

July 7, 1953

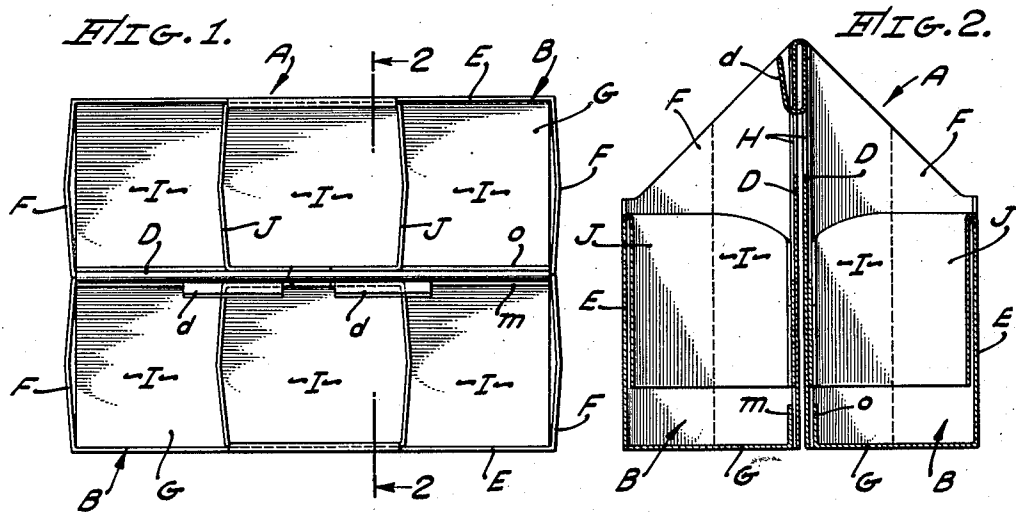
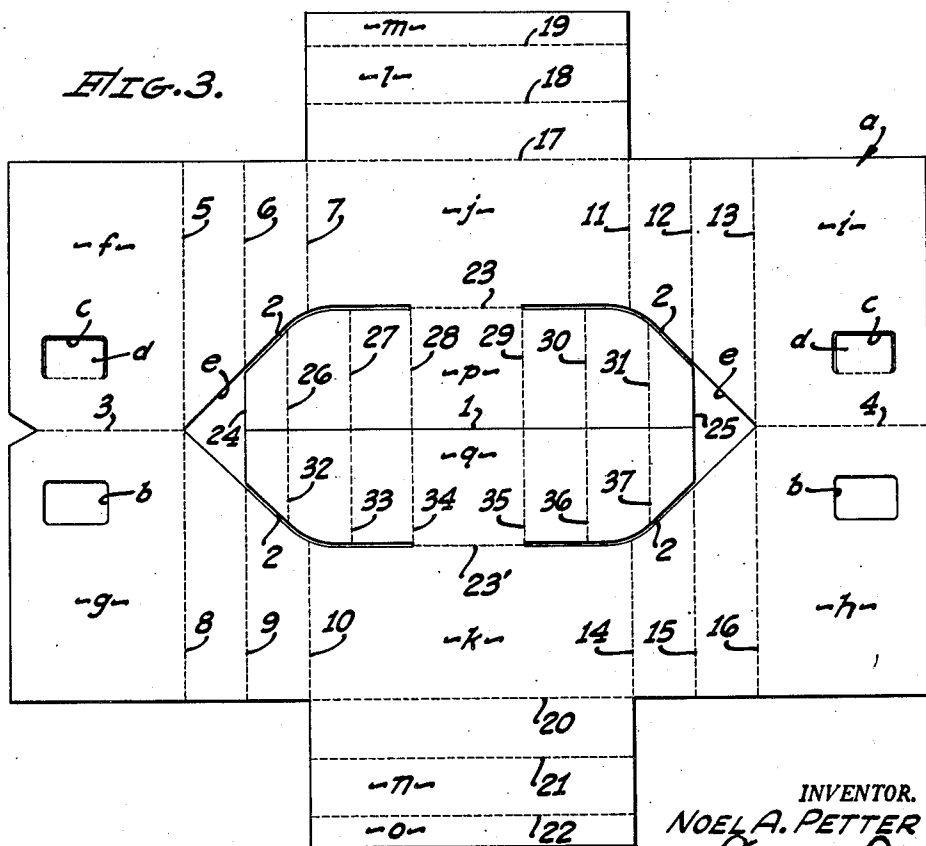
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2,644,631

DISPOSABLE BOTTLE CONTAINER

Filed April 30, 1949

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

FIG. 4.

