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Hatfield

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[54] **PLASTIC JACKET FOR CONTAINERS**

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[21] Appl. No.: **294,171**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 135,925, April 21, 1971, abandoned.

[52] **U.S. Cl.** ..... **294/87.2,** 206/145, 206/150, 224/45 AB

[51] **Int. Cl.** **B65d 71/00**

[58] **Field of Search** ..... 294/87, 87.2; 206/65 C, 206/65 E, 145, 150; 220/102; 224/45 AA, 45 AB, 45 BA

[56] **References Cited**

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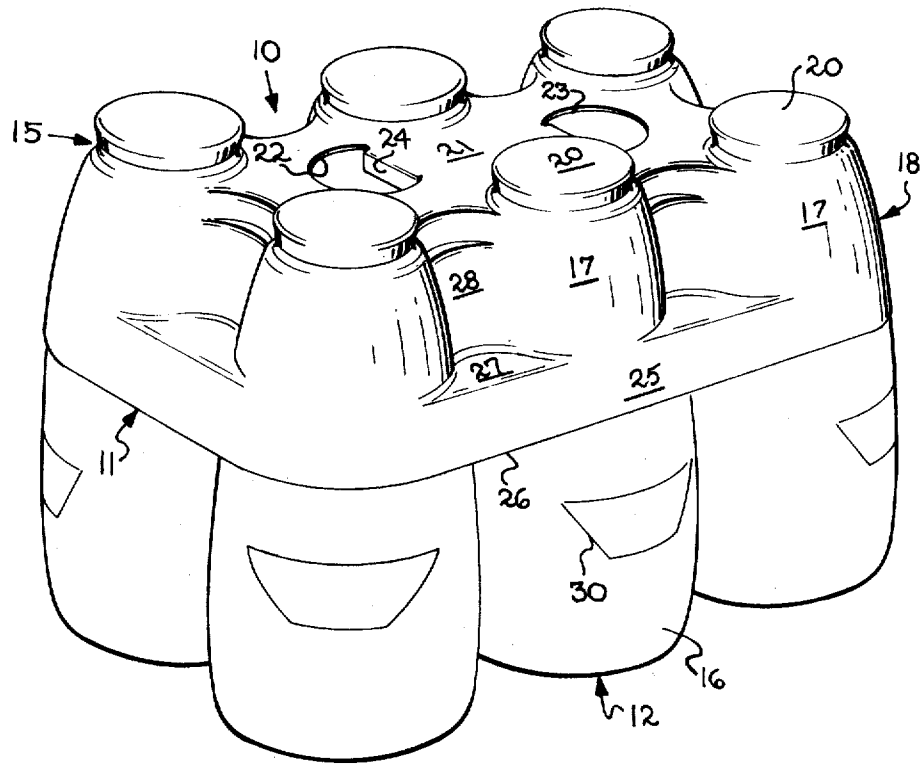
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Assistant Examiner—Johnny D. Cherry
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[57] **ABSTRACT**

The invention disclosed relates to a plastic multipak carrier for containers comprising a one-piece thermoformed receptacle enclosing the upper end portion of the container in compartments and suspending the container in the carrier by a snap fit bead or projection means in the upper end of the compartment engaging an end portion of the container, such as at a neck bulge or the closure skirt. The carrier when used with glass bottles provides a partial height peripheral skirt that protects the glass against abuse, and, if the carrier is formed of opaque material, partial light protection is provided the contents of the glass bottles by the carrier. The carrier in combination with composite containers in which the lower body portion or the body below the neck of the bottle is covered with a plastic covering or full label will furnish full light protection to the contents of the bottle, as well as cushioning against abuse. The closed top of the compartment also protects a ring pull closure from damage.

