June 19, 1962 R. L. LANG 3,039,651

COLLAPSIBLE MOLDED PLASTIC CARTON

Filed Nov. 9, 1959 3 Sheets-Sheet 1

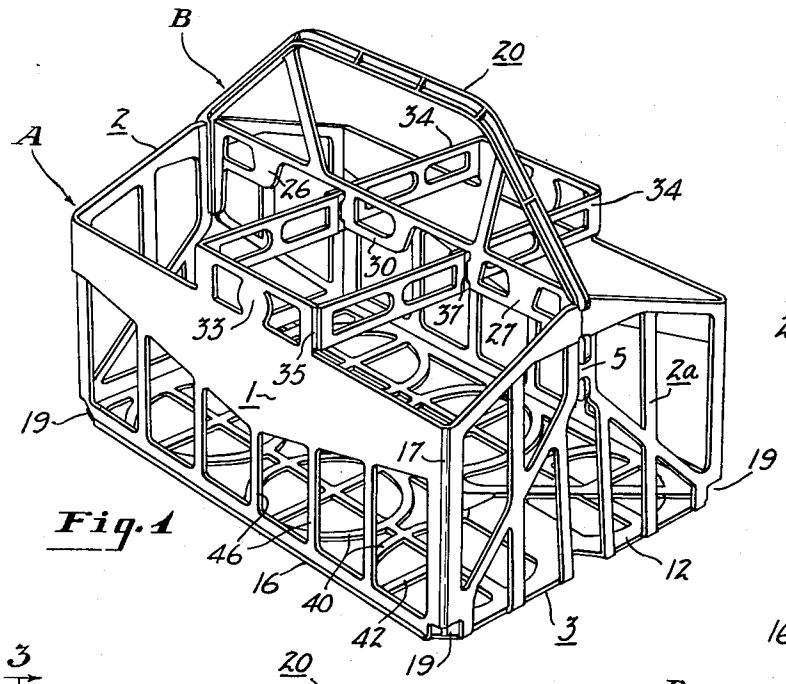


Fig. 1

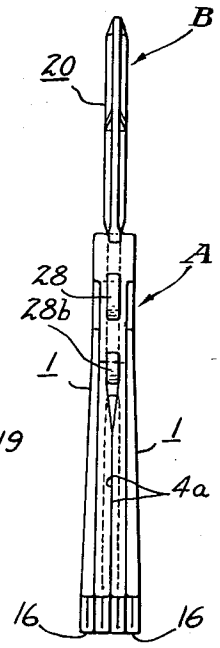


Fig. 3

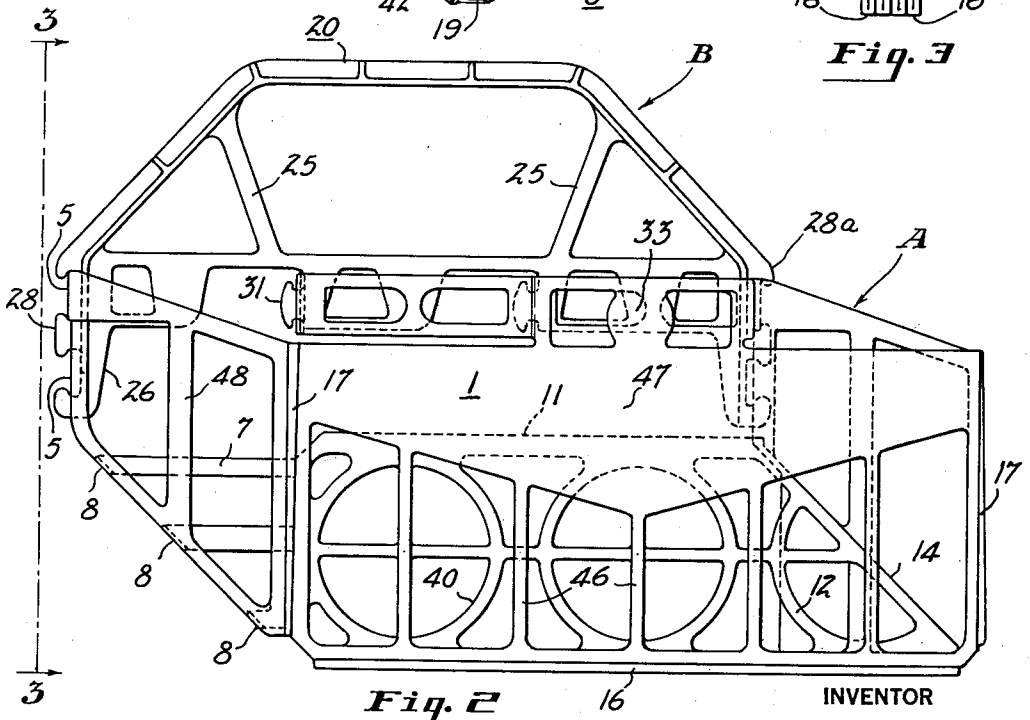


Fig. 2

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COLLAPSIBLE MOLDED PLASTIC CARTON

