score lines 9 and 10 both of which as shown preferably include cut score line portions 11. The edges 12 and 13 of bottom wall panel 7 taper on both sides from greatest lateral dimension at the central score line 8 to a reduced dimension along the attaching score lines 5 and 6. Edges 12 and 13 may accordingly hereinafter be referred to as tapering edges.

End wall panels 14 and 15 are articulated to front wall panel 2 along the arcuate convex edges thereof at arcuate score lines 17 and 19 and are defined at the other convex edges by arcuate score lines 16 and 18 which, upon ultimate erection of the carton, cooperate with concave edges 37 and 38 of the rear wall panel 1. Longitudinal bisecting score lines 20 and 21 bisect the end wall panels 14 and 15 into two substantially equal areas, and glue flaps 22 and 23 are attached along arcuate score lines 17 and 18 to the end wall panels 14 and 15, respectively. Straight edges 24 and 25 at the bottom

of end wall panels 14 and 15 and also optionally at the top thereof complete definition of the end wall panels of the container of the invention. Glue flaps 22 and 23 are provided with straight bottom edges 26 and 27, respectively, which in the erected carton substantially overlie attaching score line 5 whereby the rear wall panel 1 is hingedly connected to the bottom wall panel 7. Glue flap longitudinal edges 28 and 29 appear as straight vertical edges in FIG. 1, but as better shown in FIG. 2 preferably taper somewhat inwardly toward the bottom of the carton upon erection. Optionally straight edges 30 and 31 complete definition of the glue flaps. Adhesive 32 and 33 is shown on glue flaps 22 and 23 respectively, and may be of any suitable or convenient type and in any suitable or convenient configuration such as a glue strip, although as shown the adhesive covers the entire glue flap.

The partially erected container of the invention is shown in the rear perspective view of FIG. 2. Here the end panels are folded along bisecting score lines 20 and 21, and arcuate score lines 17 and 18 defining the rear of the end panels are clearly visible. Glue flap 22 is affixed to rear wall panel 1 and the tapered edge 28 of glue flap 22 is obvious. Straight edge 26 of glue flap 22 overlies attaching score line 5, and intermediate score line 10 with its cut score line segments 11 appears to the right of straight end panel bottom edge 24. Glue flap 23 is about to be affixed to the rear wall panel 1 to bring the concave edge 38 of the rear wall panel 1 into coincidence with arcuate score line 18 of the side wall panel. When erection is complete, straight edge 27 of glue flap 23 also overlies attaching score line 5 and edge 29 of glue flap 23 rests in adhered condition against rear panel 1 with inward taper from top to bottom just as shown for edge 28.

Once gluing is complete, the container of the invention may be folded flat and then erected by simple pressure on both side panels into the form shown in FIG. 3. Positive erection of the carton is insured because of arcuate score lines 16, 17, 18 and 19, on both sides of side panels 14 and 15. The front perspective of FIG. 3 also shows the arcuate edge 37 of the rear wall panel 1 in snug fitting position with respect to arcuate edge 17 of end wall panel 14. Positive or "snap" erection of the carton of the invention is also insured by optional cut scored portions 41 of arcuate score lines 16 and 19 as well as 17 and 18 (not shown in FIG. 3). Arcuate edge 28 also snugly nests along score line 18 of side panel 15.

FIG. 4 shows a bottom end perspective of the erected container of FIG. 3. End wall panel bottom straight edges 24 and 25, which lend stability to the container, flank bottom panel 7, complete as shown with the central score line 8 and intermediate score lines 9 and 10, each with optional cut score portion 11. Lower straight edges 26 and 27 of glue flaps 22 and 23 overlie score line 5.

In operation, the operator designed to erect the flat-folded scoop-like container of the invention may employ only two fingers for the purpose. By grasping the container with the thumb and index finger along both side edges thereof, he may simultaneously "snap" the carton into erect position and scoop out the desired produce. Such scoop-like containers or cartons are particularly in demand at drive-in or take-out food shops, since they permit a scoop and serve approach, as is well known in the art.

