July 11, 1967 H. J. WANDERER 3,330,408

CARRIER PACKAGE

Filed Dec. 16, 1964 2 Sheets-Sheet 1

Fig. 1

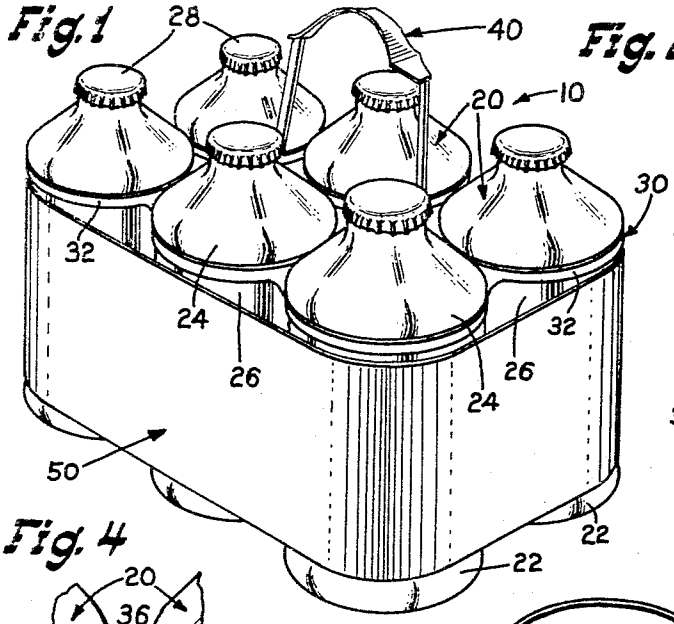


Fig. 2

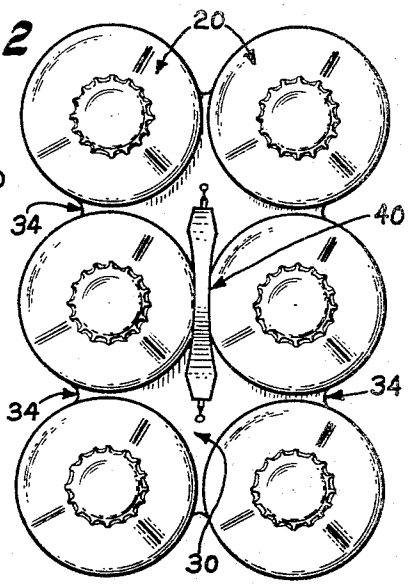


Fig. 4

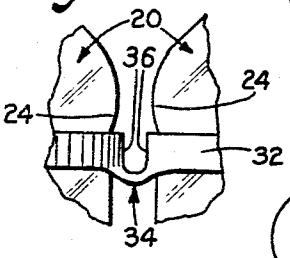
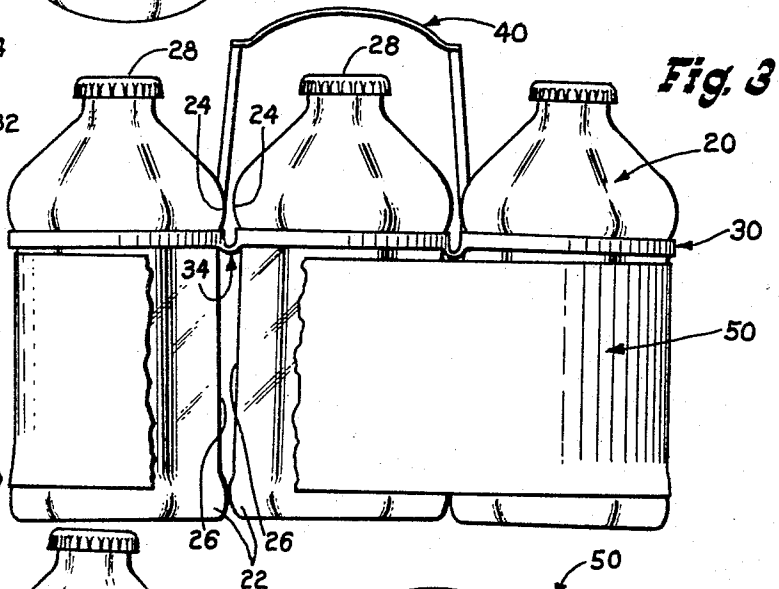