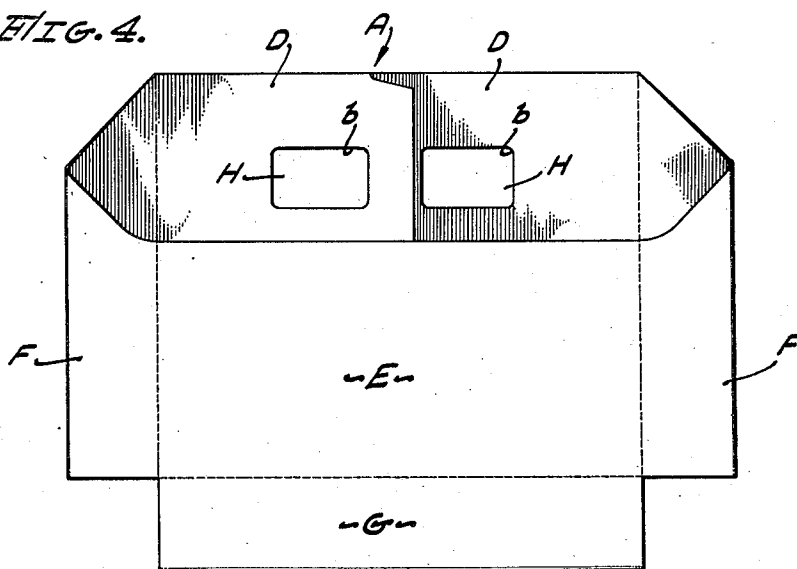
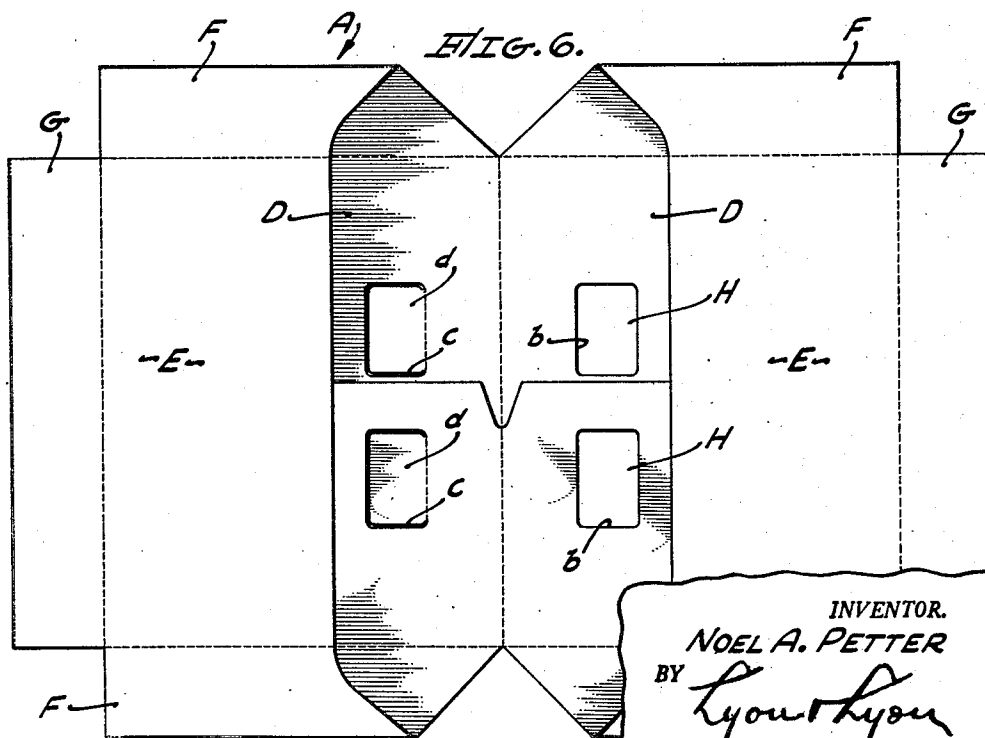


FIG. 5.



FIG. 6.



