United States Patent [19]

Cunningham

[11] **3,837,478**

[45] **Sept. 24, 1974**

[54] **STRETCHABLE PACKAGING DEVICE FOR CONTAINERS**

[75] Inventor: **Ernest R. Cunningham,** Libertyville, Ill.

[73] Assignee: **Grip-Pak, Inc.,** St. Louis, Mo.

[22] Filed: **July 29, 1971**

[21] Appl. No.: **167,385**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 27,854, April 30, 1970, abandoned.

[52] **U.S. Cl.**..... **206/427,** 206/45.33, 206/820, 294/87.2

[51] **Int. Cl.**.. **B65d 65/04,** B65d 65/16, B65d 75/26

[58] **Field of Search**..... 150/52 R; 206/45.33, 46 R, 206/46 FR, 65 C, 65 E, 65 S; 220/112–114, 116; 229/87 R, 89, 52 B, DIG. 12; 294/87.2

[56] **References Cited**

UNITED STATES PATENTS

2,884,328	4/1959	Johnson	229/DIG. 12
3,400,810	9/1968	Makowski	206/65 C
3,441,129	4/1969	Johansen et al.	229/87 R X
3,447,675	6/1969	Kirby	206/65 S
3,460,671	8/1969	Harm	206/65 S
3,460,863	8/1969	Schaich	206/65 E UX
3,557,516	1/1971	Brandt	206/65 S UX
3,570,663	3/1971	Cunningham	206/65 E
3,653,504	4/1972	Saumsiegle	206/65 E
3,664,498	5/1972	Dulmage	206/45.33 X

FOREIGN PATENTS OR APPLICATIONS

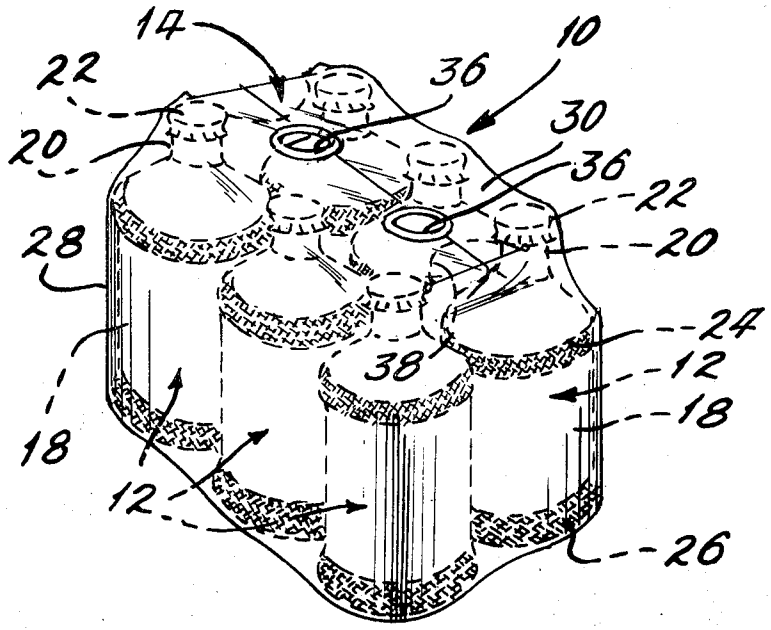
1,814,100	6/1970	Germany	229/DIG. 12

Primary Examiner—William I. Price
Assistant Examiner—Steven E. Lipman
Attorney, Agent, or Firm—Michael Kovac

[57] **ABSTRACT**

Stretchable and elastic packaging devices are disclosed herein wherein the packaging devices include a wraparound skirt adapted to be stretch mounted in elastic embracing and gripping engagement relative to articles, and an integral top adapted to overlie the articles when the packaging device is assembled thereto.

9 Claims, 40 Drawing Figures



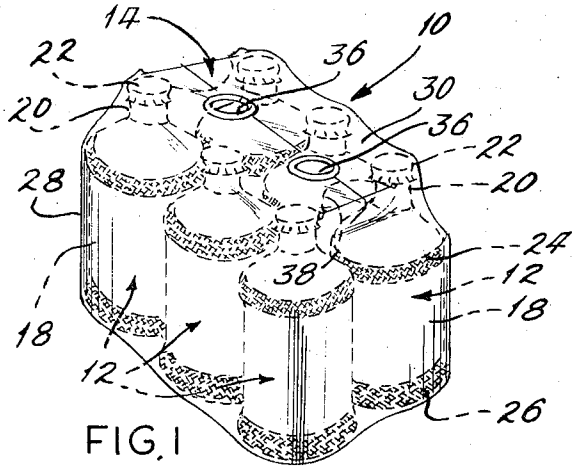


FIG. 1

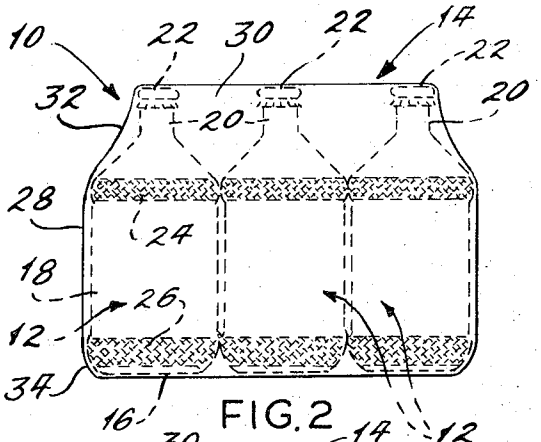


FIG. 2

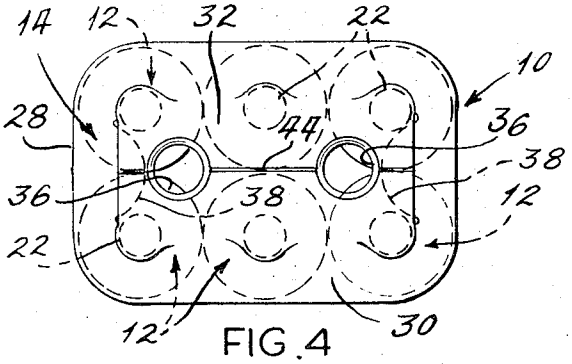


FIG. 4

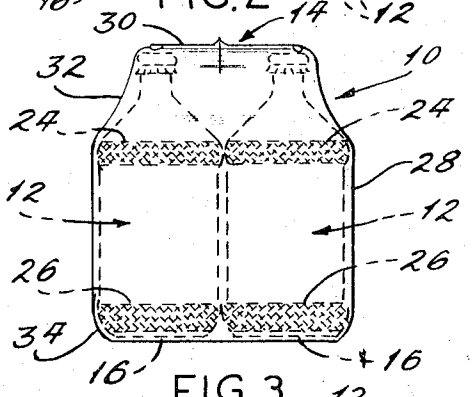


FIG. 3

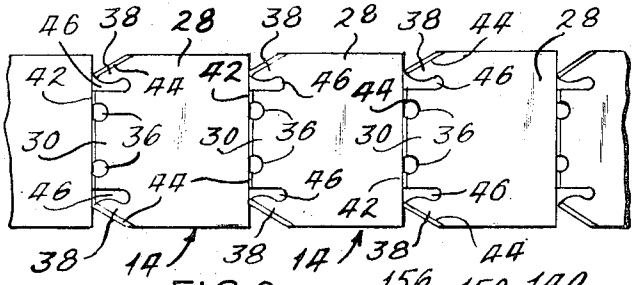


FIG. 6

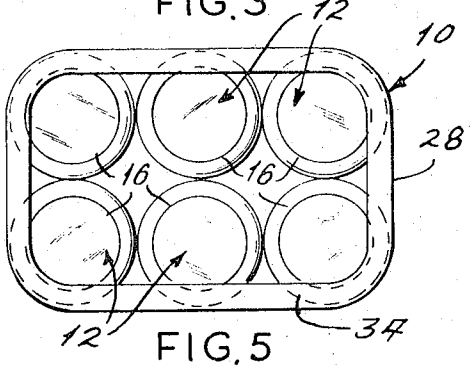


FIG. 5

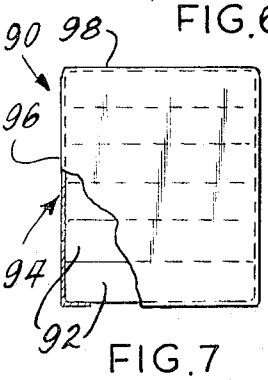


FIG. 7

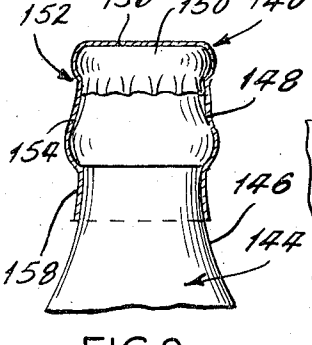


FIG. 9

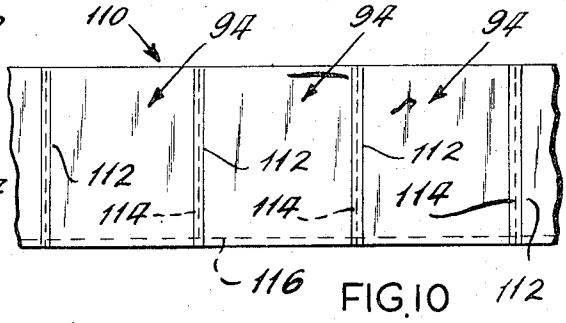


FIG. 10

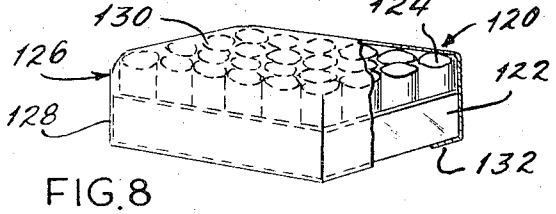


FIG. 8

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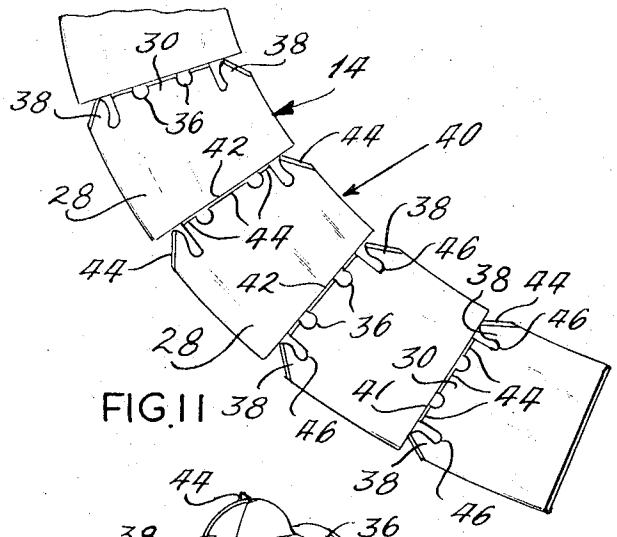