Fig. 3



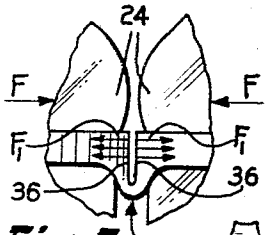
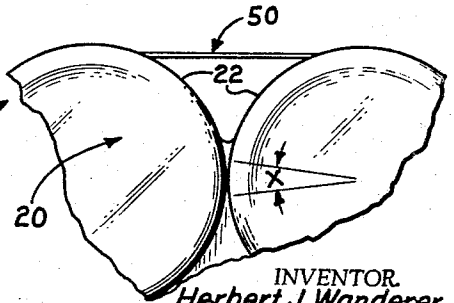


Fig. 5

Fig. 7



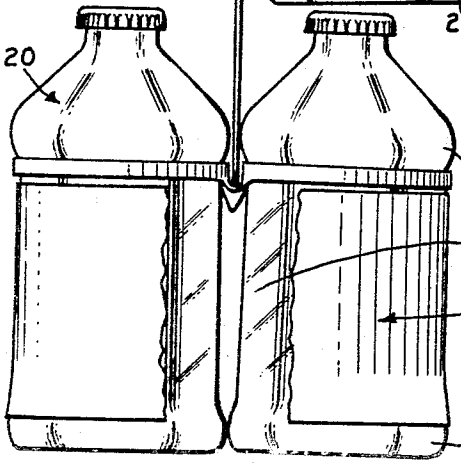


Fig. 6

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July 11, 1967 H. J. WANDERER 3,330,408