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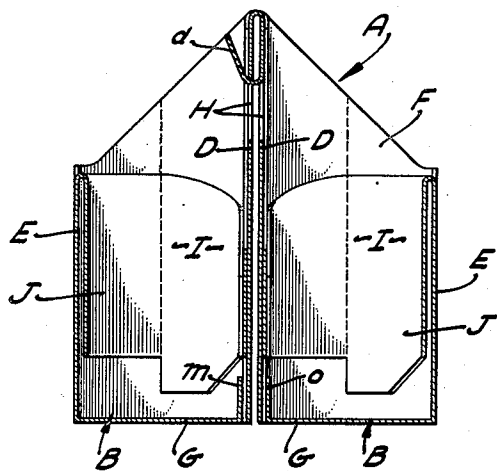


FIG. 7.

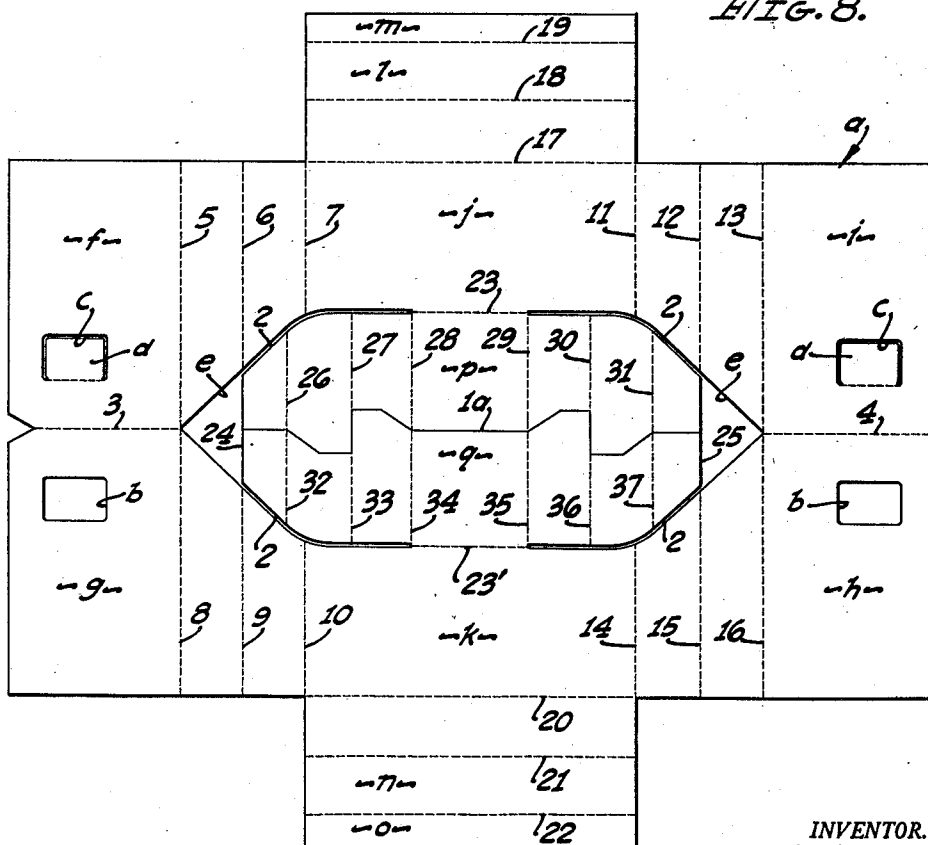


FIG. 8.

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UNITED STATES PATENT OFFICE

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DISPOSABLE BOTTLE CONTAINER

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Application April 30, 1949, Serial No. 90,675

9 Claims. (Cl. 229—28)

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My invention relates to a container for bottles and similar articles.

A general object of my invention is the provision of such a container that can be made from light weight paperboard or other similar, inexpensive material in which bottles and similar articles will be securely retained and effectively safeguarded, and yet which may be produced very economically and supplied to users at very low cost.

A more particular object of my invention is the provision of such a container of such low cost that it may be economically disposed of by the ultimate user after a single use.

Another object of my invention is the provision of a container of such character that relatively light weight paperboard or other similar inexpensive material can be employed, yet the container will have sufficient strength to hold bottles and similar articles for a considerable portion of time without risk of damage to said bottles or articles because of a novel construction wherein the container is reinforced along the points of maximum load.

A further object of my invention is the provision of a container of such character that it can be fully assembled by the producer, and yet maintained in a flat, collapsed condition, permitting ready handling and shipping.