FIG.11

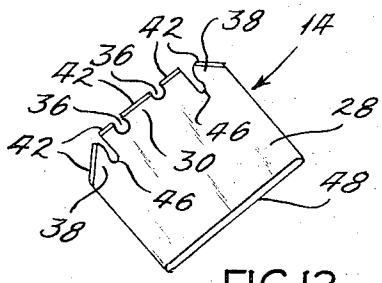


FIG.12

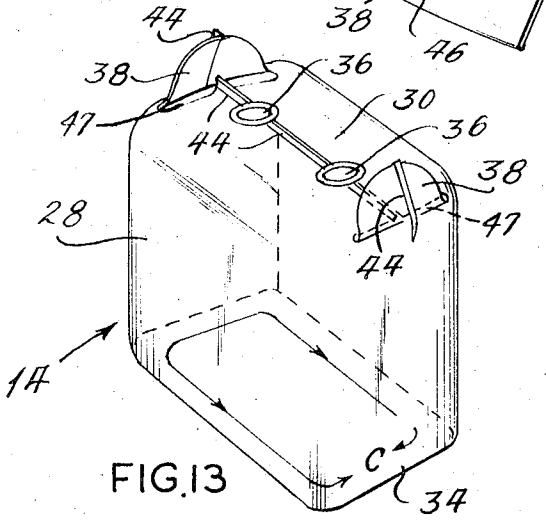


FIG.13

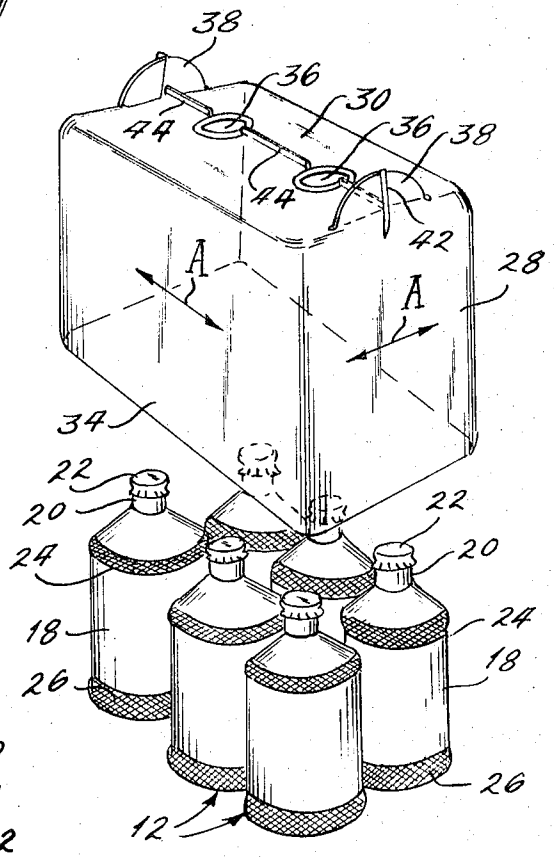


FIG.14

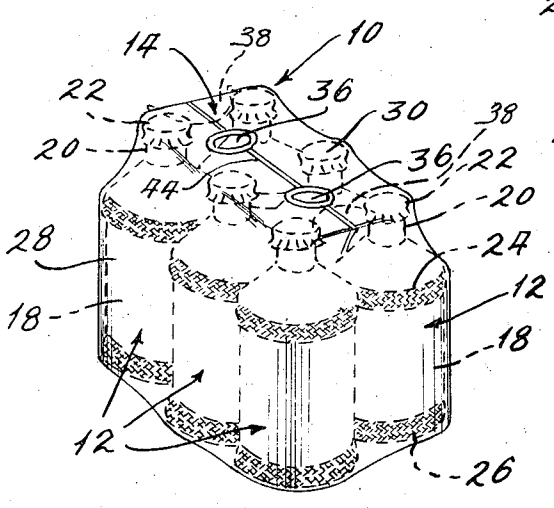
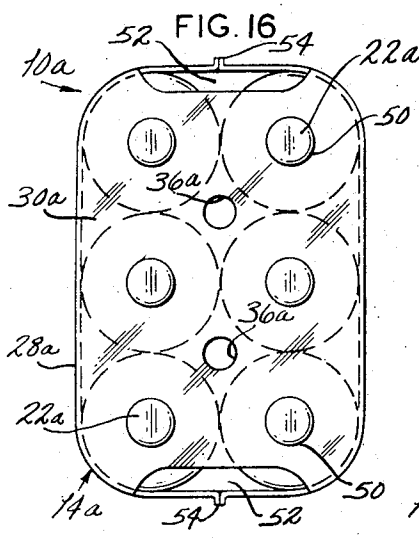
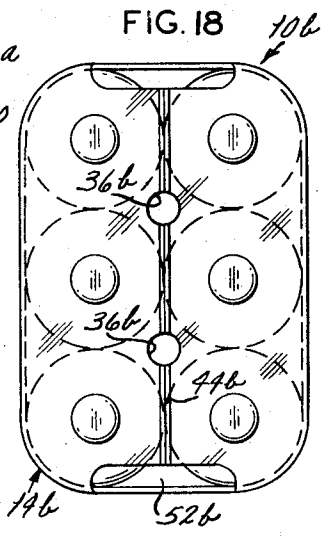
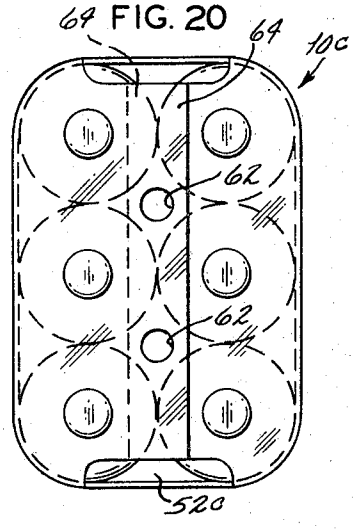


FIG.15

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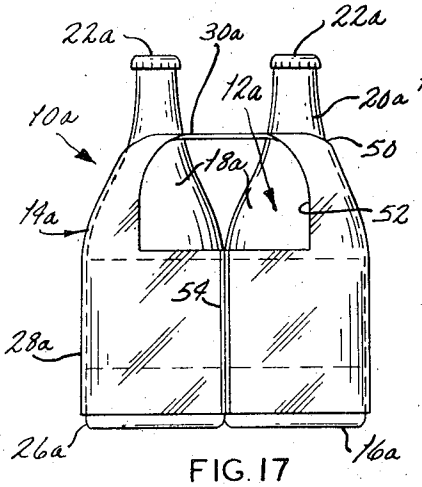