CARRIER PACKAGE

Filed Dec. 16, 1964 2 Sheets-Sheet 2

Fig. 8

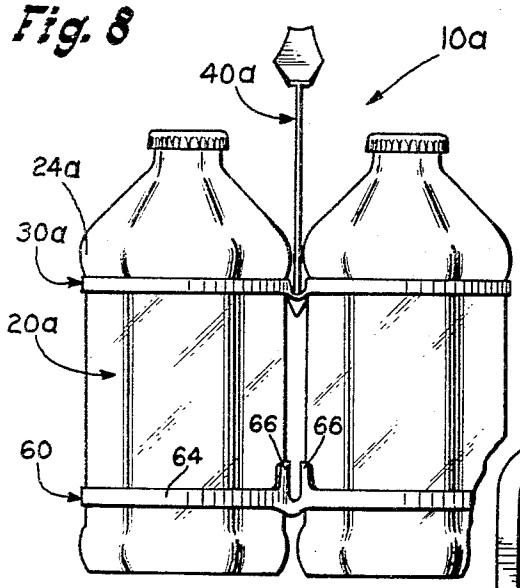


Fig. 9

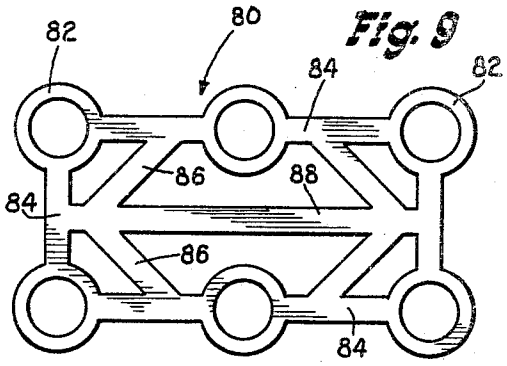


Fig. 10

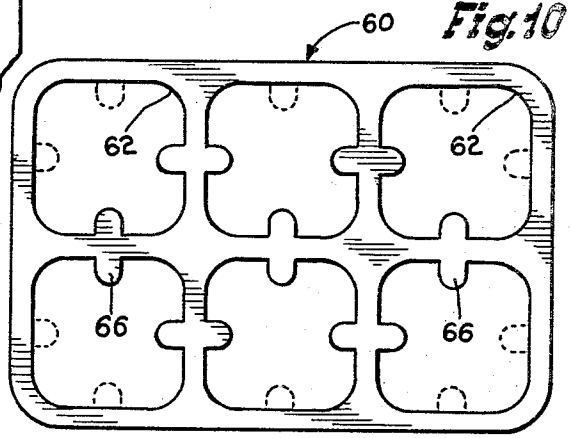


Fig. 11

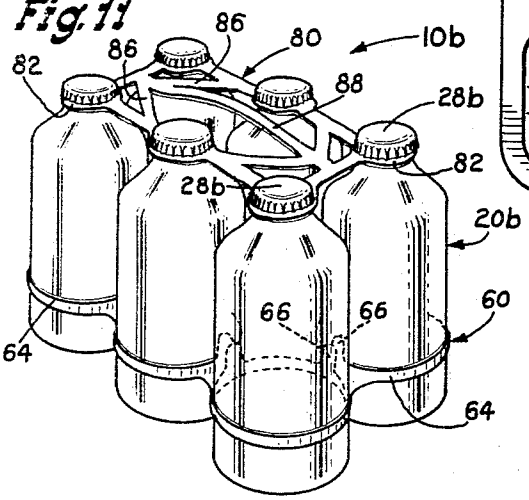


Fig. 12

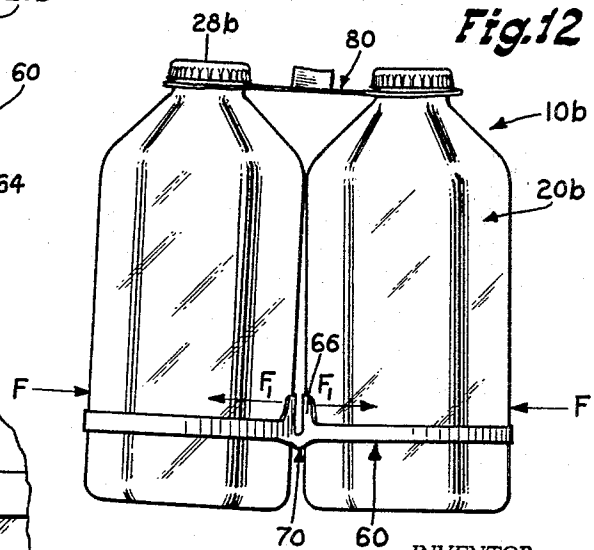
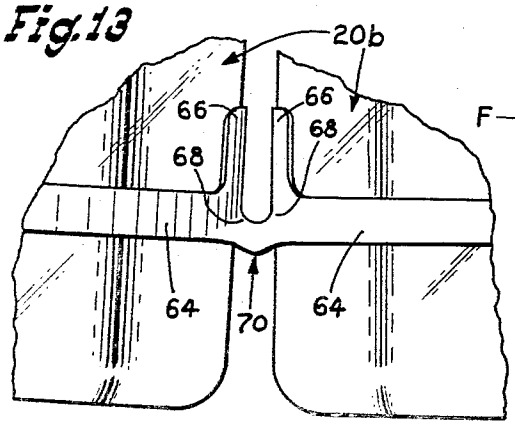


Fig. 13



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3,330,408

CARRIER PACKAGE

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Filed Dec. 16, 1964, Ser. No. 418,695
11 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

A package including carrier means for holding and carrying a plurality of articles, such as bottles, cans and the like.

Packaging techniques for bottles, beverage cans and the like have taken quite a different character with the advent of connector clips and plastic sheet carriers such as disclosed, for example, in U.S. Patent Nos. 3,002,612 and 2,874,835 respectively. These advances, dating from the late 1940's, have been enthusiastically accepted by manufacturers and consumers alike as practical and economically feasible solutions to the problems inherent in conventional paperboard carriers. One area in which these packaging techniques have experienced some difficulty is in the retention of glass cans or bottles which are subject to breakage during handling thereof.