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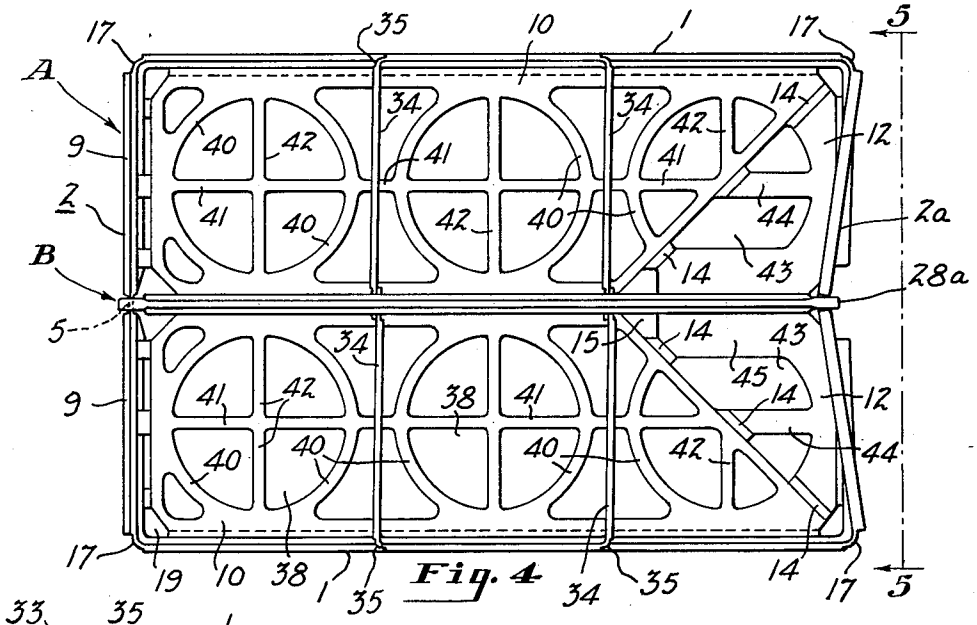


Fig. 4

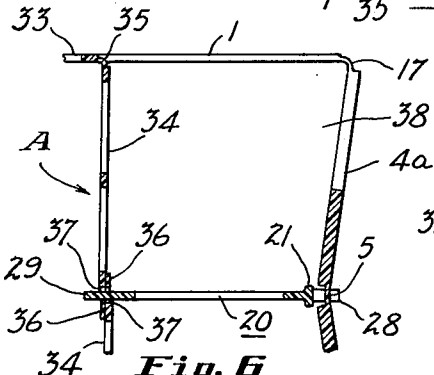


Fig. 6

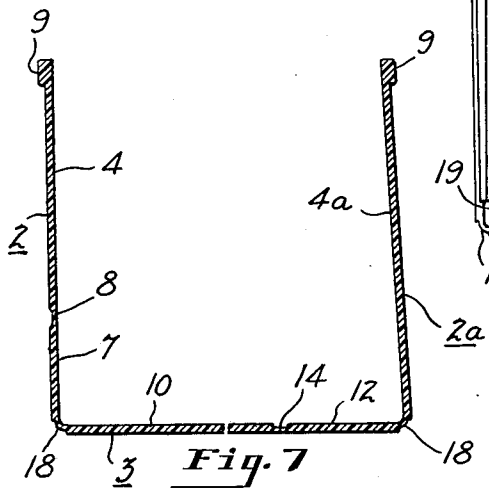


Fig. 7

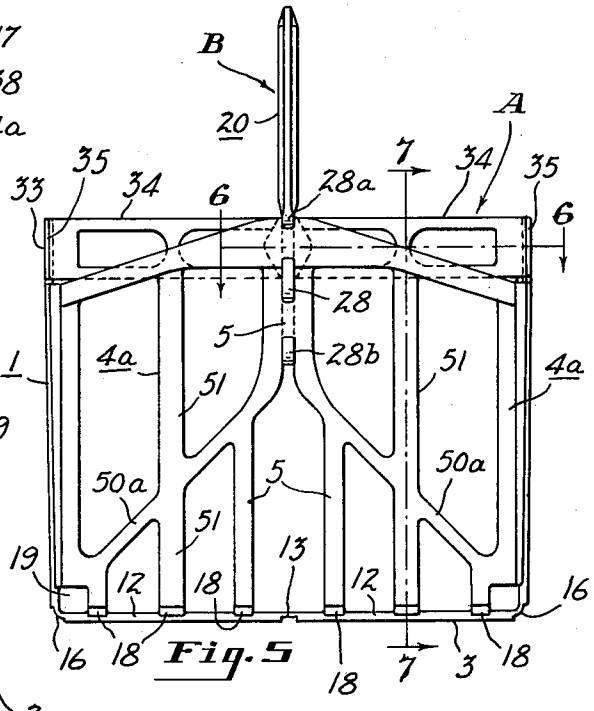


Fig. 5

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COLLAPSIBLE MOLDED PLASTIC CARTON

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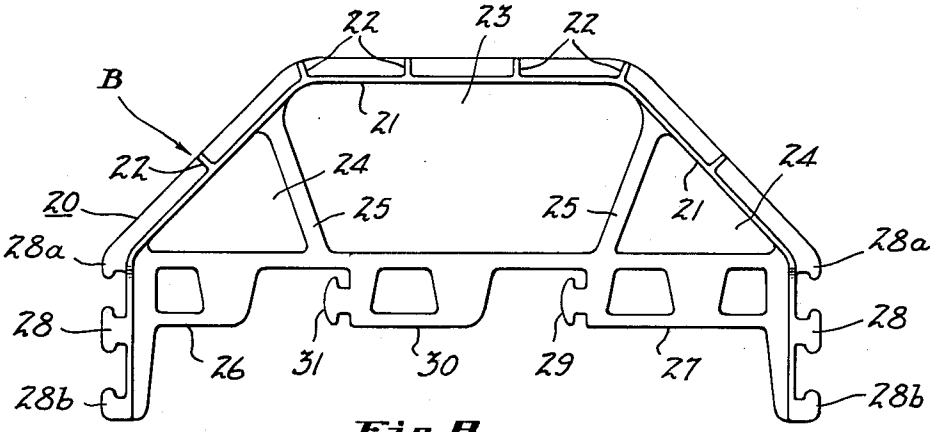