FIG. 17

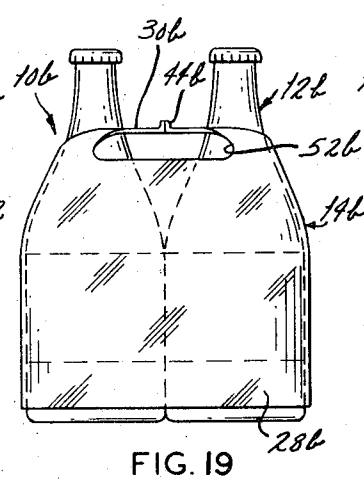


FIG. 19

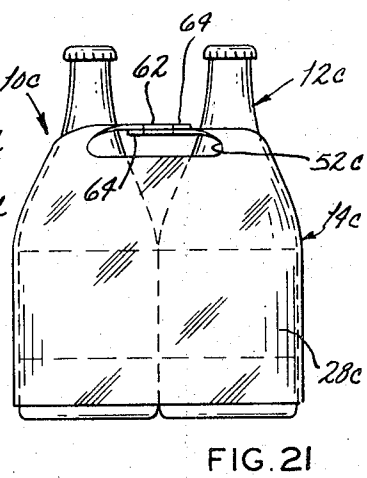


FIG. 21

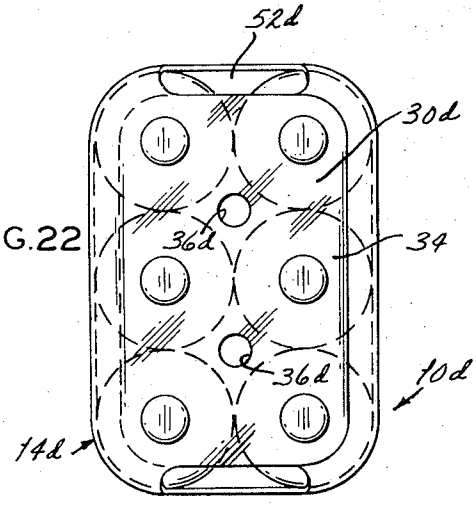


FIG. 22

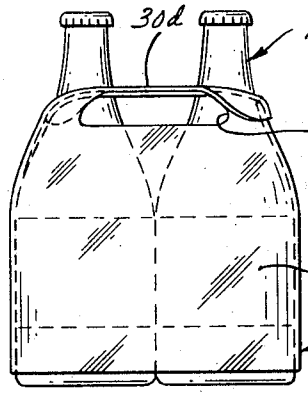


FIG. 23

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FIG. 24

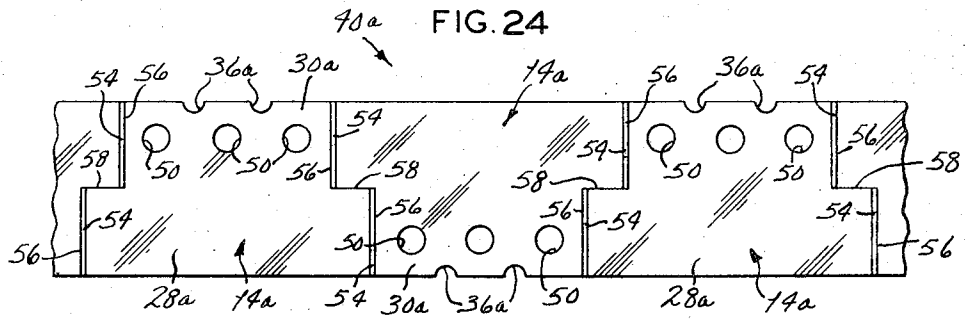


FIG. 25

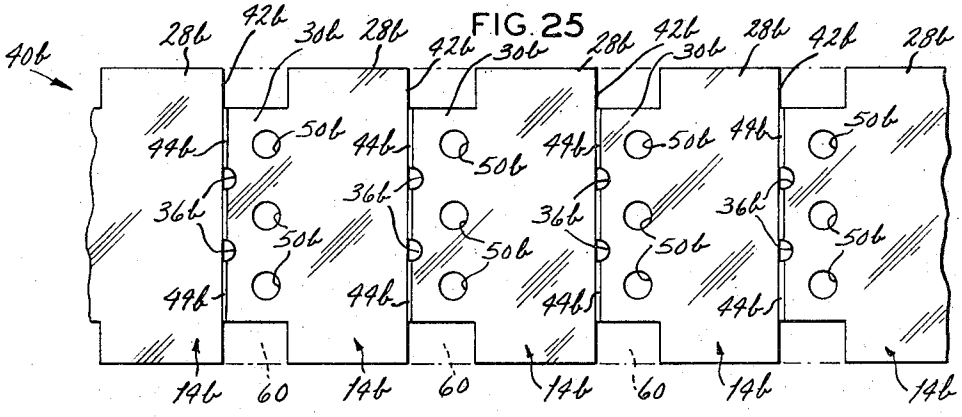


FIG. 26

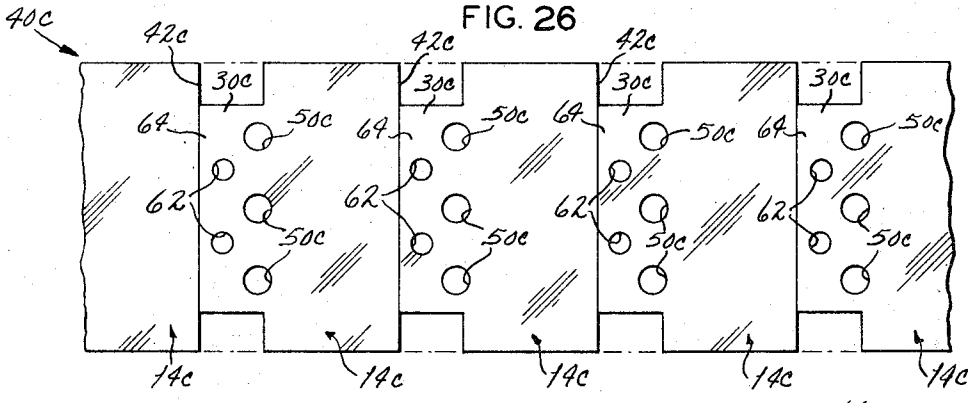
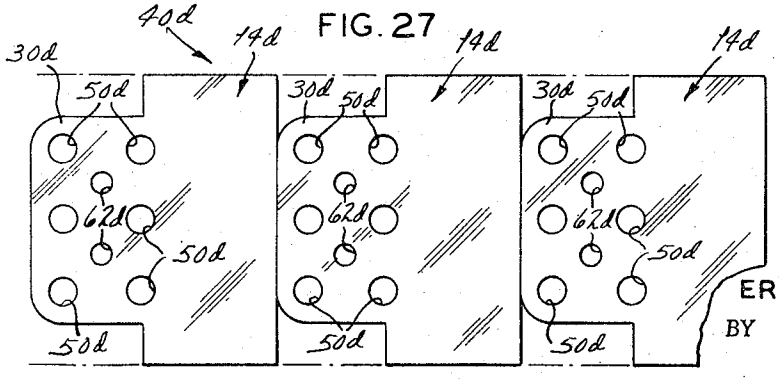


FIG. 27



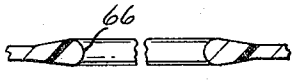


FIG. 28

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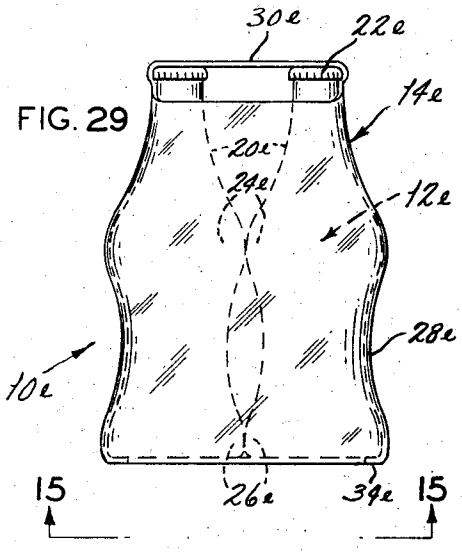


FIG. 29

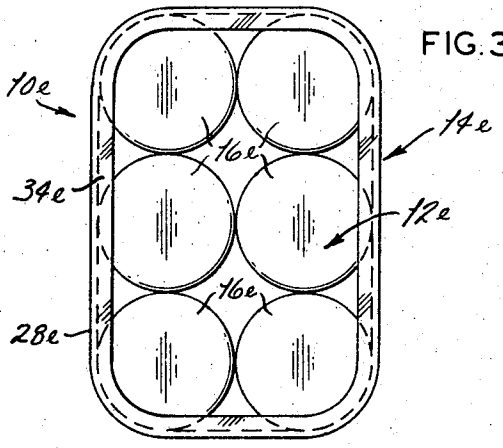


FIG. 30

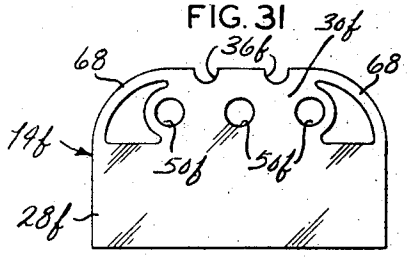


FIG. 31

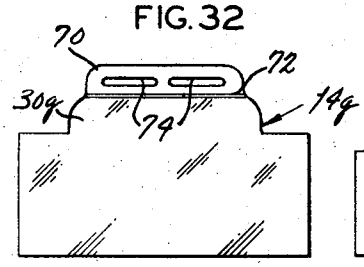


FIG. 32

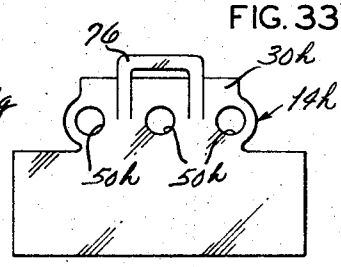


FIG. 33

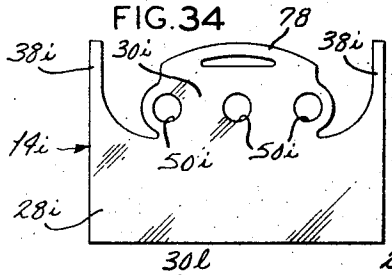


FIG. 34

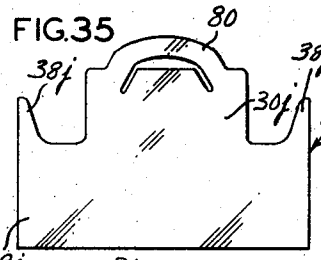


FIG. 35

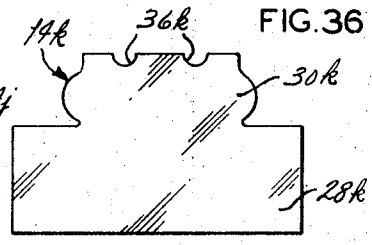


FIG. 36

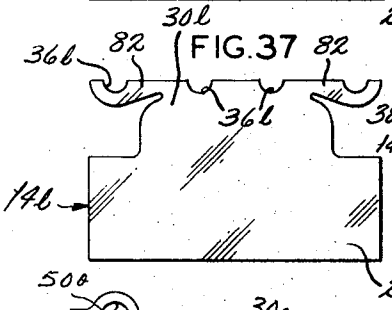


FIG. 37

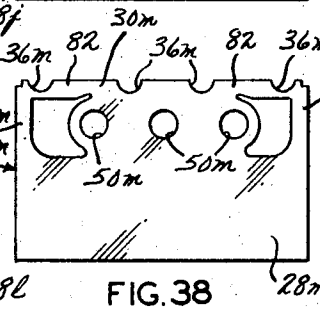


FIG. 38

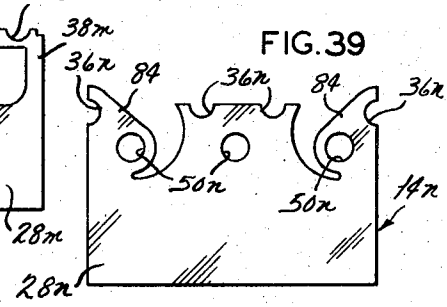


FIG. 39

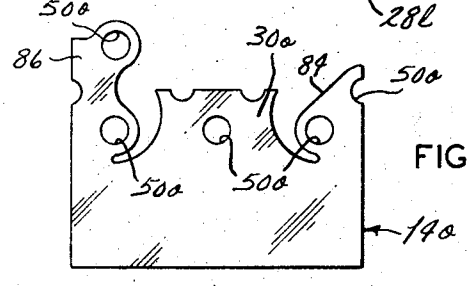


FIG. 40

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STRETCHABLE PACKAGING DEVICE FOR CONTAINERS

The present invention is a continuation-in-part of my application Ser. No. 27,854 filed Apr. 30, 1970, now abandoned.