A still further object of my invention is the provision of a container of such character that it can be fabricated in its entirety from a sheet of paper-board or like material, with but a negligible waste of such material resulting from unutilized portions of the sheet which must be cut out and discarded.

Other objects and features of the invention will be better and more fully understood from the following detailed description of the preferred example of the container which embodies the invention. Such description is given in connection with the accompanying drawings in which:

Figure 1 is a plan view of a fully assembled container, constructed in accordance with the invention;

Figure 2 is a side section view taken along line 2—2 of Figure 1.

Figure 3 is a plan view of the complete blank cut and scored in accordance with the invention from which the container is assembled;

Figure 4 is a plan view of a fully assembled and folded container, showing one mode of folding for purposes of handling and shipping;

Figure 5 is an edge view of the fully assembled container illustrated in Figure 4; and

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Figure 6 is a plan view of the fully assembled and folded container illustrated in Figure 4, showing an alternative mode of folding for purposes of handling and shipping.

Figure 7 is a side section view of the container assembled from the blank shown in Figure 8.

Figure 8 is a plan view of a complete blank cut and scored in accordance with the modified form of the invention.

Referring more particularly to the drawings, Figures 1 and 2 show that the container A is a box-like structure separated into two compartments B by the vertical inner side walls D of the container, each compartment consisting of one of said inner side walls D, an outer side wall E, end walls F and a bottom wall G. In each inner side wall D are disposed two finger holds H for carrying the container. Each of the compartments B is partitioned into three bottle cells I by means of the partition walls J.

Reference is now made to Figure 3 of the drawings, for an understanding of the blank *a*. The blank *a* consists of a piece of suitable sheet material, such as paperboard, having the necessary qualities of strength, stiffness and flexibility, which is folded upon itself and the various portions thereof are connected together, whereby the completed container A of Figures 1 and 2 is produced.

By reference to Figure 3, it will be observed that the blank is cut or stamped to the desired outline. The solid lines shown on Figure 3 represent those parts of the blank which are fully cut, whereas the broken lines represent those portions of the blank which are merely scored so as to facilitate folding the blank into the desired form. As seen in Figure 3, small rectangular openings *b* are cut from the blank *a*, and small rectangular openings *c* are formed by cutting along the three sides and scoring along the fourth side of the rectangle, thereby leaving flap *d*. Triangular openings *e* are cut from the blank, as shown. The blank is cut centrally thereof along solid line *f* running parallel to the longitudinal edges of the blank, said cut extending the full distance between cut-out triangular openings *e*. The blank is further cut along the four curved lines *2*, as shown.

Panels *f* and *g* are set off from each other by scored line *3*. Panels *h* and *i* are set off from each other by scored line *4*. These four panels are utilized to form vertical inner side walls D, best seen in Figure 2, as will hereafter become apparent.

Inwardly of panel *f* are disposed scored lines *5*,

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6, and 7; that portion of the blank lying between scored lines 5 and 7 forming an end wall F best seen in Figure 1, as will hereinafter become apparent. Inwardly of panel *g* are disposed scored lines 8, 9 and 10; that portion of the blank lying between scored lines 8 and 10 forming a second end wall F. Similarly, scored lines 11, 12 and 13 are disposed inwardly of panel *i* and scored lines 14, 15 and 16 are disposed inwardly of panel *h*, that portion lying between scored lines 11 and 13, and that portion lying between scored lines 14 and 16 each forming end walls F as will hereinafter become apparent.

Disposed between scored lines 7 and 11 is panel *j* and disposed between scored lines 10 and 14 is panel *k*. As will hereinafter become apparent, panels *j* and *k* are utilized to form side walls E best seen in Figures 1 and 2.

Set off from panel *j* by scored line 17 is panel *l* in which are disposed scored lines 18 and 19. That portion of panel *l* lying between scored lines 17 and 19 is utilized to form a bottom wall G best seen in Figure 2 as will hereinafter become apparent. That portion of panel *l* lying outside scored line 19 is utilized to form a flap *m* which is employed to secure a bottom wall G to a side wall D as seen in Figure 2. Similarly, set off from panel *k* by scored line 20 is panel *n* in which are disposed scored lines 21 and 22. That portion of panel *n* lying between scored lines 20 and 22 is utilized to form a bottom wall G, and that portion of panel *n* lying outside scored line 22 forms a flap *o* which is employed to secure the bottom wall G to a side wall D.