23 Claims, 7 Drawing Figures



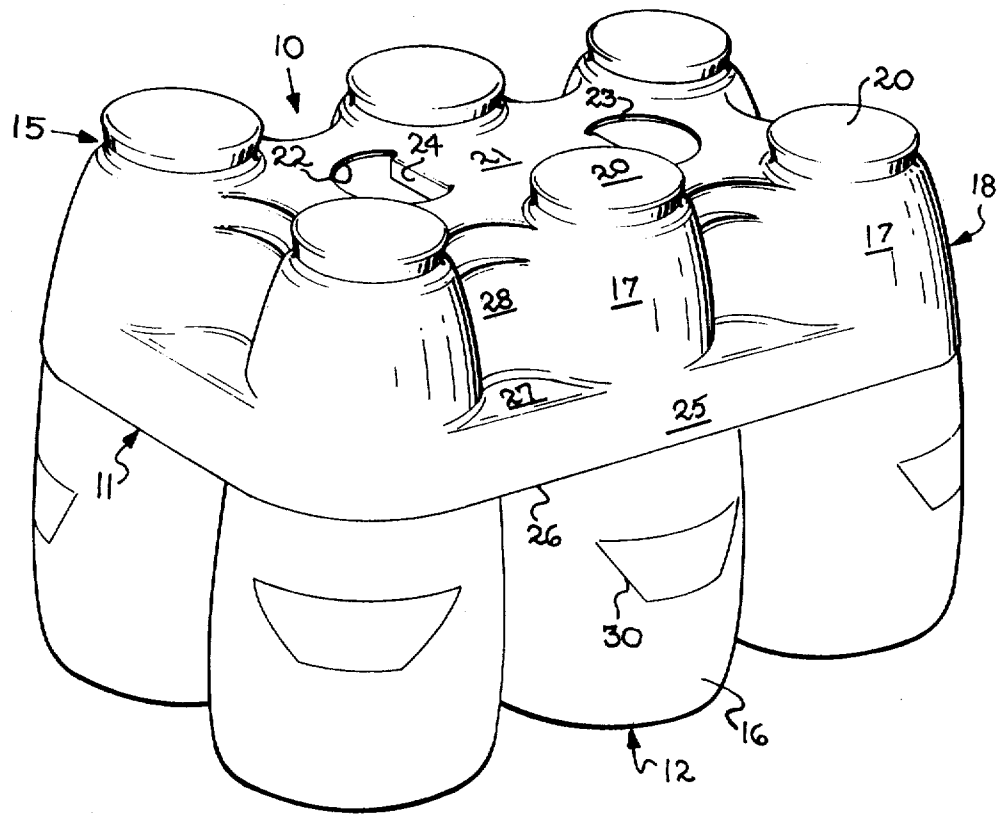
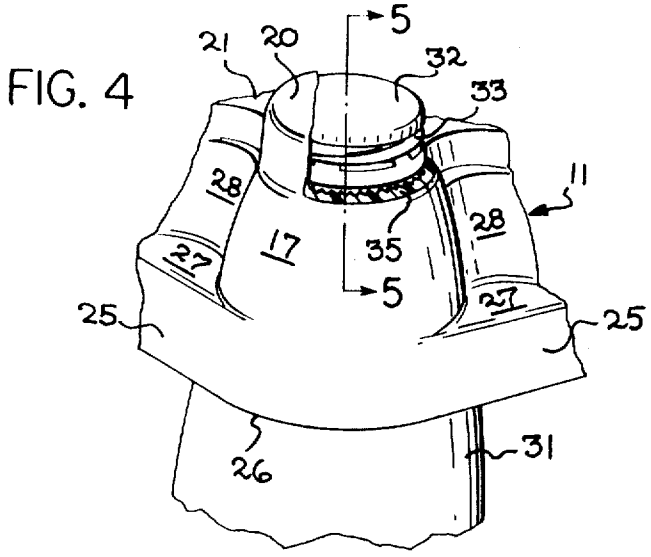