In the usual case, the connector clips or plastic sheet carriers are designed to engage the containers adjacent their upper ends, and this leaves the lower ends of the containers free to move toward and away from each other resulting in container damage or breakage. To forestall this lateral displacement, two proposals have been suggested. One relates to the use of identical carrier devices adjacent opposite ends of the containers such as disclosed in U.S. Patent No. 3,086,651, and although not commercially used in any great numbers, this approach does offer a practical solution to container displacement. Restraining elements such as endless band means have also been used in conjunction with various carrier devices, but for one reason or the other, they have not been proved satisfactory to date in preventing container damage. The present invention offers a practical and workable solution to carrier devices used in connection with various restraining elements as will be evident from the subsequent discussion.

Accordingly, it is an object of the present invention to provide a novel and improved package which holds containers in such a way that they will not be broken or damaged.

Another object of the present invention is the provision of a beverage or package unit which retains at least two containers in a tight cluster arrangement and in substantially non-shifting locations relative to each other.

A further object of the present invention is to prevent banging or knocking of adjacent containers held together as a packaged unit.

Still another object of the present invention is the provision of a package or beverage unit incorporating first and second carrier portions which function in a manner heretofore unobtainable by prior art devices to reduce the possibility of container breakage.

A still further object of the present invention is the provision of a package or beverage unit which, in one form of the invention, enables printing of a portion of the package for displaying advertising messages.

Yet another object of the present invention is the provision of a package or beverage unit having at least one pair of adjacently positioned containers which are effectively secured in predetermined positions relative to each other, yet easily removed from the package.

Other objects and advantages will become apparent from the following description when read in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of one form of novel package constructed in accordance with the principles of the present inevntion;

FIG. 2 is a top plan view of the package shown in FIG. 1;

FIG. 3 is a fragmentary side elevational view of the package shown in FIG. 1, and illustrating the manner in which the containers are disposed relative to each other in the package;

FIG. 4 is an enlarged fragmentary elevational view of a portion of the package depicted in FIG. 1, and showing a pair of adjacently positioned containers held at predetermined distances from each other;

FIG. 5 is also an enlarged fragmentary elevational view of a pair of adjacently positioned containers similar to FIG. 4, but showing such containers positioned at closer distances to each other;

FIG. 6 is a fragmentary side elevational view of the package shown in FIG. 1;

FIG. 7 is a bottom plan view of a pair of adjacently positioned containers in the package shown in FIG. 1 with such containers abutting each other only at their lower extremities;

FIG. 8 is a fragmentary side elevational view of another form of package coming within the purview of the present invention;

FIG. 9 is a top plan view of one carrier device used with the package shown in FIGS. 11–12;

FIG. 10 is a top plan view of a second carrier device used in conjunction with the packages shown in FIGS. 8 and 11–12;

FIG. 11 is a perspective view of yet another form of package coming within the scope of the present invention, and incorporating the carrier devices shown in FIGS. 9–10;

FIG. 12 is a side elevational view of the package shown in FIG. 11; and

FIG. 13 is an enlarged fragmentary elevational view of a portion of the packages shown in FIGS. 8 and 11–12.

Referring now in greater particularity to the drawings, and first to the form of invention depicted in FIG. 1, there is shown a package **10** incorporating a plurality of containers **20** in the form of glass cans or bottles which are secured in place by the carrier **30** and the endless band means **50** to enable carrying thereof by the handle **40** associated with the carrier. The glass cans or bottles **20** have annular enlargements **22, 24** adjacent the lowermost and uppermost extremities thereof which are spaced from each other by the cylindrically shaped side walls **26**. Each of the bottles or glass cans **20** above the annular enlargement **24** tapers upwardly and inwardly toward its top, and a bottle cap or other closure member **28** is applied thereto, all as is well known in the art. This type of bottle construction works well with the package of the instant invention; however, it is to be understood that other shapes and configurations may be used, with or without enlargements as will be apparent from the ensuing discussion.