Set off from panel *j* along scored line 23 is fold section *p* extending from lines 24 to 25. Fold section *p* contains scored lines 26, 27, 28, 29, 30 and 31, as shown, which enable the formation of two partition walls J of the assembled container, as will hereinafter become apparent. Similarly, set off from panel *k* along scored line 23' is fold section *q*. Fold section *q* contains scored lines 32, 33, 34, 35, 36 and 37, as shown, which enable the formation of two partition walls J of the assembled container.

In order to assemble the container from the blank which has been cut and scored as hereinabove described, fold section *p* is folded upwardly and outwardly along scored line 23 to lie flat upon the blank. Next, fold section *p* is folded inwardly and downwardly along scored line 30 with the result that that portion of fold section *p* lying outside scored line 30 has been doubled back to lie flat upon the blank. That portion of fold section *p* lying outside scored line 27 is also doubled back to lie flat upon the blank by folding it upwardly and inwardly along scored line 27. In an identical manner, fold section *q* is folded upwardly and outwardly along scored line 23' to lie flat upon the blank, that portion of fold section *q* lying outside scored line 36 is doubled back to lie flat upon the blank by folding it upwardly and inwardly along scored line 36 and that portion of fold section *q* lying outside scored line 33 is folded back to lie flat upon the blank by folding it upwardly and inwardly along scored line 33.

Next, panels *f* and *g* together are folded upwardly and inwardly along scored lines 6 and 9 to lie flat upon the blank. At this time that end portion of fold section *p* lying beyond scored line 26 is glued to panel *f*, and that end portion of fold section *q* lying beyond scored line 32 is glued to panel *g*. This operation results in the formation of two of the partition walls J as shown in Figure 1. Panels *h* and *i* together, are then

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folded upwardly and inwardly along scored lines 12 and 15 to lie flat upon the blank. At this time that end portion of fold section *p* lying beyond scored line 31 is glued to panel *i*, and that end portion of fold section *q* lying beyond scored line 37 is glued to panel *h*. This operation results in the formation of the remaining two partition walls J shown in Figure 1. Panels *f* and *g*, and *h* and *i*, are so proportioned that when folded together, as above described, they will overlap each other as clearly shown in Figure 6. This overlapping relation between these panels is an important feature of my invention resulting in reinforcement by a four-fold thickness along the line of loading of the container, as will hereinafter become apparent. The overlapping portions of these panels are glued together.

Next, panel *n* is folded upwardly and inwardly along scored line 21. Flap *o* is then glued to the lower side of that portion of the inner side wall D formed by the overlapping portions of panels *g* and *h*, as above described. Similarly, panel *l* is folded upwardly and inwardly along scored line 18, and flap *m* is glued to the lower side of that portion of the inner side wall D formed by the overlapping portions of panels *f* and *i*.

The blank is next folded back upon itself along scored lines 3 and 4, now in alinement, resulting in the coincidence of rectangular openings *b* and *c* to form the two finger holes H, best seen in Figure 4.

With the completion of the above described operation, the container is completely assembled and is in the knocked down or collapsed form, illustrated in Figure 4.

While in this form, the container is conveniently handled and shipped, consuming no unnecessary storage or shipping space, and well protected against damage by tearing or crushing.

The fully assembled container, because of its saddle bag construction, can also be handled and shipped in the knocked down form illustrated in Figure 6. Thus, the shipper or handler may conveniently choose either of these alternative knocked down forms, depending upon the size of his shipping packages or storage space.

To render the container ready for use, the user must simply insert his fingers in finger holes H, and with the folded container in an upright position, strike the bottom thereof lightly against a flat, horizontal surface. The force of such blow will cause the bottom walls G to unfold along scored lines 18 and 24, respectively, thereby rendering the container ready for use. The ease and rapidity with which the container can be altered from its knocked down form to one ready for final use is an important feature of my invention.

In the embodiment of my invention above described, it will be observed that the container is designed to accommodate six bottles, three in each of two compartments B. An important feature of my invention is that the container is designed so as to give four ply thickness along the vertical line lying midway between the finger holes, along which line breakage is most apt to result because of the weight load. This is achieved by the overlapping relation existing between panels *f* and *i*, and panels *g* and *h*, as hereinabove described. This reinforcement at the center of the inner side walls makes possible the employment of much lighter weight paperboard than has heretofore been practicable in bottle containers of this general nature. This feature of the invention makes possible great savings in manufacturing costs and

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also a substantial reduction in shipping and storing weights and volumes, with the result that a satisfactory container can be supplied to the ultimate user at a minimum of cost.