Fig. 8

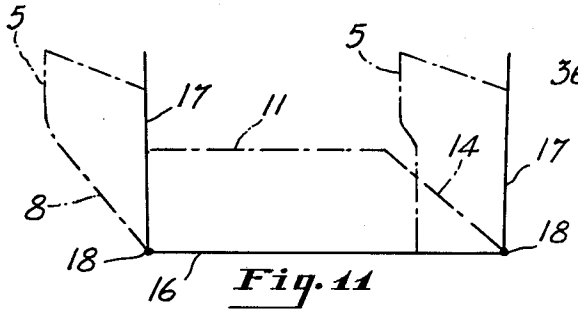


Fig. 11

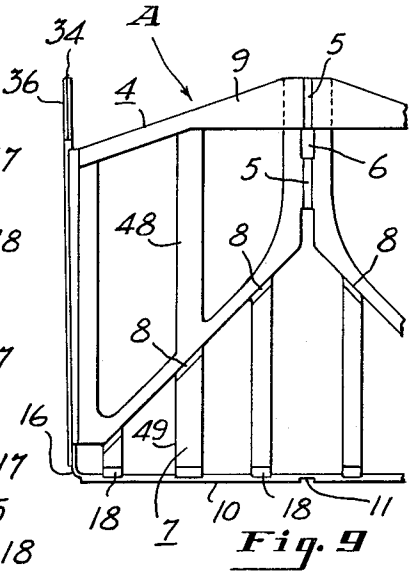


Fig. 9

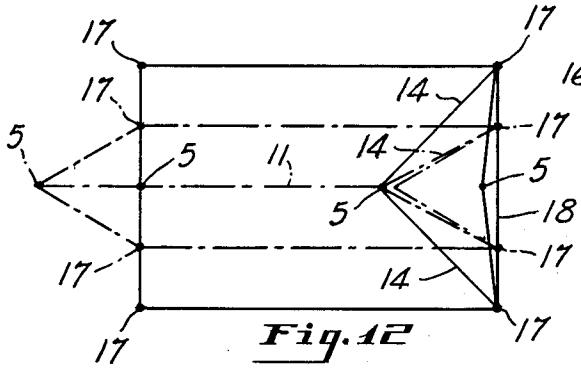


Fig. 12

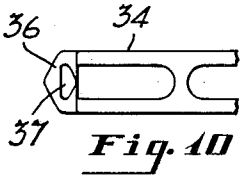


Fig. 10

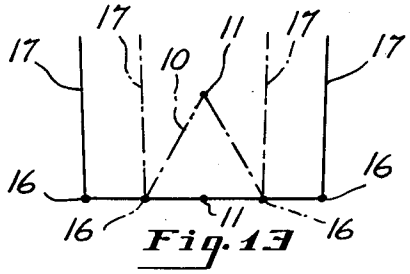


Fig. 13

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United States Patent Office

3,039,651

Patented June 19, 1962

3,039,651

COLLAPSIBLE MOLDED PLASTIC CARTON

Robert L. Lang, Lawrence, Mass., assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Nov. 9, 1959, Ser. No. 851,585
15 Claims. (Cl. 220—110)

The present invention relates to collapsible cartons and more particularly to a strong molded plastic carton which may readily be collapsed for shipment or storage or for reuse.

Heretofore, collapsible cartons have usually been made of paper, cardboard or similar material. Such cartons were used because of their low cost and were usually discarded by the purchaser after being used once. The inexpensive cartons having the desired strength could, in many cases, be partially disassembled, collapsed and reused, but the ordinary purchaser found this to be too inconvenient due to the time required to fold the carton, the care required to avoid tearing, and the difficulty in handling the collapsed carton. Furthermore, the carton could not be washed if it were soiled by soft drinks, beer or other material.

The present invention provides a carton which collapses readily without the necessity for disconnecting joined portions or partial disassembly and which has great strength and durability in spite of the collapsible construction. A unique construction is employed wherein a portion of the bottom wall at one end of the container and a portion of the end wall at the other end of the container are constructed to flex or fold to permit upward movement of the bottom edge portions of said end wall and longitudinal movement of end portions of the bottom wall whereby the bottom wall and one end wall fold inwardly between the side walls to superpose the walls one upon another in a flat compact bundle when the carton is collapsed. In cartons designed for carrying bottles or cans bottle-separating bars divide the carton into compartments, and durable hinged connections for the bars are provided and arranged to permit an easy collapsing movement when the container is empty.

The invention also provides a carton which is very inexpensive in spite of its high quality. The carton has tabs and hinges which avoid the necessity for complicated interlocking connections or for adhesives and can be molded at a low cost in two pieces only of a strong durable plastic material. The necessary hinged connections may be formed by shaping the mold to reduce the thickness of the plastic along the desired fold lines. The article of this invention has great value commercially because of the inexpensive nature of the molding and assembling operations required to produce the article, and the small amount of plastic required to produce a high strength in such an article as well as the many desirable features of the article.

An object of the present invention is to provide a durable inexpensive compartmented plastic carton.

A further object of the invention is to provide a carton which is practical and convenient for use over and over again.