FIG. 1

FIG. 4



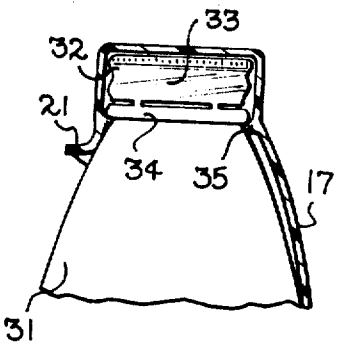


FIG. 5

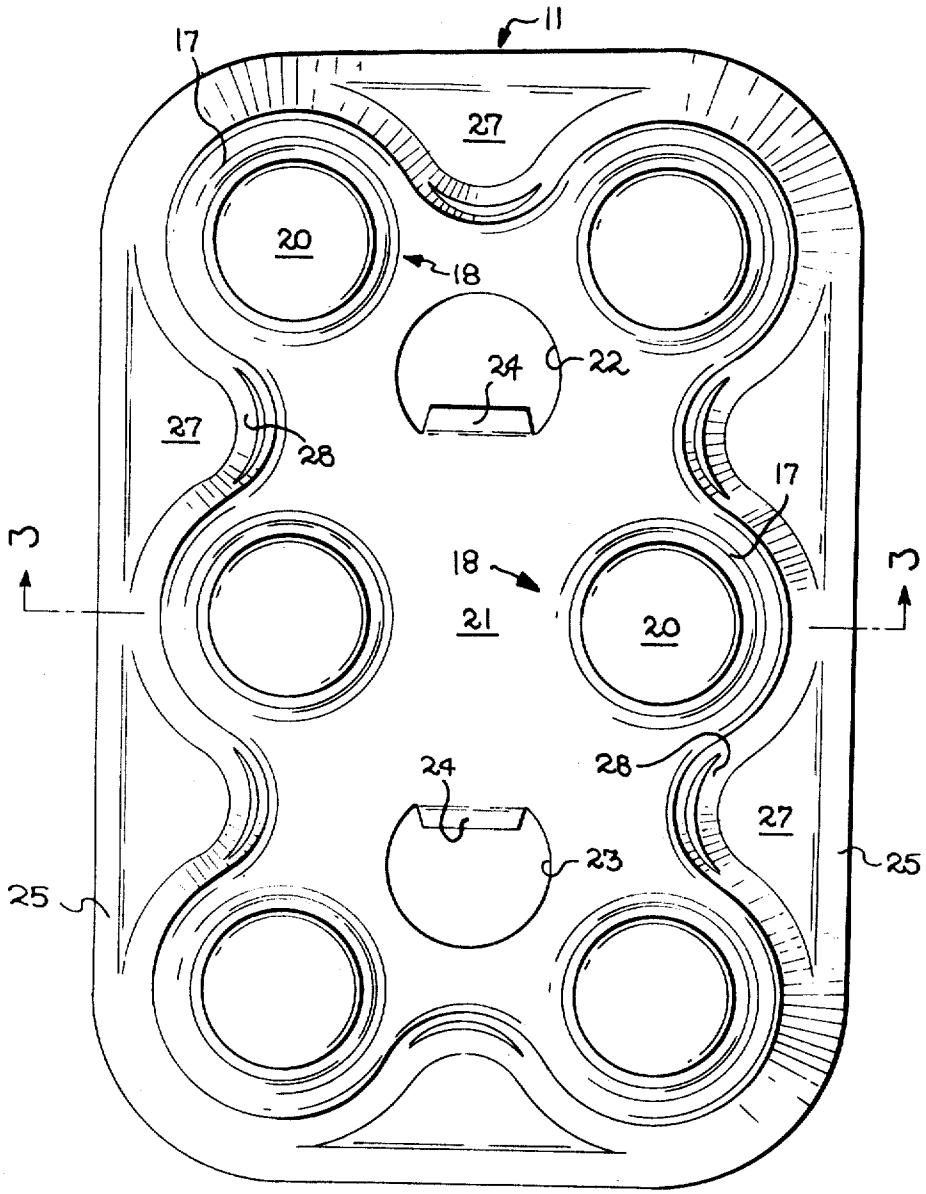


FIG. 2

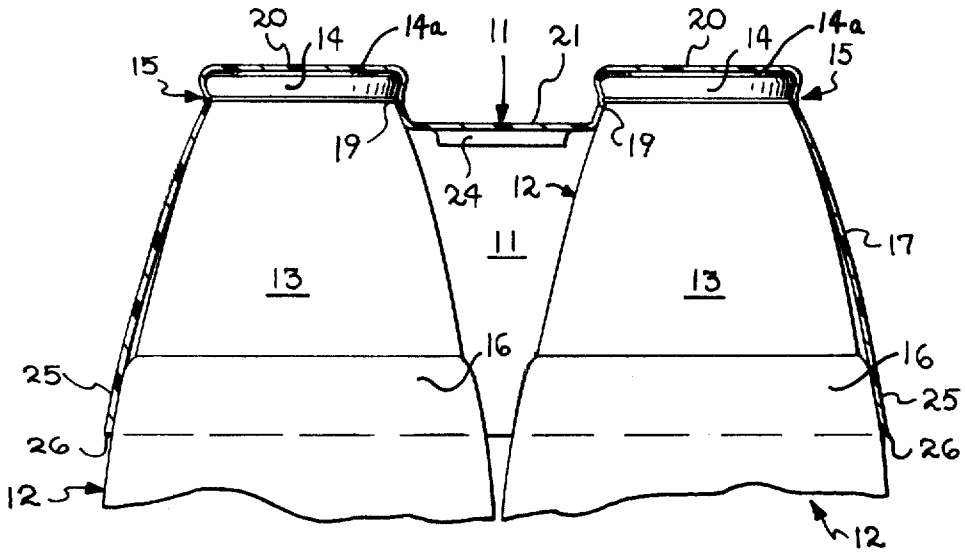

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FIG 3

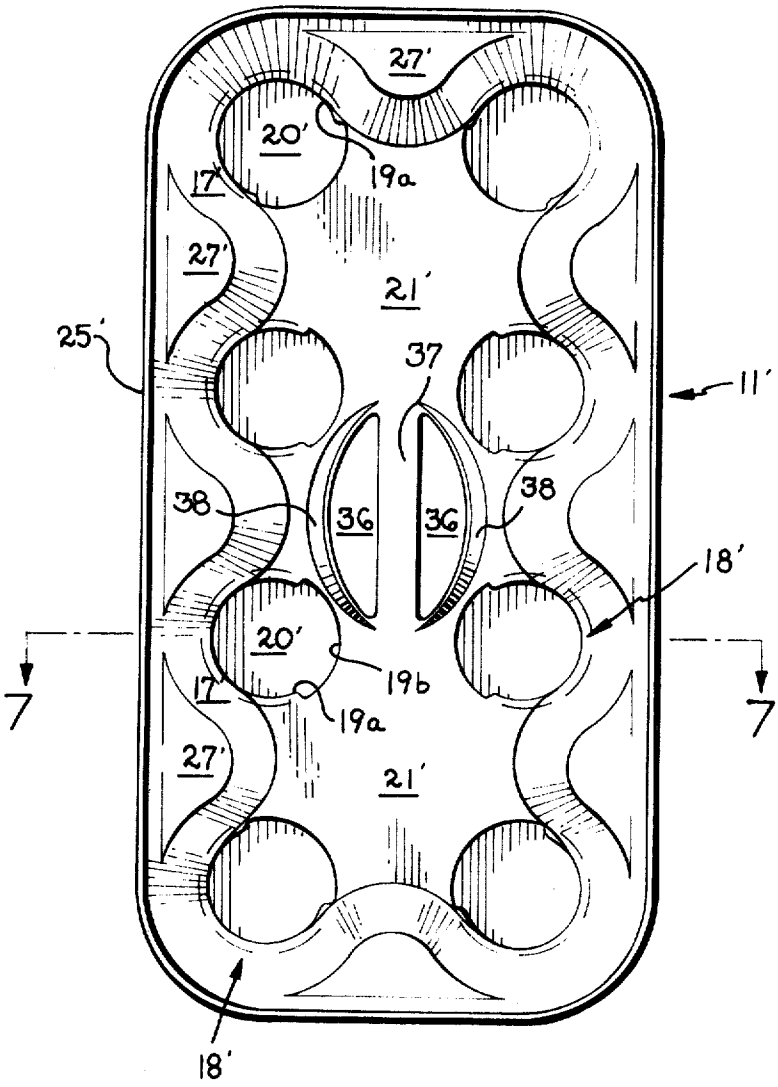


FIG. 6

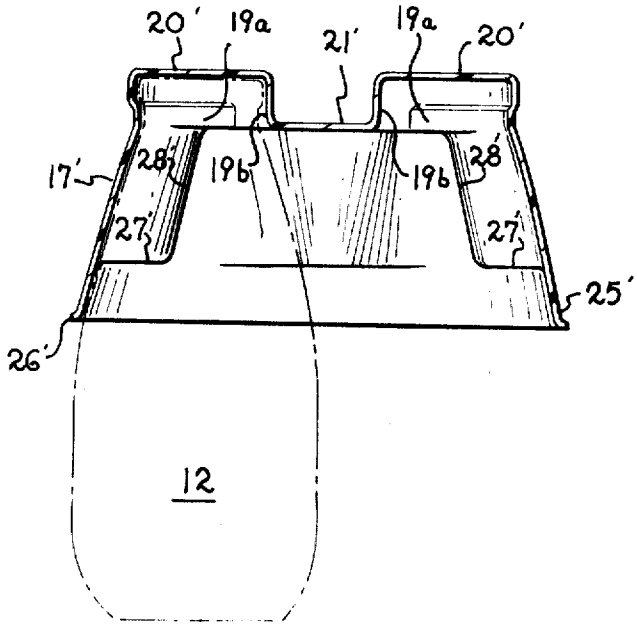


FIG. 7

PLASTIC JACKET FOR CONTAINERS

This application is a continuation-in-part of my earlier application, Ser. No. 135,925, filed Apr. 21, 1971, now abandoned.

This invention relates to carriers in combination with containers forming a multipak of filled containers, such as glass bottles. The container package includes protection of the containers, closures thereon and protects the contents against damage from light or other radiation.

In the handling of containers in the present commercial marketplace, it is conventional to use carriers for packaging multiple bottles of product, such as beverage, beer, etc., as a sale unit; and more importantly, for transporting and delivery of the products to the customer. Some of the products, such as beer, require protection of the product from light radiation, and when product is packaged in glass bottles, the carrier utilized is often the full wrap, paper carrier. Many of the containers currently in use employ a top ring pull closure for convenience opening of the bottle. This type of closure is vulnerable to damage in handling.

It is an object of the present invention to provide a carrier and container package of one-piece construction composed of plastic material that is economical, practical to use and easy to manufacture and assemble onto a grouping of containers.

Another object of the invention is to combine the onepiece carrier of this invention with glass containers having the body portion of the container itself covered with a layer of material, such as plastic or paper labels, and the assembled combination provides protection to the glass and closure of the bottle from abuse, and protects the contents of the container from harmful radiation.