It will be observed that each compartment B is separated into three partitions by means of partition walls J. The purpose of these partition walls is to prevent breakage likely to occur were adjacent bottles to strike each other while the loaded container is being carried. It will be noted that these partition walls extend almost the full height of the outer side walls E, thereby affording protection against undesired bottle contact. It is an important feature of my invention that the container is so designed that sufficiently high partition walls to give adequate protection against bottle contact are obtained without necessitating any increase in the size of the blank required, and without weakening in any way the side walls of the container.

The dimensions of the container will, of course, vary with those of the bottles or other articles for which it is intended. It is desirable that the height of the container be made not greater than that of the bottles or similar articles for which it is to be used. This will permit stacking of several filled containers, one above the other, for shipping or display purposes.

Referring to Figure 3, it is seen that the height of the partition walls J is determined by the height of fold sections *p* and *q*, and similarly, the height of the side walls E is determined by the height of panels *j* and *k*. The relative heights of the side walls E and partition walls J can therefore be varied but with the limitation that the height of the partition walls J cannot exceed the height of the side walls E. Further, as the height of the partition walls J is increased, the height of the side walls E will be correspondingly decreased.

As has been heretofore discussed, in order to minimize breakage caused by objects in the container striking against each other, it is desirable that the partition walls J extend vertically as far into the container as possible. For the same reason, it is desirable that the side walls E be as high as possible. As has been described however, in the above embodiment of my invention an increase in the height of either of these walls must result in a corresponding decrease in the height of the other. As can be seen in Figure 3, the combined heights of the partition walls J and the side walls E must always be equal to the height of the container, the partition walls J being always equal to the difference between the height of the container and the height of the side walls E.

In Figures 7 and 8 is shown a second embodiment of my invention in which the partition walls J are so designed that their effective height exceeds the difference between the height of the container and that of the side walls E. It is thereby possible, without increasing the size of the blank, to increase the height of either the partition walls J or the side walls E without a corresponding reduction in the height of the other.

The blank shown in Figure 8 is identical to that of Figure 3 except that the straight line *l* centrally cutting the inner portion of the blank has been replaced by the line *la*. As seen in Figure 8, cut line *la* alternately converges and diverges on both sides of the center line of the blank with the result that portions of fold sections *p* and *q* extend beyond the center line of the blank. In this manner those portions of fold sections *q* lying between scored lines 32 and 33 and between scored

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lines 36 and 37, and those portions of fold section *p* lying between scored lines 26 and 27 and between scored lines 31 and 32 are increased in height without increasing the size of the blank or decreasing the height of the panels *k* or *j*.

As seen in Figure 7, the result of the above described modification is to increase the height of a portion of each of the partition walls J without decreasing either the height of the inner side walls D or of the outer walls E. In this manner the objects carried in the container are more fully protected against breakage caused by their striking against each other.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement may be resorted to without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A container for packaging a plurality of objects, comprising a blank of sheet material cut and creased to form two compartments connected to each other along their inner and upper margins, each such compartment consisting of an inner side wall formed by two partially overlapping sections of said blank, two end walls connected to said inner wall, an outer wall connected to each of said end walls, and a bottom wall connected to said outer wall and having connected thereto a gluing tab which is secured to the inner side panel, a plurality of cells in each of said compartments, each of said cells being formed by a fold section conjoined with the upper margin of the outer wall and foldably, inwardly and downwardly between the said inner and outer side walls, a partition wall conjoined with said fold section and a gluing tab conjoined with said partition wall, said partition gluing tab being secured to the said inner side walls, a portion of said partition wall being of greater vertical height than the difference in vertical heights between the said inner wall and the said outer wall, said partition walls, bottom walls and end walls having median scores for placing and gluing tabs in position for simultaneous cementation to said inner side walls, the overlapping sections of said inner walls constituting cooperating gluing tabs.