A still further object of the invention is to provide a strong carton which can be quickly and easily collapsed to dispose its walls in superposed contacting relation with the bottom wall portions disposed between the side walls for convenient storage when not in use.

Another object of the invention is to provide an attractive reticulate container which is strong and durable.

Other objects, uses and advantages of the present invention will be apparent from the following description and claims and from the drawings in which:

FIGURE 1 is a perspective view on a reduced scale showing a bottle-carrying carton constructed according to the present invention;

FIGURE 2 is an elevational view on a reduced scale showing the carton of FIG. 1 in a collapsed form;

FIGURE 3 is an end view taken substantially on the line 3—3 of FIG. 2 and on the same scale;

FIGURE 4 is a top view of the carton of FIG. 1;

FIGURE 5 is an end view of the carton taken substantially on the line 5—5 of FIG. 4 and on the same scale;

FIGURE 6 is a fragmentary horizontal sectional view taken substantially on the line 6—6 of FIG. 5 and on the same scale with parts omitted;

FIGURE 7 is a foreshortened longitudinal, vertical sectional view substantially on the line 7—7 of FIG. 5 and on the same scale with parts omitted;

FIGURE 8 is an elevational view on the same scale as FIGS. 4 and 5 showing the handle assembly for the carton of FIGS. 1 to 7;

FIGURE 9 is a fragmentary end elevational view of the body portion of the container;

FIGURE 10 is a fragmentary elevational view showing one of the bottle-separating bars of the carton;

FIGURE 11 is a diagrammatic side elevational view, with parts omitted, on a reduced scale, illustrating folding of the end and bottom walls of the carton, these walls being shown in solid lines in their positions when the carton is assembled for carrying bottles and in dot-dash lines in their positions when the carton is collapsed;

FIGURE 12 is a schematic view of the bottom and end walls of the container on the same scale as FIGS. 11 and 13, these walls being shown in solids lines in their positions when the carton is open and in dot-dash lines in their positions when the carton is partially collapsed; and

FIGURE 13 is a diagrammatic end elevational view illustrating folding of the side and bottom walls of the container (on the same scale as FIG. 11 with parts omitted), these walls being shown in solid lines in their positions when the carton is open and in dot-dash lines in their positions when the carton is partially collapsed.

Referring more particularly to the drawings in which like parts are identified by the same numerals throughout the several views, FIGURE 1 shows a container constructed according to the present invention having a collapsible one-piece reticulate body portion A comprising parallel side walls **1**, end walls **2** and **2***a*, and a bottom wall **3** and a separate reticulate handle assembly B connected to the body portion A. The end wall **2** comprises two separate panels **4** which are pivotally joined along a vertical fold line by hinged connecting portions **5**, said connecting portions being spaced apart to provide a tab-receiving opening **6** immediately below the thickened upper edge portions **9** of the panels **4**. As shown herein, the end wall **2** also includes triangular connecting end portions **7** which are pivotally joined along diagonal fold lines by diagonal hinged connections **8**, the end portions **7** being spaced apart from each other as indicated in FIG. 9.

The opposite end wall **2***a* comprises two separate panels **4***a* pivotally joined along vertical fold lines by hinged connecting portions **5** which are spaced apart as in the end wall **2** to provide a tab-receiving opening **6** directly below the thickened edge portions **4**. The panels **4***a* are preferably formed to have the same appearance as the panels **4** and **7** of the end wall **2** as shown in FIG. 5.

The bottom wall **3** comprises two trapezoidal panels **10** which are pivotally joined along a straight medial fold line by a longitudinal hinged connection **11** extending the major portion of the length of the carton. The bottom wall also includes two triangular bottom connecting portions **12** which are pivotally joined along a fold line by a central hinged connecting portion **13** aligned with the hinged connection **11**. The bottom portions **12** are pivot-

ally joined to the panels 10 along diagonal fold lines by diagonol hinged connections 14, the panels 10 and 12 forming a rectangular bottom with a triangular opening 15 therein between the hinged connections 11 and 13. The hinged connections 11 and 13 are located halfway between the two bottom-side hinged connections 16 and parallel to the latter connections. The connections 16 extend substantially the full length of the carton and form straight fold lines while pivotally joining the panels 10 of the bottom wall 3 to the side walls 1.

The side walls are pivotally joined to the panels 4 and 4*a* of the end walls along vertical fold lines by four vertical hinged end connections 17 extending substantially from the bottom corner to the top corner of each side wall. The panels 10 of the bottom wall are pivotally connected to the two triangular end panels 7 and the two end panels 4*a* along fold lines which are generally perpendicular to the fold lines at 16 and 17 (when the carton is in its open assembled position) by bottom end hinged connections 18. Openings 19 are preferably provided at the four bottom corners of the carton at the ends of the hinged connections 8, 16, 17 and 18.

The reticulate handle assembly B comprises a generally trapezoidal handle 20 which is reinforced by laterally projecting flanges 21 and regularly spaced triangular ribs 22. A generally trapezoidal hand-receiving opening 23 and two triangular openings 24 are provided in the handle by two inclined bracing members 25 as best shown in FIG. 8. The handle assembly B has downwardly projecting generally L-shaped end portions 26 and 27, as shown in FIG. 8 which is drawn to scale. These end portions are provided with horizontally projecting end wall tabs 28, 28*a* and 28*b* which fit around the connecting portions 5 of the end walls to locate the handle on the end walls. The end portion 27 is provided with a rigid spacer tab or locking tab 29 similar to the locking tabs 28. The handle assembly B has a downwardly projecting central portion 30 which is provided with a rigid spacer tab or locking tab 31 similar to the tab 29 and spaced from the ends of the handle assembly about the same distance as the tab 29 is spaced from the other end of the assembly.