In its preferred form, the carrier **30** is of the plastic sheet carrier type disclosed and claimed in U.S. Patent No. 2,874,835 aforementioned, although various types of connector clips may be used if desired. The plastic sheet carrier, as is described in detail in this patent, comprises a substantially unsupported sheet of resilient, elastic and deformable material having a plurality of apertures therein which correspond in number to the containers desired

to be secured. Each of the apertures in the carrier **30** have a dimensional size at least smaller than the body portion of the containers so that when the containers are inserted through the apertures, the material adjacent or surrounding each of the apertures is stretched and deformed to the shape of axially directed necks **32** for underlying the annular enlargement or bead **24** at the upper end of each container.

As will be apparent from an inspection of FIG. 2, the containers are so disposed and held by the carrier **30** that a portion of the sheet material **34**, intermediate adjacent apertures in the carrier, spaces adjacently positioned containers **20** from each other. These sheet material portions **34**, as best seen in FIGS. 3–5, are substantially U-shaped in configuration as the result of the stretching and deformation of the material adjacent each aperture upon the insertion of the containers therethrough. Preferably, the apertures in the carrier **30** are spaced predetermined distances from each other to enable the material surrounding each aperture to stretch and resiliently grip the containers **20** while maintaining them in positions corresponding to their initial placement. In the usual case, the sheet material portions **34** in conjunction with the axially directed necks **32** would restrain, to some extent, the movement of the containers toward each other, but would not prevent engagement of the containers at positions remote from the carrier. Thus when the handle **40** was gripped to lift the package from a supporting surface, the containers **20** would assume angular positions relative to as well as abut each other at their lower ends, thereby enhancing container breakage or damage depending on the material from which the containers were made.

To overcome this, the present invention in the form shown in FIGS. 1–7 provides an endless band means **50**, which may either be of paper, thermoplastic or other suitable material, for encompassing the group of containers when assembled to the carrier **30**. This is best seen in FIGS. 1, 3 and 6 of the drawings wherein the endless band means **50** engages a portion of each container along its cylindrical side wall **26**, and preferably intermediate the annular enlargements **22**, 24 adjacent opposite ends thereof. This endless band means **50** is designed to engage the containers in tight or snug fitting engagement therewith to position and maintain the annular enlargements **26** at the lower end of adjacent containers in engagement with each other. This will dispose the containers at an angle to each other and permit the U-shaped sheet material portions **34** to perform an important function in preventing container damage. In particular, the endless band means **50** causes the sheet material portions **34** to act somewhat like compressed springs in resiliently urging the containers away from each other. This is best seen in FIGS. 4–5 of the drawings.

The legs **36** of the sheet material portion **34** shown in FIG. 4 are spaced from each other, preferably at distances less than the spacing between the annular enlargements **24** on adjacent containers. These legs **36** are "cocked" when the endless band means is wrapped around the containers in the manner discussed above to create an opposing force generally opposite to that which might force the containers against each other. This is indicated in FIG. 5 of the drawings wherein a force F tending to close the gap between adjacent containers is opposed by the force **F1** set up in each of the leg members **36**. In most instances, force **F1** will be sufficient to maintain adjacent containers out of engagement with each other; however, should the force F urging the containers toward each other be greater than the force **F1** generated by the leg members, the smaller spacing between the leg members **36**, as compared with spacing between enlargements **24**, will cause the legs to come into contact with each other and prevent adjacent containers from banging or otherwise engaging one another.

The handle **40** associated with the FIGS. 1–7 package preferably extends above the tops of the containers to facilitate grasping thereof, and is of the type disclosed and claimed in U.S. Patent No. 3,016,136 which is secured to the carrier **30** by a pair of arrow-shaped portions at the free extremities of the handle. It will be apparent, however, that the handle may be secured to the carrier in any desirable manner such as by stapling or riveting. Finger gripping apertures can also be provided in the carrier as is well known in the art.

It is to be noted that only small arcuate portions X of adjacent annular enlargements **22** are in engagement with each other as shown in FIG. 7, thereby maintaining large areas of adjacent containers spaced from one another. However, container breakage is not enhanced because portions of adjacent containers are designed to abut one another as long as care is taken in wrapping the endless band around the containers.