It should be apparent from the foregoing that modifications of the structural embodiments in accord with the present invention may be readily made by one skilled in the art without departing from the spirit or concept thereof, in particular, that the assembly involving application of glue and folding of the carton blank may readily be rearranged in order of accomplishing such steps, and moreover that the exact structural arrangement of the blank is immaterial so long as a carton or container of the invention be erected or erectable therefrom. Some of such modified structural embodiments will be described below. In the interests of brevity and to facilitate understanding, structures identical or similar to those illustrated in FIGS. 1-4 will be designated by the identical tens and units digits as utilized in FIGS. 1-4. To distinguish from one embodiment to the other, distinctive ascending hundreds digits will be utilized for each successive embodiment.

Referring to FIG. 5, a modified blank for forming a carton according to the invention is shown which in most respects is identical to that shown in FIGS. 1-4. However, the blank differs in that, instead of having the bottom member directly connected to both the front wall panel 102 and rear wall panel 101, it is connected directly only to the rear wall panel 101 at the score line 105, and the rear wall panel member 101 is directly connected to the side wall panel 115 at the score line 118. The bottom of the carton is formed by a bottom member 107 directly connected hingedly to the front wall panel 102 at a score line 106, and a bottom member 107A which is directly connected hingedly to the rear wall panel 101 at the score line 105. Additionally, a glue flap 107B is provided for connecting the rear wall panel 101 to the bottom member 107. In constructing the carton, folds are made at the score lines 120 and 121, the glue flaps 107B glued to the bottom member 107, and the glue flap 122 glued to the side edge 137 of the rear wall panel 101. Complete erection of the carton is then accomplished by squeezing in the sides as in the case of the embodiment of FIGS. 1-4.

FIG. 6 illustrates a blank for forming still another embodiment. Here the bottom 207 is hingedly connected to the front wall panel 202 at the score line 206. A glue flap 207A is hingedly connected to the rear wall panel 201 at a score line 205. Assembly of the carton is carried out in a similar manner by folding at the score lines 220 and 221, gluing the glue flap 207A to the bottom 207, and the glue flap 222 to the side wall 237 of the rear wall panel 101.

The embodiment of FIG. 7 is similar to that of FIG. 6, except that the glue flap 307A is hingedly connected to the bottom 307. Construction is accomplished by gluing the glue flap 307A to the bottom of the rear wall panel 301 and the glue flap 322 to the side 337 of the rear wall panel 301.

Referring to FIGS. 8-10, a still further embodiment is shown. In this embodiment the rear wall panel 401 is not fully complete, having a recess 490 and a cut-off edge 491 provided in order to make the blank more closely nestable with other blanks cut from the same panel. In this embodiment the rear wall panel is formed of two parts, a major rear wall panel member 401 and a minor rear wall panel member 422. A glue area 433 is provided at the edge 491 of the rear wall panel member 401. Alternatively, the glue area may be provided on the rear wall panel member 422. Additionally, a glue flap 407A is hingedly connected to the bottom

407. The carton is constructed by folding at the score lines 420 and 421. The glue flap 407A is then glued to the bottom 405 of the panel member 401, and the glue area 433 glued to the edge of the panel member 422. The carton is then in flat folded condition as shown in FIG. 9 and may be thus stored and shipped. The carton is erected by grasping at the folded score lines 421 and 420. As the edges of the carton are squeezed together, the carton opens and the end wall panels 414 and 415 snap into place in concave arcuate form. The carton then remains open in this condition.

Although in the embodiments shown and described, glue areas were provided on certain flaps and panels, the arrangement may be greatly varied. For example, glue areas may be placed on the back of the carton blank as well as on the front if so desired, although such practice is not generally preferred. Additionally, glue areas may be placed on complementary abutting surfaces of other panels rather than on the panels shown.

Although the bottom of the carton has been shown as made of a single main panel having a median score and subsidiary scores dividing the bottom into four hingedly connected panel members, other configurations and arrangements may be utilized. For example, instead of straight lines connecting the bottom with the front and rear wall panels, arcuate lines may be utilized. Additionally, converging or diverging straight lines may be used so that the bottom comprises a plurality of trapezoidal panels. However, when arcuate or trapezoidal configuration is utilized, the carton has the disadvantage that, in addition to the use of the fingers of a single hand in erecting the carton, the fingers of the other hand must be utilized in punching in the bottom which becomes concavely arcuate in the erected carton.