The side walls 1 have upwardly projecting generally rectangular top central portions 33 which support for bottle-separating bars 34. The bars 34 are pivotally joined to the side walls along vertical fold lines by vertical hinged connections 35 which are laterally aligned with the reduced portions of the tabs 29 and 31. Each bar 34 has a thin flexible end-locking tab 36 with a tab-receiving opening 37 therein. The openings 37 are of a size to fit over the tabs 29 and 31 to provide a pivotal connection between the bars and the handle assembly B while dividing the carton into six generally square bottle-receiving compartments 38. The bars are preferably regularly spaced along the length of the carton so that each of the compartments 38 has approximately the same horizontal cross-sectional area whereby the carton can carry bottles or cans of the same size.

The carton of the present invention is preferably made of a plastic, such as plasticized polyvinyl chloride, polyethylene, or the like, and the body portion A is preferably molded in one piece. Likewise the handle assembly B is preferably molded as a one-peice plastic article. The hinged portions 5, 8, 11, 13, 14, 16, 17, 18 and 35 are reduced in thickness to permit flexing of the plastic. It will be understood that these hinged portions may be formed separately if desired and bonded to the other portions of the container, in which case the container might be made of cardboard, paper or other non-plastic material.

In order to reduce the cost of the plastic container, it is preferable to provide openings in the bottom, end and side walls to reduce the weight of the plastic material. Since many plastics have substantial strength, it is possible to reduce the volume of plastic very much particularly in a reticulate container. As herein shown the bottom wall is formed with a large number of openings and with arcuate members 40 whose centers of curvature are located at the centers of the bottle-receiving compartments 38 as best shown in FIG. 4. Two parallel longitudinal members 41 extend through these centers at the bottom of the two rows of compartments, and lateral members 42 extend through these centers perpendicular to the members 41. Openings 43 are provided in the triangular portions 7 of the bottom wall between relatively thick longitudinally extending members 45 and smaller longitudinally extending members 44, the members 44 being aligned with the longitudinal members 41 to improve the appearance of the container. It will be understood that the ornamental designs may vary considerably.

The side walls 1 are shaped to provide a series of regularly spaced vertical riser members 46 which project downwardly from the trapezoidal portions 47.

The end walls 2 and 2*a* may be provided with somewhat similar risers. As herein shown the panels 4 are provided with narrow vertical risers 48 and diagonal bars 50, and the triangular portions 7 are provided with risers 49. The end wall 2*a* is preferably constructed so as to have generally the same appearance as the end wall 2. As herein shown the panels 4*a* have simulated hinge bars 50*a* similar to the diagonal bars 50 and have narrow vertical risers 51 similar to the risers 48 and 49.

FIGURE 1 to 8 have been drawn substantially to scale so that the structure of the reticulate container will be apparent upon inspection, but it will be understood that the size of the container may vary substantially and that the ornamental designs may also vary. The holes in the container may be omitted, but such holes would be employed in any plastic container because of the great savings that can be effected.

The one-piece plastic body portion A of the container of the present invention preferably has a thickness not in excess of .1 inch and the average thickness may be much less than this. It may be reinforced with ribs having slightly greater thickness but this is not usually necessary. The thickness of the walls is preferably substantially uniform and the hinges are formed by reducing the thickness of the plastic usually at least 50%. An excellent hinge may be provided, for example, by reducing the thickness of the plastic to about .02 to .03 inch. The preferred wall thickness is about .04 to .08 inch. The compartmented container shown herein is usually constructed with a length of about 7 to 8 inches, a width of 5 or 6 inches; a wall height of 3 to 4 inches and a substantially uniform thickness of about .06 inch, the flexible foldable portions being reduced in thickness to about .025 inch. The container is drawn substantially to scale except for the thickness of certain portions so that the normal size will be apparent to the eye, but it will be understood that the size of the container may vary considerably depending on the size of the bottles or cans which are to be carried. It is preferable to provide the walls of the container with a slight taper, such as 1° or so, to facilitate molding. The handle assembly B may have somewhat greater thickness in order to obtain the desired strength.

The novel construction of the container of the present invention provides maximum strength with a minimum amount of material. The bottom wall is supported not only by the side walls but also by both end walls. The separating bars provide maximum support for the handle assembly and at the same time reinforce the container by resisting outward movement of the side wall. Because of this arrangement it is possible to reduce the amount of the plastic required, thereby reducing the cost, while retaining the necessary strength and durability.

The container of the present invention is very valuable, not only because of the fact that it is durable and may easily be made in a plastic molding machine but also because it may readily be folded to a small compact shape as shown in FIGS. 1 and 2 without disassembling

any parts. Note that the bottom wall folds inside the container. It would, therefore, be practical for a housewife to carry the collapsed carton of the present invention in her handbag when she went to the store to pick up small bottles or cans. Because of its durability the container can be used over and over again. There is no danger of tearing the locking tabs since it is unnecessary to release these tabs before collapsing the container.

The collapsing movement of the bottom, end and side walls of the container is illustrated diagrammatically in FIGS. 11, 12 and 13. FIG. 11 illustrates the change in the positions of the bottom and end walls when the carton is moved from the open position shown in solid lines in that figure to the partially collapsed position shown in dot-dash lines.