Still another object of the invention is the combination of a C-shaped snap-ring or bead in the container compartment of the carrier that is disposed to hold the container, yet permit easy removal of the container.

SUMMARY OF THE INVENTION

The invention consists of a thermoformed, one-piece plastic jacket-type carrier for containers, such as glass bottles. The carrier is formed to provide individual cavities or compartments into which the upper ends (necks) of the containers are telescopically inserted and grasped by a snap-ring or annular engaging means. The containers are suspended by their closure ends in the compartment for transport or handling. The grouping of plural containers in the package are held together in wall to wall contact by a lower peripheral skirt integral with the compartments and a top reinforcing wall connects all the compartments to strengthen the carrier and provide a wall member of the jacket for carrying the package. The one form of carrying the package is by finger holes in the top wall of the carrier.

One important feature of the invention is the use of the jacket-type carrier and composite containers in which a glass bottle has a body and base covering of a less frangible material, such as a plastic base cup or a shrink plastic sleeve. The container is closed by a convenience opening, ring pull type closure. In this form the compartments of the carrier cover the upper glass neck area of the container and the closure, protecting the glass surface and closure from abuse or damage. The skirt of the jacket carrier extends downwardly

enough to at least meet the upper edge of the covering or base of the composite container. Thus, the carrier and composite containers cover the glass surfaces, and if the bottle covering material and carrier are opaque, the resulting container package protects the product against light transmission.

Other significant features, objects and advantages of the invention will occur to persons skilled in the art from the description appearing hereinafter and the related drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a three-quarter front perspective view of the container package of the invention;

FIG. 2 is a top plan view of the carrier;

FIG. 3 is a transverse sectional elevational view taken along line 3—3 on FIG. 2;

FIG. 4 is a fragmentary perspective view, in part broken away, of a second form of container and closure adapted to use with the carrier of this invention;

FIG. 5 is a sectional elevational view taken along line 5—5 of FIG. 4;

FIG. 6 is a bottom plan view of a third form of the invention in which the snap-rings in the compartments are C-shaped; and

FIG. 7 is an end sectional elevational view of the carrier taken along line 7—7 of FIG. 6.

DESCRIPTION

Referring to FIG. 1, the package 10 embodying the invention comprises a carrier 11 and a plurality of composite containers 12. The container 12 has a bottom end wall upon which it is resting in upright position. Contiguous with the bottom wall is a glass body wall which tapers upwardly into the wall of the neck portion 13 (see FIG. 3). At the upper end of neck 13 is the annular rim of the glass bottle defining the upper end opening that is enclosed by the closure 14. Closure 14 extends over the rim or bead of the bottle and is crimped or contracted therebelow along the side wall of neck 13. The closure illustrated is a convenience opening metal ring pull closure such as described in detail in U.S. Pat. No. 3,561,631. As seen on FIG. 3, the closure 14 includes a top ring pull device 14*a* for opening removal of the closure. The closure 14 and neck 13 provide an undercut or reverse taper region 15 that provides an annular ring-like surface to support the container in the carrier in a manner to be presently described.

The containers 12 include a body covering 16 which may take the form of a layer or sleeve of shrunken thermoplastic material extending from a region in the neck 13 along and covering the body wall of the container and to or into the bottom wall. Another form of composite container is shown and described in U.S. Pat. No. 3,482,724. This container includes a glass bulbular lower portion and a generally concavely curved upper portion that tapers to a neck rim at the end opening. A closure, similar to closure 14 with a peripheral skirt and lower rolled edge thereon is provided and is crimped over the end rim of the container. The lower bulbular end of the glass body is secured to a cup-like base that holds the glass body in an upright position when placed on a horizontal surface. The base is similar otherwise to the body covering 16 in that it extends axially along the glass body wall a substantial amount and is made of

a less frangible material, such as polyethylene or the like.

The carrier **11** is made of plastic and is most conveniently thermoformed from a sheet or web of a thermoplastic material. Carrier **11** is preferably constructed of a thermoplastic that will produce a semi-rigid member. Examples of suitable thermoplastic compositions are polyvinyl chloride, polyethylene of the high or medium density types or compositions, and polypropylene. An economical yet practical construction of carrier **11** is a **25** mil thickness high density polyethylene sheet that is thermally molded in a mold for the structure **11** hereinafter described.

The carrier shown on FIGS. **1–3** includes the several upright annular walls **17** which define individual container compartments **18.** The compartments correspond substantially with the configuration of the neck portion **13** of the containers and their upper end closure **14.** Near the top of compartments **18** are provided for each an annularly disposed, radially inwardly projecting yieldable means **19.** This may be provided as an annular bead or lugs which will yield slightly and allow a snap-on fit over the closure end **14** of the containers. Once the containers are snapped in the carrier by axial telescopic relative movement of the carrier **11** and containers **12,** the bead **19** engages under the end enlargement of the container, such as just at the underside of closure **14.** The containers are now engaged in the cavities **18** of carrier **11** and may be lifted or carried therewith.