As additional variations, slit or perforated score lines may be utilized in place of the embossed score line or in combination with embossed score lines of various configurations. Further, instead of being applied as a solid panel, glue areas may be applied as glue strips or even discontinue glue areas.

The container of the invention in the embodiments shown and described has numerous advantages. First, it employs less paperboard in its construction. Second, it erects extremely readily, without the necessity of pushing up from the bottom. It may in fact be erected using only two fingers, such erection being positive in nature. Third, the container stands erectly whether in filled or unfilled condition or in partly empty condition. Fourth, it is the most simple of all containers to erect positively, requiring only the thumb and index finger pressed upon both side panels.

It is accordingly to be understood that the invention is not to be limited to the exact details of operation or the exact structures, methods, or procedures shown and described in the specification and the drawings, since obvious modifications and equivalence will be readily apparent to one skilled in the art.

We claim:

1. A carton comprising a front wall panel, a rear wall panel, and a pair of end wall panels hingedly connected together at arcuate score lines defining complementary convex and concave side edges of adjacent panels, said end wall panels having bisecting folding score lines provided therein permitting said carton to be folded flat, an open top, and a bottom panel hingedly connected to

the lower edges of said front and rear wall panels, but unconnected to the lower edges of said end wall panels, wherein the side edges of said end wall panels are arcuately convex and the side edges of said front and rear wall panels are arcuately concave, whereby said carton may be snapped from flat folded position into open position by squeezing the end wall panels thereof with the fingers of one hand and whereby said carton remains in said open position with said end wall panels curved arcuately concave outwardly, the bottom of said carton bulging downwardly and having a bottom plane not lower than the lower edges of said end wall panels so as to provide stability of said carton upon standing.

2. A carton according to claim 1, wherein said end wall panels and said bottom panel are provided with median folding score lines permitting said carton to be folded flat.

3. A carton according to claim 1, wherein said bottom panel is provided with score lines dividing said panel into four panel members.

4. A carton according to claim 1, wherein some of said score lines are provided with cut slits.

5. An integral blank for forming a carton, suitably cut and scored to provide a front wall panel and a rear wall panel having arcuately concave side edges, and a pair of end wall panels having arcuately convex side edges and having bisecting folding score lines permitting said carton when glued to be folded flat, a bottom panel hingedly connected to the lower edge of at least one of said front wall panel and rear wall panel and unconnected to the lower edges of said end wall panels, and glue flap means for assembling said carton, the dimensions of said bottom panel and said wall panels being such that the bottom of said carton, when erected, bulges downwardly and has a bottom plane not lower than the lower edges of said end wall panels so as to provide stability of said carton upon standing.

6. An integral blank according to claim 5 wherein said side wall panels and said bottom panel are provided with medially positioned folding score lines.

7. An integral blank according to claim 5 wherein said bottom panel is hingedly connected at folding score lines to both said front wall panel and rear wall panel, and wherein glue flaps are provided at an edge of each of said end wall panels adapted to be adhesively affixed to said rear wall panel.

8. An integral blank according to claim 5 wherein said bottom panel is hingedly connected to said rear wall panel at a score line, and wherein said front wall panel is provided with a flap adapted to be adhesively affixed to said bottom panel.

9. An integral blank according to claim 5 wherein said bottom panel is hingedly connected at a score line to said front wall panel and said rear wall panel is provided with a flap for being adhesively affixed to said bottom panel.

10. An integral blank according to claim 5 wherein said bottom panel is connected at a score line to said front wall panel and additionally is provided with a glue flap adapted to be adhesively affixed to the lower edge of said rear wall panel.

11. An integral blank according to claim 5 wherein said rear wall panel is comprised of a pair of rear wall panel members, one hingedly connected to one of said end wall panels and the other hingedly connected to the other of said side wall panels, means for adhesively connecting said rear wall panel members together, and a bottom panel connected at one edge to said front wall panel and having a glue flap at the other edge adapted to be adhesively affixed to said rear wall panel members, one of said rear wall panel members being provided with a recess to permit close nesting of said blank with a group of similar blanks.

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