FIGURE 13 illustrates the movement of the side and bottom walls as the side walls move from the position shown in solid lines in FIG. 13 to the position shown in dot-dash lines in that figure. The bottom panels **10** swing from a substantially horizontal position as shown in solid lines to inclined positions as shown in dot-dash lines in that figure.

The movement of the side and end walls is illustrated in FIG. 12 when the side walls are moved from the position shown in solid lines to the position shown in dot-dash lines. The panels **4** move outwardly from positions perpendicular to the side walls as shown in solid lines in FIG. 12 to inclined positions as shown in dot-dash lines and the panels **4***a* swing inwardly from the positions shown in solid lines to the positions shown in dot-dash lines. It will be noted that the hinged connections **5** of the end walls **2** and **2***a* move in the same direction as the container is collapsed. This is possible because of the provision of triangular portions **7** and **12** in the end wall **2** and the bottom wall **3** and would not be possible if the end walls **2** and **2***a* were both constructed in the same manner.

The inclined fold lines at **8** and **14** should be inclined at an angle of 45 degrees relative to the horizontal or vertical edges of the bottom or end wall in which they are located and should be aligned with the intersection of the horizontal and vertical fold lines of the side walls, but satisfactory functioning can be obtained with a slight variation in this angle even if the hinged connections **8** and **14** are narrow. Accuracy is not required if wide flexible hinges are employed. It will be apparent, for example, that the bottom and end walls need not be exactly flat when the carton is in its open bottle- or can-carrying position. In fact a slight deviation from the flat shape (see wall **2***a* in FIG. 4, for example) may be preferred to faciltate collapsing of the container.

As shown in FIGS. 4, 6 and 12, the end wall **2***a* is not exactly parallel to the end wall **2**. As shown, the hinges **18** located along the horizontal fold line at the bottom of the end wall **2***a* are located in a plane substantially perpendicular to the side walls **1** and substantially parallel to the end wall **2** when the container is in its open position but the panels **4***a* are not exactly vertical but are sloped slightly so that their upper edges are inwardly of said plane as best shown in FIGS. 4 and 6. The side and end walls are also inclined somewhat. This construction has the advantage that the end wall **2***a* will readily collapse inwardly when the side walls **1** are squeezed together. This does not weaken the container since the bottles or cans in the compartments adjacent the end wall **2***a* will prevent such collapse. It will be understood, however, that the end walls **2** and **2***a* may be exactly parallel and perpendicular to the side walls and to the bottom wall if desired, in which case more care will be required when collapsing the container. It will thus be apparent that slight variations in the shape of the container can be made without losing the advantages of the invention.

The two-piece plastic carton of the present invention is easy to assemble. The handle assembly B is merely

placed within the body portion A while the body portion is in an open position, and the thin hinged connection portions **5** of the two end walls are fitted into the recesses formed by the tabs **28**, **28***a* and **28***b* at the opposite ends of the handle assembly. This locks the handle assembly to the body portion A, the projecting portions of the tabs extending upwardly and downwardly beyond the portions **5** to prevent them from becoming detached accidentally. The next step is to connect the bottle separating bars **34** to the handle assembly. The thin tabs **36** may readily be placed on the rigid locking tabs **29** and **31** at the bottom of the handle assembly, the openings **37** being shaped to facilitate this assembly but being sufficiently small so that the upwardly and downwardly projecting portions of the tabs **29** and **31** will prevent separation of the tabs **26** from the handle assembly. The flexibility of the tabs **36** facilitates mounting of these tabs on the rigid tabs of the handle assembly and permits mounting of two tabs **36** on each of the rigid tabs **29** and **31** as shown in FIG. 6.

The body portion A consists essentially of rectangular side walls hingedly connected to rectangular end and bottom walls, which are in turn hinged at their medial plane. The bottom wall and one end wall are further provided with diagonal 45° hinges which subdivide the rectangular wall into trapezoidal portions and smaller complementary triangular portions. The triangular portions of the one end wall are connected to the main trapezoidal portions of the bottom wall at one end of the container, and the small triangular portions of the bottom wall are connected to the rectangular portions of the other end wall at the opposite end of the container. This construction permits collapsing of the container, without disassembling the container, in such a manner that the container occupies a minimum amount of space. This is quite different from any construction employed heretofore and provides many advantages which could never be obtained by previously known bottle-carrying cartons.

In describing the basic structure of the body portion A, the terms rectangular, trapezoidal and triangular are employed to describe the general outlines of the parts, it being understood that such terms do not exclude various perforations, cut-out designs or other recticulate arrangements which may be employed to reduce the amount of material in the walls of the container or to improve the appearance thereof.

Another important feature of the invention is the provision of bottle-receiving compartments in a collapsible container without the necessity for unlocking or disassembling portions of the container before collapsing the same. The provision of hinged connections between the bottle-separating bars **34** and the handle assembly B is an important part of the solution to this problem. The flexible tabs **36** not only provide very efficient hinged connections but also facilitate mounting on the rigid tabs **29** and **31**.

The separating bars **34** are pivotally connected between the side walls and the handle assembly in such a way that they do not interfere with collapsing of the container. It will be apparent that construction of the handle and the separating bars may be varied substantially to provide the necessary support for the container, to provide the desired compartments and to provide the necessary collapsing movement while giving the container the strength desired. The construction shown herein, however, is advantageous because of its low cost and its simplicity.

It will be understood that the above description is by way of illustration rather than limitation and that, in accordance with the provisions of the patent statutes, variations and modifications of the specific devices described herein may be made without departing from the spirit of the invention.