2. A container for packaging a plurality of bottles or the like, comprising a blank of sheet material cut and folded to form two compartments conjoined along their inner and upper margins, each such compartment consisting of an inner side wall formed by two partially overlapping sections of said blank, two end walls conjoined with said inner wall, each of said end walls being scored centrally and vertically to render it readily foldable outwardly of said compartment, an outer wall conjoined with said end walls, a bottom wall conjoined to said outer wall, said bottom wall being scored centrally along its length rendering it foldable outwardly of said compartment, a gluing flap conjoined with said bottom wall and attached to said inner side wall, a fold section conjoined with the upper margin of the outer wall and foldable inwardly and downwardly between the inner and outer side walls, partition walls conjoined with said fold section, said partition walls being scored centrally and vertically rendering them readily foldable outwardly of the center of said compartment and terminating in gluing flaps for attachment to said inner side wall, all said walls, sections and scorings be-

ing so proportioned that said container is readily collapsible to a flattened condition when fully assembled, the gluing flaps of said bottom walls and partition walls being disposed, when folded, for simultaneous attachment to said inner side walls.

3. A container comprising a blank of sheet material cut and folded to form two compartments conjoined along their inner and upper margins, each of said compartments consisting of an inner side wall formed by two partially overlapping sections of said blank, two end walls conjoined with said inner side wall, each of said end walls being scored centrally and vertically to render it readily foldable outwardly of said compartment, an outer wall conjoined with said end walls, a bottom wall conjoined with said outer wall, said bottom wall being scored centrally along its length rendering it foldable outwardly of said compartment, a gluing flap conjoined with said bottom wall and attached to said inner side wall, a fold section conjoined with the upper margin of the outer side wall and foldable inwardly and downwardly between the inner and outer side walls, partition walls conjoined with said fold section, each of said partition walls being scored centrally and vertically to render them readily foldable outwardly of the center of said compartment, each of said partition walls having a portion thereof of greater vertical height than the difference in vertical heights between the said inner wall and the said outer wall and terminating in gluing flaps for attachment to said inner side wall, all of said walls, sections and scoring being so proportioned that said container is readily collapsible to a flattened condition when fully assembled, the gluing flaps of said bottom walls and partition walls being disposed, when folded, for simultaneous attachment to said inner side walls.

4. A blank for constructing a container comprising a rectangular sheet at the corners of which are cut away rectangular sections, two inner side wall sections at each end of said blank set off from the interior of the said blank by transverse scored lines and from each other by a scored line running medially along the length of the blank, said sections being so dimensioned that the outer side of each such section will lie in partially overlapping relation to the outer side of the corresponding section at the other extremity of the blank when the sections are folded inwardly to form the inner side walls of said container, end wall sections disposed inwardly of said inner side wall sections, two outer side wall sections each disposed inwardly of said end wall sections, two fold sections disposed between said outer side wall sections and utilized to form individual bottle partitions in said container, two bottom walls each disposed outside an outer side wall and two gluing flaps each disposed outwardly of said bottom wall, each of the said end walls being scored medially along its length, each said fold section being scored transversely into a plurality of panels, and each said bottom wall being scored medially along its length, all of said sections, walls and scorings being so proportioned and dimensioned that the container constructed from said blank is readily collapsible to a flattened condition when fully assembled.

5. A rectangular blank for a container in which rectangular sections have been cut away from each of the corners of said blank, two inner side wall sections at each end of said blank set off from the interior of the said blank by transverse

scored lines and from each other by a scored line running medially along the length of the blank, said sections being so dimensioned that the outer side of each section will lie in partially overlapping relation to the outer side of the corresponding section at the other extremity of the blank when the sections are folded inwardly to form the inner side walls of said container, end wall sections disposed inwardly of said inner side wall sections, outer side wall sections each disposed inwardly of said end wall sections, two fold sections in the central portion of the said blank disposed between the said outer side wall sections and utilized to form individual bottle partitions in said container, the said two fold sections being cut along a mutual line, said line running longitudinally along the center portion of said blank and converging and diverging from the center line of said blank portions of each of said two fold sections thereby extending beyond the center line of the said blank, two bottom walls each disposed outside an outer side wall and two gluing flaps each disposed outwardly of said bottom wall, each of the said end walls being scored medially along its length, each of said fold sections being scored transversely into a plurality of panels, and each of said bottom walls being scored medially along its length, all of said sections, walls, panels and scorings being so proportioned and dimensioned that the container constructed from said blank is readily collapsible to a flattened condition when fully assembled.