SUMMARY OF THE INVENTION

The present invention is related to the multipackaging industry where a plurality of articles, such as non-returnable bottles, are held together as a group as well as to the general packaging industry where overwraps, tamperproof closures and the like are used.

The multipackaging industry changed significantly in scope with the introduction of plastic sheet carrier devices of the type represented by U.S. Pat. No. 2,874,835. Such packaging devices are used to multipackage canned beverage and food products usually in groups of six to form the well known "6-pack". Up to the time of the plastic sheet carriers' introduction in the late **1950**'s, the multipackaging of canned products was accomplished through use of paperboard wrap-around carrier devices, which, when compared with the many advantages afforded by plastic sheet carrier devices, could not effectively compete with it and thus, have become less popular. Among the many advantages of plastic sheet carrier devices over paperboard carrier devices for canned products include the lower cost of materials because less material is utilized, the lower cost of manufacture and assembly due to the adaption of such carrier devices to high speed manufacturing and assembly equipment, the ease of removal of the carrier devices from containers and the ability to quickly refrigerate the contents of the containers while held in the plastic sheet carrier devices.

Following the successful development of plastic sheet carrier devices and assembling techniques therefor, efforts have been made to develop a plastic carrier device for non-returnable glass bottles and the like. Although there has been a great desire to create such a plastic carrier device for nonreturnable bottles and the like, the unavailability of such devices in the market today makes it apparent that the desire has not met with success. As a result, paperboard carrier devices are still used to multipackage non-returnable bottles.

There are a number of factors which have been established as general criteria for a commercial plastic multi-pack carrier device for bottles and the like. In addition to the requirement that a minimum amount of material be utilized in conjunction with the low cost of manufacture and assembly of carrier devices to bottles and the like, other factors have included the adaptability of plastic carrier devices for bottles and the like to economical and convenient storage and shipping, the availability of advertising decoration for the multipackage other than the bottles themselves, and the desire to provide light inhibiting characteristics and protection against glass breakage both within and without the multi-package.

The plastic-multi-pack carrier devices for bottles and the like which have been developed up to this point in time have achieved some of the above criteria as, for example, will be seen by comparing U.S. Pat. Nos. 3,084,792; 3,330,408 and 3,460,863. However, no prior art plastic multipack carrier device has been capable of satisfying all of the criteria identified above. It is believed that any commercially successful plastic multi-pack carrier device will have to meet substantially all, if not all of the above criteria in order to be used.

It is an object of the present invention to provide a new and improved plastic multi-pack carrier device for articles such as non-returnable bottles and the like which functions to provide advantages heretofore unobtainable from prior art devices.

More specifically, it is an object of the present invention to provide a plastic multi-pack carrier device for articles such as non-returnable bottles and the like which: relatively utilizes less material and has a lower manufacturing and assembly cost than corresponding paperboard counterparts, can be stored and shipped in a convenient and economical manner, is susceptible to advertising decoration, can provide light inhibiting characteristics, and protects the bottles both within and without the package against damage.

The present invention is also directed to packaging devices such as overwraps for stacked containers, boxes and the like and tamperproof closure devices for bottles, jars and the like. Overwraps for stacked boxes and containers can provide an effective means for transporting the containers while the containers are kept sanitary and moisture-proof in a warehouse. At present, overwraps for stacked boxes or containers are not used to any great extent since it is difficult to economically and effectively fold and assemble a plastic sheet around stacked boxed or containers.

Insofar as tamperproof closures are concerned, there are instances where it is desirable to provide a tamperproof closure or cover over the primary closure device and adjacent neck section of the container to give assurance to the consumer that the contents of the product have not been changed or sampled. At the present time, such tamperproof closure devices are in the form of heat or chemically shrunk devices which make the processes for applying such closures cumbersome, complicated and, in the case of chemically shrunk devices, unnecessarily messy. Product manufacturers have long sought a technique which can compete effectively with existing heat shrunk or chemically shrunk tamperproof closure devices while avoiding the aforementioned assembly problems.

It is, therefore, another object of the present invention to provide a new and improved overwrap for stacked boxes, containers, and the like and a new and improved tamperproof closure, both of which can be quickly applied to articles with which they are to be used and easily removed from the articles when desired.

In order to make plastic multi-pack carrier devices, overwraps, plastic cover devices and the like available in the marketplace, the present invention also discloses new techniques for manufacturing such packaging devices and for assembling packaging devices to one or more articles, as the case may be.

Specifically, it is an object of the present invention to provide high speed, low cost manufacture of packaging devices such as plastic multi-pack carrier devices for bottles and the like, overwraps and tamperproof closure devices by new and improved techniques.

Another object of the present invention is to provide a simple and effective high speed assembly technique for assembling packaging devices of the aforementioned type to an article or articles.

These and other objects and advantages of the present invention are obtained by the provision of the packaging device which is adapted to be associated to at least one article, such packaging device being made from stretchable and elastic plastic material and including a wraparound skirt and an integral top, the wraparound skirt being adapted to be mounted and stretched in elastic gripping engagement over at least said one article while the integral top overlies the upper end of at least said one article. The packaging device, which may be in the form of a bottle carrier device, overwrap or tamperproof closure device, is manufactured by selective die-cutting and heat sealing techniques as an interconnected strip of devices, and can be assembled to an article or articles by stretching thereof either prior to or after separation of individual devices from the interconnected strip of devices.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a container package including a plurality of non-returnable bottles and a plastic multi-pack carrier device which is constructed in accordance with the teachings of the present invention;

FIG. **2** is a side elevational view of the container package shown in FIG. **1** of the drawings;

FIG. **3** is an end elevational view of the container package shown in FIG. **1** of the drawings;

FIG. **4** is a top plan view of the container package shown in FIG. **1** of the drawings;

FIG. **5** is a bottom plan view of the container package shown in FIG. **1** of the drawings;

FIG. **6** is a fragmentary top plan view of an interconnected strip of plastic multi-pack carrier devices of the type utilized in the container package of FIG. **1**;

FIG. **7** is a fragmentary side elevational view, partially in section, of a plurality of containers or boxes arranged in a vertical stack which are held together by an overwrap device constructed in accordance with the teachings of the present invention;

FIG. **8** is a fragmentary perspective view, partially in section, of a plurality of canned products supported within a box or carton and an overwrap device which closes the canned products and carton;

FIG. **9** is a fragmentary side elevational view, partially in section, of a bottle with a primary closure or cap, and a tamperproof closure device constructed in accordance with the teachings of the present invention which is mounted over the primary closure or cap and a portion of the bottle;

FIG. **10** is a fragmentary top plan view of a strip of interconnected tamperproof closure devices of the type illustrated in FIG. **9** which also depicts the method of manufacturing the tamperproof closure or cover devices;

FIG. **11** is a fragmentary perspective view of an interconnected strip of plastic multi-pack carrier devices of the type used in conjunction with the container package illustrated in FIG. **1** of the drawings;

FIG. **12** is a perspective view of an individual plastic multi-pack carrier device which has been separated from the interconnected strip of carrier devices depicted in FIG. **11** prior to assembly to articles such as non-returnable bottles;

FIG. **13** is a perspective view of the plastic multi-pack carrier device of FIG. **12** which has been opened up from the flat or unopened position of FIG. **12**;

FIG. **14** is an exploded perspective view illustrating the technique of expanding the plastic multi-pack carrier device to a predetermined dimension greater than the circumference of the group of containers with which it is to be associated prior to telescopically assembling the carrier device and bottles to each other;

FIG. **15** is a perspective view of a container package including a plastic multi-pack carrier device and bottles which have been assembled by following the steps or techniques illustrated by FIGS. **11–14** of the drawings;

FIG. **16** is a top plan view of the container package illustrating another form of multi-pack carrier device which comes within the scope of the present invention;

FIG. **17** is an end elevational view of the container package including the plastic multi-pack carrier device of FIG. **16**;

FIG. **18** is a top plan view of a container package exhibiting another form of plastic multi-pack carrier device of the present invention;

FIG. **19** is an end elevational view of the container package and carrier device depicted in FIG. **18**;

FIG. **20** is a top plan view of a container package which exhibits yet another form of plastic multi-pack carrier device of the present invention;

FIG. **21** is an end elevational view of the container package and plastic multi-pack carrier device of FIG. **20**;

FIG. **22** is a top plan view of a container package which shows yet another form of plastic multi-pack carrier device of the present invention;

FIG. **23** is an end elevational view of the container package and plastic multi-pack carrier device of FIG. **22**;

FIG. **24** is a fragmentary top plan view of an interconnected strip of plastic multi-pack carrier devices of the type utilized in the container package illustrated in FIGS. **16–17** of the drawings, adjacent carrier devices in the interconnected strip being oppositely directed to each other and arranged transversely of the strip;

FIG. **25** is a fragmentary top plan view of an interconnected strip of plastic multi-pack carrier devices used in the container package depicted in FIGS. **18–19** of the drawings, the carriers in the interconnected strip being arranged longitudinally of the strip;

FIG. **26** is a fragmentary top plan view of an interconnected strip of plastic multi-pack carrier devices of the type used in the container package illustrated in FIGS. **20–21** of the drawings, adjacent carriers in the strip being aligned longitudinally of the strip;