As has been discussed above, connector clips may be used in place of the plastic sheet carriers in also minimizing the possibility of breakage or injury to the containers in the package. These connector clips, while not normally of resilient character, will nevertheless act to restrain movement of adjacent containers relative to each other when used in connetcion with the endless band means **50** in the manner suggested herein. It will also be understood that while it is preferable to have annular enlargements or beads on bottles or beverage cans, they are not always necessary depending on the manner of engagement by the connector clips or the plastic sheet carriers. The desired location of the carrier and endless band is preferably that shown in the drawings, but it will be understood that their positions may be reversed or otherwise changed from that shown in the drawings.

Another embodiment of the invention is shown in FIG. 8 of the drawings, and this is generally similar to the embodiment shown in FIGS. 1–7 as indicated by the application of identical reference numerals with a suffix *a* employed to designate like parts. It will be noted that the bottles **20***a* are secured to one another by the carrier device **30***a* having a construction identical to the carrier device shown in FIGS. 1–7 of the drawings. Carrier device **30***a* underlies the annular enlargements **24***a* at the upper end of the containers in the same manner as carrier device **30** in FIGS. 1–7 of the drawings, and is provided with a handle **40***a* of the type heretofore described. The distinguishing feature of this package is the fact that a second carrier device identified by numeral **60**, and specifically shown in FIG. 10 of the drawings, is employed in connection with carrier device **30***a* in preventing container damage. This carrier device **60** is generally similar to carrier **30***a* in the type of the material used, and in the number and location of the apertures **62**. The apertures **62** may be of any desired shape, but are shown in the drawings as having a square configuration with rounded corners. Carrier device **60** operates in the same manner as carrier devices **30** and **30***a* in that the material adjacent each of the apertures **62** is stretched and deformed to the shape of axially directed neck **64** when assembled to the containers. It should be noted, however, that the material adjacent each aperture **62** in the carrier **60** is provided with tab elements **66** which operate in the same manner as the legs **36** of the U-shaped portions **34** in FIGS. 1–7 of the drawings. The material surrounding each of the apertures **62** in the carrier **60** is preferably provided with at least a pair of such tab elements which are disposed at 90° from each other, each tab element being aligned with a tab element of an adjacent aperture as is shown in FIG. 10. The phantom lines in FIG. 10 illustrate additional tab elements within each of the apertures **62**.

When the carrier device **60** is inserted over the containers **20***a*, the material intermediate adjacent apertures **62** will be deflected to a substantially U-shaped configuration in the same manner as the portions **34** in FIGS. 1–7 of the drawings, and the tab elements **66** will serve as extensions of the legs **68** of this U-shaped portion **70** inter-

mediate adjacent containers. The tab elements **66** conform to the shape of the containers, and operate in conjunction with the legs **68** of the U-shaped portion **70** to resiliently urge the containers away from each other. This is an especially useful construction where the containers are not angularly disposed to each other as in the FIGS. 1–7 embodiment so as to effectively use the U-shaped portions.

Carrier device **60** can also be used with other types of plastic sheet carriers which engage beneath the rim of the bottle caps or closure members sealing off the open upper end of the containers. This embodiment of the invention is shown in FIGS. 11–12 of the drawings and is generally similar to the embodiments previously discussed as indicated by the application of identical reference numerals with the suffix *b* employed to designate like parts. Carrier device **60** is shown assembled to the containers adjacent their lower ends. For cooperation therewith, a carrier device designated **80** is provided, and has a series of annular elements **82** which are integrally joined to one another by the connecting webs **84**. Annular elements **82** are designed to underlie the rim portions of the closure members in the manner shown in FIGS. 11–12 of the drawings. The annular elements **82** are not stretched and deformed in the same manner as the material surrounding each of the apertures in the carriers **30**, **30***a* and **60**, and are only stretched over the closure members **28***b* without being deformed. It will be noted, however, that the package arrangement shown in FIGS. 11–12 is similar to the FIGS. 1–7 embodiment in that a portion of adjacent containers are positioned in engagement with each other. This is due to the fact that the distance between the centers of adjacent annular elements **82** in the carrier **80** is less than the distance between the centers of adjacent apertures **62** in the carrier **60** so as to cause portions of adjacent containers in the vicinity of the closure members **28** to abut one another. As a result, the carrier **60** as shown in FIG. 12 of the drawings will act through its U-shaped portions **70** and tab elements **66** to create forces F1 generally opposing forces F for urging the remaining or nonengaging portions of adjacent containers away from each other in the same manner as the U-shaped portion **34** in FIGS. 1–7 of the drawings.