Over each of the cavities or compartments **18** is a top wall **20** enclosing the compartment top end and protecting the closure **14** and its ring pull device **14a** from abuse. This cover wall **20** also keeps the containers of the package clean.

Near the upper end of each of the cavities **18** and integrally attached to their wall **17** is a first horizontal wall **21.** The wall **21** joins the compartment walls **17** just below the snap bead **19** and provides rigidity to the top portion of carrier **11.** Also, a means for grasping and carrying the carrier and containers is provided at horizontally spaced finger holes **22, 23.** The finger holes may be partially cut circles and fingers inserted at use will fold the cut portion **24** vertically inwardly providing a larger cushioned edge as a bearing support for the fingers in carrying the package **11, 12.**

Extending downwardly from and integrally with compartment vertical walls **17** is a perimeter vertical skirt wall **25.** The perimeter of skirt wall **25** will relatively tightly fit the outer surfaces of the body walls of containers **12** and encompass the grouping of containers **12** to the extent the lower margin **26** of the skirt **25** will at least meet or overlap with the composite container coverings **16.**

The top of skirt wall **25** blends with a second horizontal wall **27** disposed below the level of the first wall **21.** The second wall **27** is integrally connected with the first wall **21** by the vertical wall portions **28** which blend with the vertical compartment walls **17.** The lower wall **27** lends structural support between the lower reaches of compartments **18** and the curved vertical walls **28** interconnect the lower and upper wall structures to lend rigidity to the carrier **11.** By locating the vertical centers of compartments **18,** containers **12** are substantially in wall to wall abutting contact. Perimeter or skirt wall **25** comfines the grouping and prevents sidewise movement of the containers individually within the carrier.

The container package **10** may be provided with decoration and art work in various manners. The carrier may be decorated by blanket offset printing. Also, the containers may be individually decorated, such as illustrated by the area **30** (FIG. **1**) to provide a pleasing package. The significant feature on FIG. **1** is in the characteristic of providing full light protection to the container's product. The carrier **11** and container coverings **16** may be made to a degree of opaque quality by selection of coloring or thickness of the plastic materials employed in the package.

The FIGS. **4** and **5** illustrate a versatility to the container package. In the form there illustrated, glass containers **31** have a tapering neck portion and near the top end of the container is the screw-on closure **32** held by suitable threads **33** on the end region of the neck. At the lower region of threads **33** is an annular radial bead **34** which comprises a part of the tamper proof character of this known closure type. The carrier **11** compartment **18** may be provided with a helical form (not shown) of annular radially inwardly projecting means for engaging and retaining the closure end of the container **31** in the carrier compartment.

The snap-ring bead **35** is shown on FIGS. **4** and **5,** and this form of retaining means, similar in structure to **19** on FIGS. **1–3,** engages under the bead **34** engaging the lower closure skirt portion over the bead of the glass neck. The remainder of the structure of carrier **11** is as described above.

On FIGS. **6** and **7** a third form of carrier **11'** and package is shown. The carrier illustrated includes eight compartments **18'** for containers **12** that are each formed by upright annular walls **17'** and a top wall **20'.** In each compartment **18'** near its top wall **20'** is the yieldable inwardly projecting means for snapping the closure of the container into holding position. In this embodiment, this yieldable means takes the form of C-shaped bead or snap-ring **19*a*.** As seen on FIG. **6,** the inner wall periphery of the compartment **18'** at the snap-ring **19*a*** is comprised of two diameters. The first is the smaller diameter of the bore of C-shaped ring **19*a*** and this enlarges or opens up into the slot-like area at the larger diameter of the wall portion **19*b*** in the top of the compartment **18'.** The larger diameter portions **19*b*** of the compartment top structure are each disposed along the interior side of carrier **11'**; that is, to the side away from the outer wall **25'** of the skirt. When a container **12** is to be removed from the carrier, it is pivoted or swung outwardly at its bottom end so that the bead or flange along the neck moves outwardly through the opening of the C-shaped head and to the slot-like area. Downward pull or twist of the container then frees it from the compartment and the carrier.

The structure just described provides a secure carrier mounting for the containers **12,** yet provides an easier and more convenient structure for removal of a selected container from the carrier without disturbing other containers in the carrier.

The remainder of the carrier **11'** is constructed similarly to the carrier **11,** previously described.