FIG. **27** is a fragmentary top plan view of an interconnected strip of plastic multi-pack carrier devices of the type used in the container package of FIGS. **22–23**, each carrier device in the strip being longitudinally aligned with the strip;

FIG. **28** is an enlarged fragmentary sectional view of a thickened finger hole gripping means which may be used with one or more container packages herein illustrated;

FIG. **29** is a said elevational view of a container package with a plastic multi-pack carrier device in yet another embodiment of the present invention;

FIG. **30** is a bottom plan view of the container package with the plastic multi-pack carrier of FIG. **29**;

FIG. **31** is a top plan view of a plastic multi-pack carrier designed with an end handle at opposite ends thereof;

FIG. **32** is a top plan view of a plastic multi-pack carrier designed with an integral top handle configuration, the carrier itself having no apertures to receive the necks of necked containers therein;

FIG. **33** is a top plan view of a plastic multi-pack carrier designed with an integral top handle of another configuration;

FIG. **34** is a top plan view of a plastic multi-pack carrier designed having another form of top handle configuration with light occluding tab means at opposite ends of the carrier;

FIG. **35** is a top plan view of a plastic multi-pack carrier designed with yet another form of top handle configuration and light occluding tab means, but having no apertures therein to receive the necks of necked containers;

FIG. **36** is a top plan view of a plastic multi-pack carrier design with finger hole gripping means and no apertures to receive the necks of the necked containers therein;

FIG. **37** is a top plan view of a plastic multi-pack carrier design which includes reinforced finger hole gripping means, but without the apertures to receive the necks of necked containers therein;

FIG. **38** is a top plan view of a plastic multi-pack carrier design with both reinforced finger hole gripping means and light occluding tab means;

FIG. **39** is a top plan view of a plastic multi-pack carrier design with combined finger hole reinforcement and light occluding tab means; and

FIG. **40** is a top plan view of a plastic multi-pack carrier design with combined reinforcement of the finger hole gripping means and bottle neck apertures as well as the light occluding tabs.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The packaging device of the present invention is made from stretchable and elastic plastic material in order that the packaging device can be extended or drawn out by stretching, with or without deformation thereof, while also permitting the packaging device to be spontaneously returned to or toward its former size or shape by elasticity after being stretched and/or distorted. While the invention is not restricted to a particular type of plastic material, it has been found that one preferred type of material is low density polyethylene. This material permits the packaging device to be stretched and/or deformed over an article or articles while permitting the elastomeric characteristics of the material to spring back or tend to return to its former position into elastic gripping engagement relative to the article or articles. As used herein, therefore, a packaging device made of stretchable and elastic plastic material is to be given the above meaning.

Reference is now made to the drawings for a specific description of the present invention.

The first embodiment to be described is illustrated in FIGS. **1–5** of the drawings. There it will be seen that a container package **10** is shown which includes a plurality of glass bottles all of which are held together by the plastic multi-pack carrier device **14.** Each of the bottles **12** has a bottom or base **16,** a body or side wall portion **18,** a reduced neck portion **20,** and a crown or cap **22** which is crimped or placed over the open upper end (not shown) of the reduced neck portion **20** to which the crown or cap **22** is applied. The body or side wall portion **18** of each bottle **12** is provided with upper and lower annular enlargements **24, 26** respectively which are thickened or reinforcing segments formed on each bottle **12** at locations where the bottles **12** would be subject to the most contact between the bottles themselves and other elements. While the annular enlargements **24, 26** are not required in forming a container package **10,** the annular enlargements **24, 26** for each bottle **12** are desirable as will become apparent.

The plastic multi-pack carrier device **14** of the present invention is made from stretchable and elastic plastic material, such as polyethylene, and includes a wraparound skirt **28** and a top **30** integrally connected therewith. As best seen in FIGS. **1–5** of the drawings, the carrier device **14** conformably engages or is mounted in contour fitting engagement relative to the plurality of bottles **12.** Specifically, the wraparound skirt **28** is configured, arranged and dimensioned relative to the group of containers **12** in order that it can be stretched mounted thereover in elastic embracing and gripping engagement relative to at least a portion of the exposed or outer body portions **18** of the containers **12** arranged as a group. It will also be noted that the upper area **32** of the wraparound skirt **28** "necks-in" in the vicinity of the reduced necks **20** of the bottles as well as forms a tight fitting scalloped configuration (see FIG. **4**) in the vicinity of the crowns or caps **22** of the bottles **12.** The wraparound skirt **28** further includes a skirt extension **34** which conformably engages the exposed or outer portions of the lower annular enlargements **26** of the bottles **12** while also underlying and engaging at least a portion of the bottoms or bases **16** of the containers **12.** When a plastic multipack carrier device **14** is stretch mounted over bottles **12** such as illustrated in FIGS. **1–5** of the drawings, the bottles **12** will be held together as a group within container package **10.** Specifically, wraparound skirt **28** of the carrier device **12** causes the upper and lower annular enlargements **24, 26** of each bottle **12** to be brought into abutting engagement with one another so that bottles **12** are protected against any substantial rattling against one another within the container package **10.** The bottles **12** cannot move laterally because of the wraparound skirt **28** of the carrier device **14** being stretch mounted in tight fitting engagement relative to the body portion **18.** Moreover, the upper area **32** and skirt extension **34** of the wraparound skirt **28** engage upper and lower sections of the bottles **12,** as has been described, and prevent any substantial relative upward or downward movement of the bottles **12** to each other. Thus, the bottles **12** are restricted from substantial movement in the container package **10,** leaving only corresponding upper and lower annular enlargements **24, 26** respectively of adjacent bottles **12** to be in contact with one another in the container package **10.** This arrangement limits the possibility of the bottles causing breakage against one another within the container package **10.**

Further, because the wraparound skirt **28** and integral top **30** substantially envelop all but a portion of the bases or bottoms of the bottles **12,** any shattering or breaking of the bottles **12** within the container package **10** will be confined within the container package **10,** thus reducing the possibility of injury caused by flying

glass debris. It is expected that, if desired, the skirt extension **34** of the wraparound skirt **28** can be extended even further to provide total encapsulation of the bottles **12** within the container package **10.** In accomplishing this embodiment of the invention, the extended area of the skirt extension **34** may require suitable folding and/or heat sealing of overlapped areas thereof.

It will be appreciated that when the plastic multi-pack carrier device **14** is stretch mounted over the containers **12,** the wraparound skirt **28,** while stretched beyond its original shape, is not stretched beyond its modulus of elasticity. Thus, because the material has sufficient elasticity, the skirt seeks to spring back and return to its original shape; however, in so doing, it elastically embraces and grips the containers **12** in the manner described above. Where material such as low density polyethylene is used, it is contemplated that while some deformation of the carrier probably will occur, it will not be of a magnitude to restrict or interfere with the elastomeric characteristics of the carrier in the wraparound skirt **28** to interfere with its tendency to spring back or return to its original shape. It is conceivable as well that a carrier material can be compounded which provides stretching of the wraparound skirt **28** without deformation and with the elastomeric characteristics necessary to achieve the elastic embracing and gripping engagement of the bottles **12.**

In order to permit transporting or carrying of the container package **10,** the integral top **30** of the carrier device is positioned above the crowns or caps **22** of the bottles **12** and is provided with finger hole gripping means **36** which are commonly used in the multipackaging industry. The finger holes **36** are preferably provided with reinforced or strengthened peripheries, as will be discussed hereafter, to prevent ripping or tearing of the plastic material top **30** when the container package **10** is carried by use of finger hole gripping means **36.**

The carrier device **14** also may be provided with light occluding tab means **38** at opposite ends of the package which are integrally connected to the wraparound skirt **28** and adapted to be folded into openings, at opposite ends of the package, and frictionally retained by the undersurface of the integral top **30.** The specific construction of the light occluding tab means **38** and the manner in which they are folded relative to the container package **10** will become better understood from the discussion that is to follow in connection with the manufacture of carrier devices **14** and their assembly relative to bottles **12.** For present purposes, it will suffice to say that the carrier device **14,** by reason of the wraparound skirt **28** and integral top **30,** together with light occluding tabs **38,** can substantially inhibit light from gaining access to the interior of the package, providing that the particular material of which the carrier device **14** is made also has light inhibiting characteristics. The container package **10** thus can be used for packaging products such as beer, where the producer deems it important that light access to the interior of the package is substantially restricted. Where light inhibition is not a factor, the carrier device **14** can be made of a transparent or semi-transparent material in order to expose labels (not shown) which may be attached or printed on the bottles **12.** Alternatively, advertising or other identifying indicia can be printed on the wraparound skirt **28,** integral top **30,** and/or skirt extension **34,** preferably prior to assembling the carrier devices to bottles **12** as will become apparent.

In order to remove the bottles **12** from the carrier **14,** a tear strip feature (not shown) is advantageously employed to permit ripping or tearing of the wraparound skirt **28** and/or integral top **30.** Since tear strip features are common expedients, a specific description thereof is believed to be unnecessary.

Since the plastic multi-pack carrier device **14** is self conforming or contour fitting relative to a group of articles such as bottles **12,** an important advantage is obtained in that a plastic multi-pack carrier device **14** is capable of being used with similar articles of different size. For example, it is well known that beverage bottles are manufactured in quite a number of different sizes and shapes. It is contemplated that a plastic multi-pack carrier **14** of particular size and shape can conform or adapt itself to a variety of different bottle shapes within the limits defined for the size and shape of the multi-pack carrier, and its stretchability and elastomeric characteristics. Through suitable empirical testing, a predetermined number of carriers can be designed to accommodate various bottle sizes. This is a distinct advantage both over other plastic and paperboard bottle carrier designs which do not permit the adaptability of the carrier to different bottle sizes.