Having described my invention, I claim:

1. In combination, a one-piece reticulate molded plastic

container comprising a generally rectangular bottom wall having a pair of bottom panels connected along a central horizontal fold line, a pair of side walls extending the full length of said bottom wall, and a pair of end walls each having a pair of end panels connected along vertical fold lines midway between said side walls, the walls of said container being reduced in thickness at the margins of said panels to provide four vertical hinges at the corners of said container connecting said end panels to said side walls, two horizontal hinges at the opposite sides of the container connecting said bottom panels to the bottom edges of said side walls, vertical central hinges between the panels of the end walls, and a horizontal central hinge between said bottom panels, said side walls having upwardly projecting central portions and integral horizontal separating bars on opposite sides of said last-named central portions, the container being reduced in thickness at opposite ends of each of said central portions to provide vertical hinges for said separating bars, the separating bars extending laterally across the container to divide the same into a series of rectangular compartments; and a handle member carried by said end walls for lifting the container.

2. A combination as defined in claim 1 wherein said handle member is pivotally connected to said end walls at the central hinges thereof and is pivotally connected to said separating bars by a plurality of locking tabs, said bars having flexible portions of reduced thickness with openings therein for receiving said locking tabs.

3. A combination as defined in claim 1 wherein the upper parts of said end walls are provided with tab-receiving openings at the vertical hinged connections between the end panels midway between the side walls and said handle is provided at its opposite ends with locking tabs that fit in said last-named openings.

4. A combination as defined in claim 1 wherein the lower part of one end wall is hinged to the bottom wall and is reduced in thickness to provide means whereby the bottom edge of said end wall moves upwardly in unison with the bottom wall panels when the carton is collapsed, said last-named means being flexible and inextensible and preventing the bottom panels from swinging outwardly away from the end wall when the carton is collapsed.

5. A combination as defined in claim 4 wherein the part of the bottom wall nearer the other end wall of the container is reduced in thickness to provide means whereby the end edge of the bottom wall moves inwardly in unison with the panels of said other end wall when the carton is collapsed, said last-named means being flexible and substantially inextensible and preventing the panels of said other end wall from swinging outwardly away from the bottom wall when the carton is collapsed.

6. A collapsible carton comprising foldably connected generally rectangular side, bottom and end walls and an upright handle member midway between the side walls and parallel thereto, said rectangular bottom wall comprising a pair of generally trapezoidal bottom panels extending substantially the full length of the container and pivotally connected to each other along a central fold line midway between said side walls and a pair of adjacent complementary generally triangular bottom panels pivotally connected to each other along a central horizontal fold line midway between said side walls and pivotally connected to said trapezoidal panels along two inclined fold lines substantially aligned with two bottom corners of the container which fold lines are substantially perpendicular to each other when the four panels of the rectangular bottom wall are in a single horizontal plane, the first rectangular end wall comprising two generally rectangular panels pivotally connected to each other and to said handle member along a central vertical fold line midway between said side walls and pivotally connected to said triangular bottom panels, the second rectangular end wall comprising two trapezoidal end panels and two adjacent complementary triangular end panels, the trapezoidal end panels being pivotally connected to each other and to said handle member along a central vertical fold line midway between said side walls and being pivotally connected to said triangular end panels along inclined fold lines which are substantially perpendicular to each other when the four panels of said other end wall are in a single vertical plane, said triangular end panels being pivotally connected to said bottom trapezoidal panels, the trapezoidal bottom panels being hinged to said side walls along horizontal fold lines substantially perpendicular to the pivotal connections between the triangular end panels and the bottom trapezoidal panels and perpendicular to the pivotal connections between the triangular bottom panels and the end panels of said one end wall, said last-named end panels and the trapezoidal end panels of the second end wall being hinged to said side wall at the four corners of the container along vertical fold lines perpendicular to said last-named horizontal fold lines, and a plurality of parallel separating bars pivotally connected between said handle member and said side walls and dividing the container into a series of rectangular compartments on each side of said handle member.

7. A collapsible container comprising parallel upright side walls, a bottom wall including a pair of trapezoidal bottom wall panels pivotally connected to each other midway between said side walls and to the bottom edges of said side walls along horizontal fold lines, each bottom panel having one end edge perpendicular to the bottom edges of said side wall and having one side edge extending substantially the full length of the container, a first end wall comprising a pair of end panels pivotally connected to each other midway between said side walls and to the end edges of said side walls along vertical fold lines, said end panels having bottom edges substantially perpendicular to said vertical fold lines, a second end wall including a pair of trapezoidal end panels pivotally connected to each other midway between said side walls and to said side walls along vertical fold lines, said last-named end panels having bottom edges inclined at about the same angle relative to the horizontal and to the vertical, said second end wall also including connecting panels extending between and pivotally connected to said last-named end panels and to the bottom panels, said connecting panels being hinged to said end panels along inclined fold lines and being hinged to said bottom panels along horizontal transverse fold lines which are generally perpendicular to said side walls when the carton is in its article-carrying open position, said bottom wall also including triangular connecting panels complementing said trapezoidal bottom panels and pivotally connected thereto along inclined fold lines, said triangular bottom panels being pivotally connected to each other along a central fold line midway between said side walls and being pivotally connected to the end panels of said first end wall along horizontal fold lines, a handle member extending between the end walls midway between the side walls and detachably connected to the end walls at the pivotal connections between the end panels, a pair of parallel horizontal laterally extending separating bars on each side of said handle member pivotally connected to the bottom portion of said handle, the bars on one side of the handle being substantially laterally aligned with the bars on the opposite side of the handle, and means connecting said bars to the top portions of said side walls.