An inspection of FIG. 9 of the drawings will reveal that the carrier **80** has an integral handle arrangement. A pair of finger members **86** extend from opposing connecting webs **84** of the carrier for interconnecting the handle strap **88** thereto. This arrangement provides a relatively strong, yet flexible handle strap which can be used for conveniently carrying the containers of the package.

In the FIG. 8 and FIGS. 11–12 embodiments, the carriers **30***a* and **80** respectively can be replaced by suitable rigid connector clips to hold the containers at predetermined distances from one another, and permit the carrier **60** to resiliently urge the containers away from each other. This is a slightly different approach to the FIGS. 1–7 embodiment wherein the carrier device **30** itself could be replaced by suitable connector clips which would cooperate with the endless band means in preventing undesirable movement of the containers toward each other.

From the foregoing, it will now be apparent that the present invention contemplates a novel and unique package which positively retains a plurality of containers in predetermined, substantially nonshifting positions relative to each other. In certain forms of the invention, portions of the containers are maintained in engagement with each other while remaining portions are resiliently maintained out of engagement with each other. In other forms of the invention, the containers may be maintained at predetermined distances from each other to prevent container breakage. Whether a pair of carrier devices or a carrier and an endless band is used, they may be easily assembled to the containers in a rapid manner, and yet the containers may be easily removed from the package when desired.

The specific examples of the invention as herein shown and described are to be understood as being illustrative only. Various changes in structure will no doubt occur to those skilled in the art and will be understood as forming a part of this invention insofar as they fall within the spirit and scope of the appended claims.

What is claimed is:

1. A package comprising at least one pair of adjacently positioned containers arranged in side by side relationship at predetermined distances from each other, carrier means assembled to said containers adjacent one end thereof for embracing and securing said containers thereto in positions generally corresponding to the initial container placement, means engaging said containers at positions spaced from said carrier means for angularly disposing said containers relative to one another and for positioning portions of adjacent containers in engagement with each other, at least one of said means having portions located intermediate adjacent containers for resiliently urging nonengaging container portions away from each other, and means for transporting said package.

2. A package comprising at least one pair of adjacently positioned containers arranged in side by side relationship and at predetermined distances from each other, first carrier means assembled to said containers adjacent one end thereof for embracing and securing said containers thereto in positions generally corresponding to the initial container placement, second carrier means engaging said containers at positions spaced from said first carrier means for angularly disposing said containers relative to one another while positioning portions of adjacent containers in abutting engagement, one of said carrier means having portions located intermediate adjacent containers for resiliently urging nonengaging container portions away from each other, and means for transporting said package.

3. A carrier package comprising at least one pair of adjacently positioned containers having annular enlargements adjacent opposite ends thereof and arranged in side by side substantially abutting relationship, a substantially unsupported sheet of stretchable plastic material having a plurality of constrictive apertures therein corresponding to the number of containers in said package and spaced predetermined distances from each other to enable the material adjacent each aperture to stretch for securing said containers to said sheet in positions generally corresponding to the initial container placement, said sheet of stretchable plastic material being positioned adjacent the annular enlargements on one end of said containers when assembled thereto, endless band means surrounding said containers as a group in tight fitting engagement with the sides thereof to prevent lateral displacement of said containers at points remote from said stretchable sheet of plastic material, said endless band means also positioning the annular enlargements of adjacent containers at an opposite end from said stretchable sheet of plastic material in engagement with each other whereby to angularly dispose said containers relative to each other and cause the material intermediate adjacent apertures in the stretchable sheet of plastic material to resiliently urge said containers away from each other, and means for transporting the package.