Reference is now made to FIGS. **6** and **11–15** of the drawings for a specific discussion of the methods of producing carrier devices **14** in an interconnected strip **40** of carrier devices **14** and for thereafter assembling the carrier device **14** to articles such as bottles. It will be understood that the carrier devices **14** are generally manufactured at one location by a carrier manufacturer and then shipped to various beverage and bottling companies for assembly of the carrier devices **14** to bottles. Accordingly, it is desirable that the carrier device **14** be manufactured as an interconnected strip **40** of carrier devices **14** in order that the strip can be suitably wound about a carrier reel for storage and shipping to the beverage or bottling company.

As best seen in FIGS. **6** and **11,** the interconnected strip **40** includes a plurality of carrier devices **14** each having a wraparound skirt **28** and a folded-in-half top **30** integrally connected therewith. Light occluding tab means **38** extend from the wraparound skirt at opposite ends of each carrier device **14.** In the interconnected strip of carriers **14,** the wraparound skirt **28,** in the form of an endless tube, is flattened since this shape not only facilitates manufacture of the carrier devices **14** as an interconnected strip **40,** but also enables the interconnected strip **40** to be wrapped about a reel for storage and shipping purposes. The integral top **30** is similarly flattened and assumes the shape of an inverted U-shaped configuration when flattened.

In manufacturing an interconnected strip **40** of carrier devices **14,** the individual carrier devices **14** are formed by selective die-cutting and heat sealing a flattened plastic tube to provide a one-piece device which includes wraparound skirt **28,** integral top **30** with finger holes **36,** light occluding tabs **38,** and, if desired, skirt extension **34.** The flattened tubing may be either extruded and blown to the shape of lay-flat or flattened tubing or alternatively, opposite edges of an extruded plastic sheet can be attached to form the lay-flat or flattened tubing.

In order to form the individual carriers **14,** a cutting die (not shown) having a shape corresponding to the

configuration desired. such as the shape of the light occluding tabs **38,** the integral top **30** and the finger holes **36** in FIGS. **6** and **11,** is selectively brought into contact with the flattened or lay-flat tubing at desired intervals to produce the desired shape. The cutting die also preferably forms a frangible or weakened connection **42** between adjacent carriers **14** for subsequent separation and assembly of individual carrier devices to articles such as bottles.

In order to complete the manufacture of individual carrier devices **14** in the interconnected strip **40,** it is necessary to heat seal or otherwise attach the upper edges of the light occluding tabs **38** and the integral top **30** as at **44** for the purpose of attaching the precut unattached sections on opposite sides of the flattened or lay-flat tube to each other to form the desired configuration. It is to be noted that in the area **46** of each carrier device between the light occluding tab means **38** and the integral top **30,** there remains unattached an unattached portion **46** in order to permit opening up of the carrier device **14** when assembled to articles. It will also be appreciated that the unattached portions **46** of each carrier device **14,** which define the side edges of the integral top **30,** will form an opening **47,** when the carrier device **14** is assembled to bottles, enabling the light occluding tab means **38** to be inserted therein and held by frictional engagement. The openings **47** that are formed are best seen by the FIGS. **13–14** illustrations. By tucking or inserting the light occluding tab means **38** into the openings **47,** the various elements forming the carrier device will cooperate to inhibit light exposure to the contents of the containers, providing the material from which the carrier device is made is also light inhibiting.

It will be noted that the wraparound skirt **28** of each carrier device **14** is longitudinally aligned relative to the flattened or lay-flat tubing from which the interconnected strip **40** of carrier devices **14** is made. As will be apparent in connection with the discussion of other carrier embodiments, the wraparound skirt **28** of each carrier device **14** in the interconnected strip **40** may be longitudinally, transversely or otherwise aligned relative to the interconnected strip depending upon the particular shape and design that is desired and efficient utilization of the tubing to keep waste to a minimum.

Reference is now made to FIGS. **11–15** of the drawings for a specific description of the method of assembling carrier devices **14** to articles such as bottles **12.** Preferably, an interconnected strip **40** of carrier devices **14,** as best seen in FIG. **11,** is handled by automatic packaging machinery; however, because the assembly of carrier devices **14** to articles can be performed by manual or semi-automatic apparatus, the following described procedural steps are employed.

Individual carrier devices **14** are first preferably, though not necessarily, separated from the interconnected strip **40** as is seen in FIG. **12** of the drawings. The lower end of the wraparound skirt **28** of each carrier device **14** is opened as at **48** in order to enable the flattened area **14** of FIG. **12** to be opened up to a position such as shown in FIG. **13** prior to stretching of the carrier **14.** When the carrier device **14** has been opened up to the FIG. **13** position, the wraparound skirt **28** and the integral top **30** will thus assume their generally defined shape.

As seen best in FIGS. **11–12** where the carrier device **14** is shown as a flattened or lay flat tube, the width of the integral top **30,** while being slightly greater than the maximum dimension of the group of bottles **12,** is substantially less than the width of wraparound skirt **28.** This is desired because the width of the integral top **30,** coupled with the openings **47** at opposite edges thereof, allows the integral top **30** to assume a generally horizontal position when the carrier **14** is opened up such as shown in FIG. **13.** This arrangement permits wraparound skirt **28** to be stretched substantially independently of and to a greater degree than the integral top **30** for engagement with the body portion **18** of the bottles **12,** as will be presently described. In other words, as can be viewed from FIGS. **12–13,** top **30** will not be stretched as much as skirt **28** when top **30** is collapsed from its vertical, lay flat position in FIG. **12** to the substantially horizontal position of FIG. **14.**

With the carrier device **14** in the FIG. **13** condition, it is then possible to stretch and enlarge the wraparound skirt **28** of the carrier device in order to assemble the carrier device **14** to bottles **12.** In this regard, it is to be understood that dimensions and the circumference "C" of the wraparound skirt **28** as seen in FIG. **13** of the drawings are substantially less than the corresponding outer dimensions and circumference generated by the plurality of bottles **12** when considered as a group. Thus, when it is desired to assemble the carrier device **14** to the bottles **12,** the wraparound skirt **28** thereof is stretched and expanded from its initial circumference C to a circumference greater than the outer dimension and circumference formed by bottles **12** when considered as a group. This is illustrated in FIG. **14** of the drawings where the arrows "A" are intended to represent expansion of the wraparound skirt **28** in the aforementioned manner.

When the wraparound skirt **28** is thus expanded and the carrier **14** is positioned adjacent the group of bottles **12** as seen in FIG. **14,** it is then possible to telescopically mount the stretched wraparound skirt **28** of the carrier device **14** over the group of bottles **12** by relative movement of the carrier **14** and group of bottles **12** to each other. After this has been accomplished, the wraparound skirt **28** of the carrier device is released from its stretched condition, and due to the elastomeric characteristic of carrier device **14,** the wraparound skirt **28** is released to provide an embracing and gripping engagement of device **14** with the bottles **12** to hold them together as a group and form the container package **10** as illustrated in FIG. **15** of the drawings. Light occluding tabs **38** are also shown in this figure inserted within openings **47.**

Preferably, the length of each wraparound skirt **28** is such that upon releasing the stretched wraparound skirt **28** after being assembled over the group of bottles **12,** a skirt extension **34** will be formed and brought into a position which is beneath and in contact with at least the lower annular enlargement **26** of the bottles. The position of the lower annular enlargement **26** will be determined by the shape of the bottles **12.** For example, where the bottles have a bulbous or rounded configuration in the lower one half of the bottles **12,** the lower annular enlargement **12** is determined by the maximum dimension of the bulbous or rounded configuration and thus will be axially displaced upwardly.

The method of assembling carrier devices **14** to articles such as a group of bottles **12** is thus accomplished through the aforementioned steps.

Reference is now made to FIGS. **16–40** for a description of other plastic multi-pack carrier embodiments which are covered by the present invention. In each of the embodiments hereinafter described, similar reference numerals which correspond to like elements in the FIGS. **1–5** embodiment will be employed with sequencial alphabetical suffixes to distinguish from the various embodiments.

Attention is first directed to the FIGS. **16–17** container package **10***a* embodiment and the interconnected strip **40***a* related thereto as shown in FIG. **24** of the drawings. The container package **10***a* of FIGS. **16–17** differs from the container package **10** of the FIGS. **1–5** embodiment in that the integral top **30***a* includes a plurality of apertures **50** corresponding in number, placement and size to receive the reduced necks **20***a* of the bottles **12***a*. Because of this, the integral top **30***a* is positioned below the crowns or caps **22***a* of the bottles **12***a;* however, the apertures **50** in the integral top **30***a* are sufficiently restricted in dimension such that the apertures **50** are incapable of being positioned over the body or side wall portion **18***a* of the container **12***a*. This causes the integral top **30***a* to be positioned slightly below the crown or cap **22***a* of the bottle **12***a* such that a user can insert his fingers into the finger hole gripping means **36***a* for conveniently carrying the container package **10***a*.

In the container package **10***a* of FIGS. **16–17,** it will also be noted that there are openings **52** at opposite ends of the package due to the elimination of ligh occluding tab means as compared with the FIGS. **1–5** embodiments. The wraparound skirt **28***a* also does not extend below the lower annular enlargement **26***a* or beneath the bottoms or bases **16***a* of the bottles, although this is preferred as in the FIGS. **1–5** embodiments. However, even without a skirt extension such as **34** in the device of FIGS. **1–5,** it is believed the bottles **12***a* will be sufficiently abutted to preclude any significant breaking or rattling.

At opposite ends of the carrier **14***a*, there is provided heat sealed sections **54** which are used to form the carrier **14***a* as will be seen by a reference to FIG. **24** of the drawings. The interconnected strip **40***a* of carriers **14***a* are formed by first providing flattened or lay-flat plastic tubing of the type described and then selectively diecutting and heat sealing the tubing in the manner illustrated. Specifically, wraparound skirts **28***a* have the endless tubes or sections thereof extending transverse to the longitudinal axis of the interconnected strip **40** illustrated in FIGS. **6** and **11.** Further, adjacent carriers **14***a* in the interconnected strip **40***a* are oppositely directed to another. This design is achieved by diecutting two staggered cuts **56** from opposite edges of the tubing which are interconnected by die-cuts **58** at each end of the carrier device **14***a* and then heat sealing carrier device **14***a* on one side only of each staggered cut **56** in the area of the wraparound skirt **28***a*. In other words, the only area of the carrier device **14***a* that is heat sealed is on the inside of each staggered cut **56** only in the area of the wraparound skirt **28***a* of the carrier devices **14***a*. Thus, when the individual carrier devices **14***a* are separated from and assembled to articles such as bottles **12***a*, the carrier device **14***a* will assume the shape as is illustrated in FIGS. **16–17** of the drawings where an opening **52** is provided at opposite ends of the container package in the upper areas of the carrier device **14***a* with a vertically extended heat seal **54** also being provided at opposite ends of the package in the lower area of the wraparound skirt **28***a*.