In the horizontal top wall **21'** of this form of carrier **11'** is another form of hand grip. Substantially centrally of the top wall **21'** are formed a pair of elongated, curved apertures **36.** The apertures **36** are in combination somewhat "**0**" or oval shaped. The two apertures

36 are separated by an elongated web or strap 37 that is an integral part of top wall 21'. A portion of the plastic at 38 adjacent the edges of the apertures 36 is turned under or is bendable inwardly to allow ease of finger grip on the carrier for hand carrying.

The removal of containers from the package is accomplished by cocking or twisting the container in the carrier. The flexible nature of the retaining means, such as the snap bead formed herein described, will release and the bottle is removed by withdrawing from the lower end of the carrier.

Another form of removal is by twisting, as in the case of the threaded closures, resulting in an unscrewing action for downward removal of the bottle from the compartment in the carrier.

Having shown and described several forms of the invention, other forms and variations should occur to those persons skilled in the art. It is the purpose of this disclosure to limit the scope of coverage of the invention only by the appended claims.

I claim:

1. An integral one piece molded carrier adapted for engaging and embracing a substantial portion of each of a plurality of containers arranged upright in a substantially side wall abutting relationship comprising an elastomeric material of flat stock thermoformed and having vertically disposed walls defining cell-like compartments whose vertical axes correspond with the axes of said arrangement of plural containers, a horizontal wall integral with all of the vertical walls of said compartments and connected near the upper end of said compartments, means on said horizontal wall adapted for lifting and supporting the carrier, annularly disposed, radially inwardly projecting yieldable means along the interior surface of said vertical wall of each compartment, the interior diameter across said compartment of said yieldable means being slightly less than the outer diameter of a portion of the container adjacent its upper end to be received in said compartment to engage and support said container therein, a vertical skirt wall adapted to embrace the outer extending side wall portion of said plurality of containers and retain them in a cluster, the skirt wall being integral with said vertical walls of the compartments, and a second horizontal wall below said first mentioned horizontal wall and integral with said vertical skirt wall.

2. The carrier defined by claim 1, including a top wall on each of said compartments and integrally connected to said vertical wall thereof, said annularly disposed yieldable means of each compartment being spaced vertically below said top wall thereof.

3. The carrier defined by claim 1, wherein said annularly disposed, radially inwardly projecting, yieldable means comprises a continuous, endless, annular bead-like projection adapted for engagement with said container to support the latter in said carrier.

4. The carrier defined by claim 1, wherein said vertical skirt wall provides an interference, tight fit with said plural containers, adapted to hold said containers in side wall contact, one to the other, preventing any substantial sidewise relative movement of the containers in the carrier.

5. The carrier defined by claim 4, wherein said compartment vertical walls and said vertical skirt wall together are greater than one half the height of the containers that are to be received and supported in the carrier.

6. The carrier defined by claim 1, including a second vertical wall connected integrally between said first and second horizontal walls, said second vertical wall being disposed horizontally inwardly from the perimeter defining vertical skirt wall of said carrier and joined with said first horizontal wall to provide support for the carrier.

7. In combination, a grouping of plural containers in upright position and in close wall to wall engagement, each of the containers including a bottom wall, body wall and an annular upper end portion, and a one-piece carrier for said grouping of containers, said carrier being integrally formed of a thermoplastic and including plural upright annular walls defining individual upright cavities for receiving the upper end of said containers, annularly arranged, yieldable projection means extending radially inwardly of each of said cavities near the top end thereof, said means engaging said annular upper end portion of each container for supporting each container in its respective cavity, a vertical skirt wall in surrounding engagement with the body walls of the grouping of containers restraining the containers against substantial lateral movement in the cavities and with respect to each other, and first and second horizontal wall means respectively connecting (1) each or said upright annular walls adjacent said projection means thereof and (2) said annular walls above said vertical skirt wall for structurally interconnecting said cavities and reinforcing said carrier.

8. The combination defined in claim 7, wherein said containers comprise glass bottles which have at their upper ends a neck portion and top mouth opening, the mouth opening having a closure member secured thereover and engaging the neck portion to close the bottle mouth, the said yieldable projection means on the wall of each of said cavities engaging an annular portion of the closure providing suspending support for the bottle in said cavity of the carrier.

9. The combination defined in claim 8, wherein the bottle body wall has an annular surface covering extending from adjacent the bottom wall axially over a major extent of the body of the bottle, the vertical skirt wall extending down along the body of the bottles to at least join the annular surface covering on the bottle bodies, the combination of the carrier and said annular covering on the bottles providing a protective layer for the glass bottles from their bottom end to the closured end.

10. The combination defined in claim 9, wherein the annular covering on the bottles comprises a layer of thermoplastic.

11. The combination defined in claim 10, wherein said layer of thermoplastic is opaque, thereby providing light shielding protection to contents of the bottles in the carrier.