4. The carrier package as defined in claim **3** wherein upon the assembly of the containers to said stretchable sheet of plastic material, the material adjacent each aperture is stretched and deformed to the shape of axially directed necks, and the material intermediate adjacent apertures is deflected to a substantially U-shaped configuration.

5. The carrier package as defined in claim **3** wherein each of the containers is provided with an annular enlargement adjacent at least one end thereof, the axially directed necks surrounding each aperture adapted to underlie the annular enlargements adjacent one end of said containers.

6. The carrier package as defined in claim 3 wherein said means for transporting the package comprises a handle strap operatively associated with said stretchable sheet of plastic material and having at least a portion thereof positioned above the uppermost extremities of said containers for manual grasping thereof.

7. A package comprising at least one pair of adjacently positioned containers arranged in side by side substantially abutting relationship, first and second carrier means assembled to said containers at opposite ends thereof for embracing and securing said containers together as a group, one of said carrier means being in the form of a substantially unsupported sheet of resilient, elastic and deformable plastic material having constrictive apertures formed therein corresponding in number to the containers in said package, the material surrounding each of said constrictive apertures being stretched and deformed to the shape of axially directed necks upon the insertion of the containers through said apertures, the material intermediate adjacent apertures assuming a substantially U-shaped configuration as the material adjacent each aperture is stretched to the shape of axially directed necks, each U-shaped portion being provided with generally opposing tab elements which cooperate therewith in resiliently urging said containers out of engagement with each other, and means for transporting the package.

8. The package as defined in claim 7 wherein one of said carrier means is provided with an integral handle for carrying the containers.

9. The package as defined in claim 7 wherein one of said carrier means is configured to position portions of adjacent containers in engagement with each other and permit said U-shaped portions and tab elements in one of said carrier means to resiliently urge the nonengaging container portions away from each other.

10. A beverage unit or the like comprising a plurality of adjacently positioned containers of predetermined shape and having annular enlargements adjacent opposite ends thereof, said containers arranged in side by side relationship and spaced predetermined distances from each other, a sheet of stretchable plastic material being provided with a plurality of generally oppositely arranged apertures therein and spaced sufficient distances from each other to enable the material adjacent each of the apertures to stretch and resiliently grip the containers upon being axially inserted through said apertures while maintaining said containers spaced from each other, said sheet of stretchable plastic material being positioned adjacent to and underlying the annular enlargements on one end of said containers, means for encircling said containers in tight fitting engagement therewith and for positioning the annular enlargements at an opposite end of said containers in engagement with each other whereby to angularly dispose said containers relative to each other and permit the material intermediate adjacent apertures in said sheet to urge said containers away from each other, and means for transporting the containers.

11. A package comprising a plurality of containers or the like having peripheral enlargements on at least one end thereof arranged in side by side substantially abutting and parallel relation which are secured together as a unit by a substantially unsupported sheet of plastic material, said sheet of plastic material being resilient, deformable, and elastic and having a plurality of apertures therein, each of said apertures having a peripheral measurement less than the periphery of the corresponding container with which it is adapted to be associated, the material defining the margin of each aperture being circumferentially continuous and uninterrupted, each of said apertures having a plurality of tabs spaced from each other around and extending inwardly from the uninterrupted margin of each aperture, said tabs extending inwardly at least a distance equal to the peripheral measurement of each tab at its juncture with the margin of said aperture whereby when said containers are inserted through the apertures from a given direction, the material of the sheet adjacent thereto stretches and deforms to form circumferentially continuous lips embracing each of said containers beneath said peripheral enlargements and the tabs associated with each aperture are positioned to rest upon the outer peripheral surface of said containers in conforming relationship to prevent engagement of adjacent containers secured in the sheet and containers adjacently positioned to said package, each of said tab elements also serving as extensions of the circumferentially continuous lips and cooperating with a generally opposed tab element associated with the margin of an adjacent aperture to resiliently urge containers within the sheet away from each other.

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Color Photoprint of Plural Article Package Units in Display Arrangement.

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