It will be understood that the reference to die-cuts **56** in FIG. **24** and elsewhere herein is intended to mean a weakened or frangible line or separation between adjacent carrier devices **14***a* in order that the carriers **14***a* can be separated from one another for assembly to bottles **12***a* or the like. It is not desired to have an entire separation of the carriers **14** in the die-cutting operation; however, it is appreciated that one could have a die-cutting step where the carriers **14** are cut separate from each other at that time.

The container package **10***b* of the FIGS. **18–19** embodiment is provided by the interconnected strip **40***b* shown in FIG. **26** of the drawings. It will be seen that when the carrier **14***b* is assembled to bottles **12***b*, it resembles the container package **10***a* of the FIGS. **16–17** embodiments; however, the interconnected strip **40***b*, which is employed to form carrier **14***b*, in FIG. **26** differs materially from the interconnected strip **40***a* in FIG. **24.**

With the exception of the heat sealed portion **44***b* which extends across integral top **30***b* and the size of the opening **52***b*, the container package **10***b* in the FIGS. **18–19** embodiments is similar to the container package **10***a* in FIGS. **16–17** embodiments. However, carrier **14***b* is formed substantially different than the carrier **14***a*. Specifically, the individual carriers **14***b* in the interconnected strip **40***b* are formed with the wraparound skirt **28***b* thereof longitudinally aligned with the flattened or lay-flat tubing from which the carrier **14***b* is formed. It will be noted that rectangularly shaped segments **60** are removed from opposite edges of the tubing in the area of the integral top **30***b* of each carrier **14***b* to permit the integral top **30***b* to be opened up more, as the wraparound skirt **28***b* is opened up for application to bottles **12***b*.

As in the interconnected strip **40** illustrated in FIGS. **6** and **11,** the integral top **30***b* of each carrier **14***b* is heat sealed as at **44***b* immediately adjacent the weakened or frangible line of severance **42***b* to provide the individual carriers **14***b* with a wraparound skirt **28***b* and a top **30***b* integrally connected therewith. The heat sealed portion **44***b*, because it extends in the space between the finger hole gripping means **36***b*, acts to strengthen the material surrounding the finger gripping hole means **36***b* to facilitate gripping and carrying thereof.

In certain cases it may be desirable to provide a double thickness, overlapped portion for the finger hole gripping means area of the container package. This is illustrated in FIGS. **20–21** of the drawings where the container package **10***c* is depicted as well as FIG. **26** of the drawings where the interconnected strip **40***c* is shown.

In FIGS. **20–21,** it will be noted that the container package **10***c* is similar in material respects with the container package **10***b* of FIGS. **18–19** embodiment with the exception of the double thickness, overlapped portion in the finger hole gripping area of the carrier **14***b*. As can be seen from FIG. **26** of the drawings, the integral top **30***c* of each carrier **14***c* is formed with three full circle apertures **50***c* and two finger apertures **62** and a material portion **64** which extends therebeyond to the

frangible or weakened line of severance **42***c*. In the interconnected strip **40***c* of carrier **14***c*, there are only die-cuts therewith since it is unnecessary to heat seal or otherwise attach portions of the carrier to one another for reasons which will now become apparent.

In assembling the carrier devices **14***c* to the bottles **12***c*, the wraparound skirt **28***c* is stretched and applied to the bottles in the usual manner with the unattached flap of the top **30***c* applied over the neck of the bottles **12***c* through the bottle neck apertures **50***c*. When this has been accomplished, the finger hole apertures **62** of the unattached flap formed in the top **30***c* will become registered with one another while the material portions **64** at the ends of each unattached flap overlap the aforementioned flap by a predetermined amount. At this point, the overlapped flaps may be attached together by an adhesive, by heat sealing, by stapling or other suitable fastening means to provide a double thickness reinforced finger hole gripping section for the container package **10***c*.

It will be noted that the interconnected strip **40***c* of carrier **14***c* is similar in all respects with the interconnected strip **40***b* of carrier **14***b* in FIG. **25** of the drawings with the exception of the full circle apertures **62** and the extended material portion **64** in the interconnected strip **40***c* of FIG. **26**. This difference is, of course, for the purpose of providing the double thickness, reinforced finger gripping section for the container package **10***c* of the FIGS. **20–21** embodiment.

In addition to providing a double thickness, reinforced section for the finger gripping area of the container package, it is also possible to provide the double thickness, reinforced section for the bottle receiving apertures of the container package. This is best illustrated in the FIGS. **22–23** embodiments, together with the corresponding FIG. **27** embodiment illustrating the interconnected strip **40***d* of carriers. It will become apparent from studying these figures of the drawings that the double thickness, reinforced finger gripping area and the bottle receiving apertures of the carriers **14***d* are provided by forming full circle finger gripping holes **62** and a full number of bottle receiving apertures **50***d* in each flap, on opposite sides of the tubing, corresponding to the number of bottles **12***d* in the package. As will be seen in FIG. **27** of the drawings, six bottle receiving apertures **50***d* are provided in each flap on oppposite sides of the tubing.

Thus, in assembling the carrier **14***d* to the bottles **12***d*, the wraparound skirt **28***d* is stretched and applied over the containers **12***d* while each of the flaps forming the top **30***d* are positioned in overlapping relationships to one another. As can be seen in FIGS. **22–23** of the drawings, if desired, the overlapped flaps can be attached by an adhesive, heat sealing, or other suitable fastening techniques.

In lieu of providing double thickness, overlapped sections to strengthen the finger gripping and bottle apertures of the carriers, it may be desirable to form apertures in the interconnected strip of the carriers by a heat fusion cutting technique to create a thickened bead around each aperture and this is represented by FIG. **28** of the drawings where the thickened bead **66** surrounding an aperture formed in a plastic heat carrier is shown. Such a thickened or strengthened bead **66** is desirable particularly for the finger hole gripping means of the carrier devices. Strengthening the material around each finger gripping or bottle aperture may also be achieved by forming one or more compressed groove formations in the material around the apertures.

The embodiment of FIGS. **29–30** is intended to show a container package **10***e* wherein the carrier **14***e* presumes a contour fitted shape relative to bottles **12***e* which are shaped like "Coke" bottles. The bottles **12***e* have upper and lower annular enlargements **24***e*, **26***e* respectively with adjacent bottles **12***e* in the container package **10***e* having upper and lower enlargements **24***e*, **26***e* in contact with one another. This is brought about by the stretch mounted wraparound skirt **28***e* which forces the upper and lower enlargements **24***e*, **26***e* and adjacent bottles **12***e* into contact with one another. The integral top **30***e* of the FIGS. **29–30** embodiment is positioned in overlying relationship relative to the crowns or caps **22***e* of the bottles **12***e* while the skirt extension **34***e* of the wraparound skirt **28***e* underlies and contacts the bottoms or bases **16***e* of the bottles **12***e*. The bottles **12***e* are thus held in a preferred snug, non-shifting relationship by the carrier **14***e* which envelops the bottles **12***e* as previously described.

While several embodiments of plastic multi-pack carrier devices and interconnected carrier strips have been shown and described herein, it will be apparent that many modifications and variations of the above are possible. Examples of such modifications and variations are depicted in FIGS. **31–40** of the drawings where a number of different carrier designs are illustrated.

In FIG. **31** of the drawings, a pair of end handles **68** are provided as carrying means. The handles **68** which may be provided at one or both ends of the carrier device can be used to replace the finger gripping holes **36***f* in the carrier **14***f* if desired.

Carrier **14***g* in FIG. **32** of the drawings is provided with an integral carrying handle **70** which is centrally located and extends vertically upwardly for gripping thereof by a user. The handle **70** is formed by taking a pinch pleat and heat sealing along the line **72** just below the slot cut-out **74**, the latter being of sufficient size in order to enable the user to insert his fingers therethrough for gripping the handle **70** during carrying of the package. It will be noted that the carrier device **14***g* does not have any bottle receiving apertures, it being intended that the top **30***g* overlie the articles or containers engaged by the carrier device **14***g*.

In the carrier device **14***h* illustrated in FIG. **33** of the drawings, an integral U-shaped handle **76** extends from the integral top **30***h* to provide a top carrying handle. It will be appreciated that the handle **76** comprises a pair of U-shaped sections formed on opposite sides of the flattened or lay-flat tubing which may be heat sealed together to form a unitary handle if desired.

In FIG. **34** of the drawings, an integral top handle **78** also extends from the integral top **30***i* as in the last two described embodiments. Additionally, light occluding tab means **38***i* are provided at opposite ends of carrier device **14***i* to inhibit light exposure to the contents of the articles adapted to be mounted within the carrier device **14***i*.

The top handle configuration **80** in the FIG. **35** embodiment also differs from the last three described embodiments in the handle configuration as will be observed by comparing this design with the other top handle configurations. Light occluding tab means **38***j* are

adapted to be associated relative to the integral top **30***j* having no apertures provided therein.

The carrier **14***k* in FIG. **36** has finger hole apertures **36***k* only provided in the integral top **30***k* which is attached to the wraparound skirt **28***k*.

A reinforced finger hole design is illustrated in FIG. **37** of the drawings. There the reinforcing of tabs **82,** having finger hole **36***l* provided therein, are left during die-cutting of the carrier from the tubing and then folded under the integral top **30***l* in order to reinforce the centrally positioned finger hole apertures **36***l* formed in the integral top **30***l*. If desired, the reinforcing tabs **82** may be attached to the other surface of the integral top **30***l* by any suitable fastening means.