12. The combination defined in claim 7, including means on said horizontal wall means for lifting and carrying said carrier.

13. The combination defined in claim 7, wherein the one-piece carrier includes a further vertical wall means integrally connected with the second horizontal wall meand and the first-mentioned horizontal wall.

14. The combination defined in claim 7, wherein said one-piece thermoplastic carrier is comprised of a thermoplastic selected from the group consisting of polyethylene, polystyrene and polyvinyl chloride, the one-

piece carrier having the characteristic of being at least a semi-rigid member.

15. A one-piece receptacle for retaining an array of containers comprised of at least a pair of adjacently positioned containers having a circumferential enlargement portion near one end thereof and arranged in upright side-by-side relationship, said receptacle comprising an integral cover element having an endless upright perimeter wall adapted to extend around the array of containers for covering at least a portion of their axial length, individual cell-like compartments defined by an annular wall extending above said upright perimeter wall and each said compartment adapted to nest over the top of a container of said array, said compartments being integrally joined with said upright perimeter wall by a first horizontal wall means, bead-like means annularly disposed and projecting inwardly on the interior of said compartment wall adjacent the top of each said compartment, a second horizontal wall integrally connected with the compartment walls adjacent the top thereof, said bead-like means defining a minimum diameter across said compartment that is less than the exterior diameter of said enlargement portion of the container to be received in said compartment and engageable with its said enlargement portion at said one end to support the container in said compartment, and means on said cover element for hand grasping and carrying the one-piece receptacle and contents supported in the compartments thereof.

16. The one-piece receptacle of claim 15, wherein said integral cover element is thermoformed from a thermoplastic material.

17. The one-piece receptacle of claim 16, wherein said thermoplastic comprises polyethylene.

18. The one-piece receptacle of claim 17, wherein said polyethylene is selected from medium and high density compositions thereof.

19. The one-piece receptacle of claim 15, wherein said cover element includes a top closure wall on each of the compartments, said top wall thereof being connected with the first horizontal wall means and the compartment defining wall such that each compartment is closed at its top end and open at its lower end for receiving therein said containers in their upright position.

20. The receptacle of claim 15, wherein said bead-like means comprises a discontinuous snap bead in the wall of each compartment, said bead defining a C-shaped ring, providing the minimum internal diameter of the compartment, the open end of the discontinuous C-shaped bead defining a slot-like area of a larger internal diameter of the compartment.

21. The receptacle of claim 20, wherein said C-shaped ring in the wall of each compartment is located therein such that the open end of the discontinuous bead is facing inwardly of the upright perimeter wall of the receptacle and said slot-like area is disposed in each compartment substantially opposite said upright perimeter wall.

22. A combination comprising a grouping of a plurality of containers, each in upright position, having a base, body portion, upwardly tapered neck portion, an annular rim portion on the neck portion defining an upper end opening for the container, and a closure applied over the upper end opening and said rim portion, and a carrier for said containers in suspended relation, said carrier including plural annular, upwardly tapered wall individually extending adjacent the necks of said containers, first horizontal wall means integral with each of said annular walls and overlying the necks of the containers, an inwardly facing, bead-like means on each of the tapered walls, said means having an inwardly facing circumference slightly less than the external circumference of said closure circumference on the container, said bead-like means being disposed under the rim of the container, a peripheral skirt wall integral with each of said tapered walls and extending peripherally around said grouping of containers, said skirt wall extending downwardly along at least an axial portion of the body of the containers, second horizontal wall means integral with said tapered walls and spaced from said first horizontal wall means, and means on said second horizontal wall means for hand carrying the carrier and containers, the containers being in suspended relation from the bead-like means of the respective tapered walls and the grouping of containers being engaged by said peripheral skirt wall preventing lateral displacement of the containers within the carrier.

23. A combination comprising a grouping of a plurality of containers, each in upright position, having a base, body portion, and an annular rim portion at the upper end of the container, and a carrier for said containers in suspended relation, said carrier including plural annular, upstanding walls individually extending adjacent the upper end of said containers, an inwardly facing, bead-like means on each of the annular upstanding walls, said means comprising a discontinuous C-shaped ring in each of the annular walls and having a minimum internal diameter on each said annular wall less than the external diameter of said upper end of the container, said bead-like means being disposed under the rim of the container, a peripheral skirt wall integral with each of said upstanding walls and extending peripherally around said grouping of containers, said skirt wall extending downwardly along at least an axial portion of the body of the containers, a horizontal wall means of said carrier integral with said upstanding walls, and means on said horizontal wall means for hand carrying the carrier and containers, the containers being in suspended relation from the C-shaped rings on the respective upstanding annular walls and the grouping of containers being engaged by said peripheral skirt wall preventing lateral displacement of the containers within the carrier.

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