8. A two-piece molded plastic carton comprising a one-piece handle assembly and a one-piece body portion, said body portion comprising a rectangular bottom wall having two panels hinged together at a central horizontal longitudinal fold line, a pair of vertical side walls hinged to the opposite side edges of said bottom wall and having laterally aligned upwardly projecting portions and integral separating bars hinged to the opposite ends of said last-named portions along vertical fold lines, each of said separating bars extending horizontally a distance

corresponding substantially to the width of each bottom panel and having an end portion of reduced thickness providing a flexible tab with a tab-receiving opening therein, a pair of end walls hinged to said side walls along vertical fold lines at the four corners of said container and connected to said bottom wall to support the same, each end wall comprising two end panels and a plurality of integral flexible connecting portions providing hinges along a central vertical fold line midway between said side walls, said last-named hinges being spaced apart to provide a central tab-receiving opening in each end wall near the upper end thereof, said handle assembly being located substantially along a vertical plane midway between said side walls and comprising downwardly projecting end portions having locking tabs extending through the tab-receiving openings and engaging the hinges at the upper central portions of the end walls detachably to connect the handle assembly to the end walls and having locking tabs laterally aligned with the vertical hinges of said separating bars for fitting in the tab-receiving openings of said bars to connect said bars to said handle assembly while permitting collapsing of the container by movement of the side walls toward each other.

9. A one-piece collapsible container comprising a generally rectangular bottom wall having a pair of bottom panels hingedly connected along a central horizontal fold line, a pair of upright side walls extending the full length of said bottom wall and hingedly connected to the side edges of said bottom panels along horizontal fold lines parallel to said first-named fold line, a pair of end walls each having a pair of end panels hingedly connected to each other midway between the side walls and to said side walls along vertical fold lines, said bottom panels being hingedly connected along inclined fold lines to generally triangular panels which complement said bottom panels to form said rectangular bottom wall, said triangular panels being hingedly connected to the panels of one end wall, said last-named fold lines being inclined at an angle in the neighborhood of 45 degrees relative to the side edges of the bottom wall and being substantially in alignment with the bottom corners of the container.

10. A collapsible container as defined in claim 9 wherein the panels of the other end wall are hingedly connected along inclined fold lines to generally triangular panels which are hingedly connected to said bottom panels and complement the end panels to form said other end wall.

11. A collapsible container as defined in claim 9 wherein dividing means extend between said end walls and connect the end panels connected to one side wall to cause said end panels to swing in unison in the same direction, said dividing means being located near the top of the container to divide the container into a plurality of compartments and being spaced from the bottom edges of the side walls a distance greater than the width of the bottom panels, the panels of said one end wall being inclined slightly in direction to facilitate collapse of the container when the bottom panels are perpendicular to the side walls.

12. A collapsible container as defined in claim 9 wherein a pair of separating bars are hingedly connected to the upper portion of each side wall at the upper end thereof for connection to a handle member, the central hinged connections of the end walls and the free ends of said bars being provided with attachment means for connection to said handle member.

13. A collapsible compartmented reticulate molded-plastic carton for carrying bottles or cans comprising a generally rectangular bottom wall having a pair of bottom panels hingedly connected to each other along a central fold line, a pair of upright reticulate side walls extending the full length of said bottom wall and hingedly connected to the side edges of said bottom panels, a pair of upright reticulate end walls each having a pair of end panels hingedly connected to each other midway between the side walls and to said side walls along vertical fold lines, dividing means extending between at least one pair of said upright walls for dividing the opened carton into a plurality of compartments of generally rectangular horizontal cross section and for constraining the end panels connected to one side wall to cause them to swing in the same direction, said dividing means being located near the top of the carton and being spaced from the bottom edges of the side walls a distance greater than the width of the bottom panels to permit the bottom panels to fold inwardly between the side walls when the carton is collapsed, and flexible inextensible means connected between the bottom panels and the panels of the end walls to constrain the bottom panels to swing upwardly between the side walls in response to outward swinging movement of one of the end walls, the hinged connections between said panels being molded integral with said panels and having a thickness at least 50% less than the thickness of said panels.

14. A collapsible one-piece molded plastic carton comprising a reticulate generally rectangular bottom wall, a pair of reticulate side walls extending the full length of the bottom wall, and a pair of reticulate end walls each having a pair of end panels connected to each other between said side walls, the walls of said container being reduced in thickness at the margins of said panels to provide four integral vertical hinges at the corners of said container connecting said end panels to said side walls and integral vertical central hinges connecting the end panels along vertical fold lines midway between said side walls, said hinges being flexible and having a thickness at least 50 percent less than the thickness of said panels to permit collapsing of the carton.

15. A collapsible one-piece molded plastic carton comprising a reticulate generally rectangular bottom wall having a pair of bottom panels connected to each other along a central fold line, a pair of reticulate side walls extending the full length of the bottom wall, and a pair of reticulate end walls each having a pair of end panels connected to each other between said side walls, the walls of said container being reduced in thickness at the margins of said panels to provide four integral vertical hinges at the corners of said container connecting said end panels to said side walls, two integral horizontal hinges at the opposite sides of the container connecting said bottom panels to the bottom edges of said side walls, and a horizontal central hinge between said bottom panels at said central fold line, said hinges being flexible to permit collapsing of the carton, the thickness of each hinge being at least 50 percent less than the thickness of the adjacent panels.

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