6. A container comprising a blank of sheet material cut and folded to form two compartments conjoined along their inner and upper margins, each of said compartments consisting of an inner side wall formed by two partially overlapping sections of said blank, finger holes disposed in said inner wall, said finger holes being formed by cut out portions in each of said overlapping sections, the finger holes in the inner wall of one said compartment being in alignment with the finger holes in the inner wall of the other said compartment, two end walls conjoined with said inner side wall, each of said end walls being scored centrally and vertically to render it readily foldable outwardly of said compartment, an outer wall conjoined with said end walls, a bottom wall conjoined with said outer wall, said bottom wall being scored centrally along its length rendering it foldable outwardly of said compartment, a gluing flap conjoined with said bottom wall and attached to said inner side wall, a fold section conjoined with the upper margin of the outer side wall and foldable inwardly and downwardly between the inner and outer side walls, partition walls conjoined with said fold section, each of said partition walls being scored centrally and vertically to render them readily foldable outwardly of the center of said compartment, each of said partition walls having a portion thereof of greater vertical height than the difference in vertical heights between the said inner wall and the said outer wall, and terminating in gluing flaps for attachment to said inner side wall all of said walls, sections and scoring being so proportioned that said container is readily collapsible to a flattened condition when fully assembled, the gluing flaps of said bottom walls and partition walls being disposed, when folded, for simultaneous attachment to said inner side walls.

7. A rectangular blank for a container in which rectangular sections have been cut away from each of the corners of said blank, two inner side

wall sections at each end of said blank set off from the interior of the said blank by transverse scored lines and from each other by a scored line running medially along the length of the blank, said sections being so dimensioned that the outer side of each section will lie in partially overlapping relation to the outer side of the corresponding section at the other extremity of the blank when the sections are folded inwardly to form the inner side walls of said container, finger holes cut out in each of said sections and so disposed that when the said container is fully assembled, each finger hole in each of said inner side walls will be aligned with a corresponding finger hole in the other of said inner side walls, end wall sections disposed inwardly of said inner side wall sections, outer side wall sections each disposed inwardly of said end wall sections, two fold sections in the central portion of the said blank disposed between the said outer side wall sections and utilized to form individual bottle partitions in said container, the said two fold sections being cut along a mutual line, said line running longitudinally along the center portion of said blank and converging and diverging from the center line of said blank portions of each of said two fold sections thereby extending beyond the center line of the said blank, two bottom walls each disposed outside an outer side wall and two gluing flaps each disposed outwardly of said bottom wall, each of the said end walls being scored medially along its length, each of said fold sections being scored transversely into a plurality of panels, and each of said bottom walls being scored medially along its length, all of said sections, walls, panels and scorings being so proportioned and dimensioned that the container constructed from said blank is readily collapsible to a flattened condition when fully assembled.

8. A bottle holder, comprising: a blank having a central body and two pairs of diametrically opposed panels; the first opposed pair of panels being scored to form end walls and complementary inner walls of a pair of collateral compartments; the second pair of panels being scored to form individual bottom walls of said compartments, the extremities of said body adjacent said bottom wall panels forming outer walls of said

compartments; the central portion of said body being cut and scored to form partition wall panels capable of bridging between the inner and outer wall panels of said collateral compartments; glue tabs along the extremities of said partition wall, said bottom wall and said inner wall panels; said end wall, bottom wall and partition wall panels being scored along their respective medians; said partition walls and bottom wall panels being foldable along said median scores to place their glue tabs uppermost; said end wall panels being foldable thereover with their own glue tabs in overlapping relation for simultaneous cementation of all of said glue tabs.

9. A dual container, comprising: a blank of sheet material having a central body portion and two pairs of diametrically opposed pairs of panels and scored and cut along a central axis through one opposed pair of said panels to form dual container blanks; said one pair of panels being scored to form the end walls and complementary back walls of said dual containers; the other opposed pair of panels being scored to form the bottom walls of said dual containers; the extremities of said body portion forming the front walls of said dual containers; the central section of said body portion being cut and scored to form partition walls; said partition walls and bottom walls having glue tabs and being foldable to place said glue tabs in juxtaposition; said back walls also having glue adapted to be placed in overlapping relation on folding of said back walls, said back walls on being folded adapted to overlie said front walls and the partition wall and bottom wall glue tabs for simultaneous cementation of all of said glue tabs.

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