The FIG. **38** embodiment combines the reinforced tabs and light occluding tabs of the previous embodiment. Specifically, it will be noted that the reinforcing tabs **82** extend outwardly laterally from the integral top **30***m* and are integrally connected to the light occluding tabs **38***m* which extend upwardly from the wraparound skirt **28***m* of the carrier **14***m*. The reinforcing tabs **82** of the finger gripping means are first folded underneath the integral top and this causes the light occluding tabs **38** also to be disposed underneath the integral top **30***m*.

FIG. **39** shows an embodiment wherein the finger hole reinforcing tab **84** has a dual function. When folded in over the integral top **30***n* and preferably attached thereto by any suitable techinque, the tabs **84** act to retain the other rows of containers by engaging the necks of such containers within the apertures **15***n* thereof.

In the FIG. **40** embodiment, the tab **84** is provided on the right side of the carrier **14***o* while on the left side of the carrier, a reinforcing tab **86** is included. This arrangement is such that the tabs **84, 86** are designed to reinforce all the finger gripping and bottle apertures in the carrier **14***o*.

It will be understood that the above described and illustrated plastic multipack carrier embodiments of the present invention represent exemplary embodiments only. Other embodiments will become apparent when the carrier device of the present invention is fully understood.

In addition to plastic multi-pack carrier devices, the present invention is directed to packaging devices which are useful in the general packaging industry. For example, there are numerous instances where overwraps for one or more articles, or tamperproof closure or cover devices for a container are desired. In connection with these more general types of packaging devices, reference is made to FIGS. **7–10** of the drawings.

In FIG. **7** of the drawings, a container package **90** is illustrated as including a plurality of stacked boxes for containers and a plastic overwrap device **94.** The stacked containers or boxes may be of any size or shape, such as those found in warehouses or smaller varieties as would be available in groceries, drug stores, and the like. The overwrap device **94** is made from stretchable and elastic plastic material and includes a wraparound skirt **96,** a top **98** integral therewith, and a skirt extension **100** which underlies and engages the lowermost container or bo in the stack. The container package **90** thus formed provides a convenient method of packaging or wrapping a plurality of articles such as stacked boxes or containers **92.** It is appreciated that suitable carrier material will have to be employed for various applications.

Preferably, the overwrap or packaging devices **94** are manufactured and assembled to articles by techniques similar to those described above. In this connection, reference is made to FIG. **10** of the drawings wherein there is shown an interconnected strip **110** of said packaging devices **94** which are also formed by flattened or lay-flat tubes. Each packaging device **94** is produced by providing a heat sealed area **112** at spaced locations along the tube in a direction which is transverse to the axis thereof. Either prior to or after the heat sealed areas **112** are formed along the length of the tube, the transverse line of severance **114** is provided in the heat sealed areas **112** in order to separate the individual packaging devices **94.** It will be understood that the line of severance **114** may be formed in each heat sealed area **112** after the heat sealed area **112** has been formed in the tubing or alternatively, the transverse line of severance or frangibility **114** may first be provided in the tube and the heat sealed area **112** formed on opposite sides thereof.

To complete the formation of the packaging devices **94,** the tube is longitudinally cut or severed as at **116** along one edge thereof in order to provide the open end for each packaging device **94.** It will be apparent that the interconnected strip **110** of carrier devices **94** could also be produced by folding in half an elongated length of stretchable and elastic plastic material, and then providing the heat sealed and line of severance **112, 114** respectively at both locations. By so manufacturing carrier devices **94,** an open end will automatically be provided, thus making it unnecessary to sever or cut the interconnected strip **110** as at **116** when a flattened or lay-flat tubing is initially utilized.

In FIG. **8** of the drawings, a container package **120** is illustrated as including a rectangular open-top tray or carton **122** into which are placed a plurality of beverage cans **124,** and a packaging device **126,** having a wraparound skirt **128,** an integral top **130,** and a skirt extension **132.** The packaging device **126** is similarly made from stretchable and elastic plastic material in order that it may be stretch mounted over the carton **122** with cans **124** therein as is illustrated. It will be apparent that the packaging device **126** may be used to package a plurality of cans **124** arranged in two juxtaposed rows without the need for the tray or carton **122.** It will be further understood that the overwrap or packaging device **126** is manufactured by techniques similar to those described herein, with particular reference to FIG. **10** of the drawings.

The container package **140** illustrated in FIG. **9** of the drawings differs somewhat from the previous embodiment in that packaging device **142** is utilized to provide an overwrap or cover device for the upper end of the bottle or container **144.** The bottle **144** is shown as providing a reduced neck section **146,** and an enlarged annular section **148** in the vicinity of the open mouth (not shown) of the bottle **144** over which is applied the crown or cap **150.** The packaging device **142** serves, in this embodiment, as a tamperproof closure or cover for the upper end of the bottle **144.** Specifically, the tamperproof closure or cover device **144** is made from stretchable and elastic plastic material in order that it can be contour fitted relative to the upper end of the bottle **144.** As will be seen in FIG. **9** of the drawings, the tamperproof closure or cover device in-

cludes a wraparound skirt **154** which closely conforms to the enlargement **148** and the side of the closure or cap **150**, a top **156** integral with the wraparound skirt **144** which overlies the upper surface of the closure or cap **150**, and a skirt extension **158** which underlies the enlargement **148** and conformably engages the portion of the reduced neck area **146** immediately below the enlargement **148**. The tamperproof closure or cover device **142**, when it is mounted in contour fitting engagement relative to the bottle **144**, gives assurance to the ultimate user of the contents of the bottle **144** that it has not been previously sampled or changed in any respect.

The tamperproof closure or cover device **142** is preferably manufactured by techniques similar to those described in connection with FIG. **10** of the drawings. Where cost factors permit, it is desirable that the tamperproof closure or cover device be provided with a tear strip feature in order to aid the user in removing the tamperproof cover or closure device **142** from the bottle **144**.

It will be understood that the shape and type of bottles **144** illustrated in FIG. **9** of the drawings is depicted and described in exemplary sense only. Many different types of bottles, jars, and other containers of various shapes and sizes, with manually or non-manually removable metal, plastic, cork, etc. closures can usefully employ a tamperproof closure or cover device **142**. It will be understood that the particular size and shape of the packaging devices above described may be modified to suit the particular desire. This will depend upon the article or articles to be engaged by the packaging device.

From the foregoing, it will now be appreciated that the present invention discloses a unique packaging device that has many potential applications in the multipackaging and general packaging industries. The use of the packaging devices will further be enhanced by the herein disclosed method of manufacturing packaging devices and for assembling packaging devices to an article or articles which adapt themselves to high speed operations.

I claim:

1. A packaging device made of stretchable and elastic plastic material for a plurality of containers arranged in a group, comprising a flattened tube wraparound skirt which is dimensioned relative to said containers in order to be stretched for elastically gripping the containers substantially about the entire circumference thereof, and a flattened inverted U-shaped integral top which is of lesser dimension than and is centrally located, open, and unattached relative to spaced opposite upper areas of the flattened tube wraparound skirt in order to assume a horizontal position overlying said containers when said packaging device is assembled thereto.

2. A packaging device for a plurality of containers arranged in a group, comprising lay flat tubing made of stretchable and elastic plastic material and including a flattened wraparound skirt and integral top, said flattened wraparound skirt having a width in its lay flat form substantially greater than said flattened top and being opened up and mounted in stretched and elastic gripping engagement around the group of containers, and said flattened top having through openings at opposite side edges thereof to enable said top to be opened up to assume a horizontal position overlying said containers.

3. A carrier device adapted to carry a plurality of articles arranged in side by side relationship, said carrier device comprising lay flat tubing made of stretchable and elastic plastic material and including a wraparound skirt and a top integral therewith, said wraparound skirt being substantially circumferentially continuous and having a width in its lay flat form which is substantially greater than said integral top, said wraparound skirt being dimensioned relative to said plurality of articles in order to provide a stretch mounted wraparound skirt which is adapted to elastically embrace and grip the articles at least substantially about the entire circumference of said articles and over at least a portion of the height thereof to enclose and hold the articles therein, said integral top being folded-in-half in its lay flat form with opposite unattached side edges throughout the height thereof in order to permit said integral top to unfold and overlie said articles when said carrier device is assembled to said plurality of articles.

4. A container package including a plurality of adjacently positioned containers and a lay flat tube packaging device made from stretchable and elastic plastic material, said lay flat tube packaging device having a flattened tube circumferential skirt for engaging the sides of said containers, a flattened tube integral top for covering the upper ends of said containers and an open bottom, the flattened tube circumferential skirt of said packaging device having greater width areas in its lay flat form than said flattened tube integral top on opposite sides thereof, the flattened tube integral top throughout its length at opposite side edges thereof and the flattened tube circumferential skirt throughout its greater width areas in the vicinity of the upper portions thereof being open and unattached, the open bottom of said packaging device enabling said packaging device to be mounted over said containers, and said packaging device being positioned over said containers with the flattened tube circumferential skirt being opened up and mounted in stretched and elastic gripping engagement around the sides of said containers while the flattened tube integral top is opened up for covering the upper ends of said adjacently positioned containers.

5. The container package as defined in claim **4** wherein said packaging device further includes a substantially unstretched skirt extension for underlying said containers.

6. The container package as defined in claim **4** wherein one of said circumferential skirt and integral top includes tab means for association with the other of said circumferential skirt and integral top.

7. The container package as defined in claim **4** wherein said top includes a plurality of apertures adapted to receive the necks of necked containers.

8. The container package as defined in claim **4** wherein the containers are positioned in an open-top carton prior to the stretch mounting of said packaging device over said containers, the circumferential skirt of said packaging device also being stretched mounted around the sides of said open-top carton.

9. The container package as defined in claim **4** wherein said adjacently positioned containers are arranged in a vertical stack.

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