

Aug. 23, 1966

E. R. CUNNINGHAM

3,268,070

CONTAINER PACKAGE

Filed Oct. 24, 1965

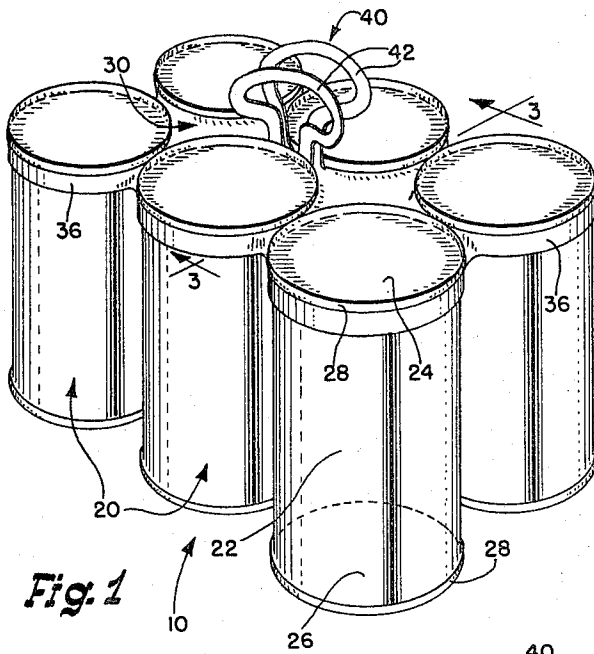


Fig. 1

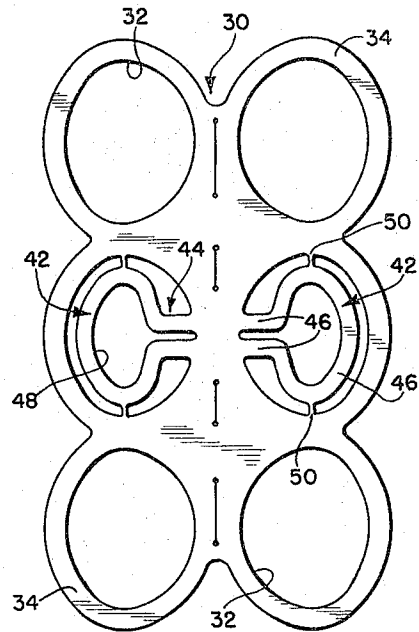


Fig. 2

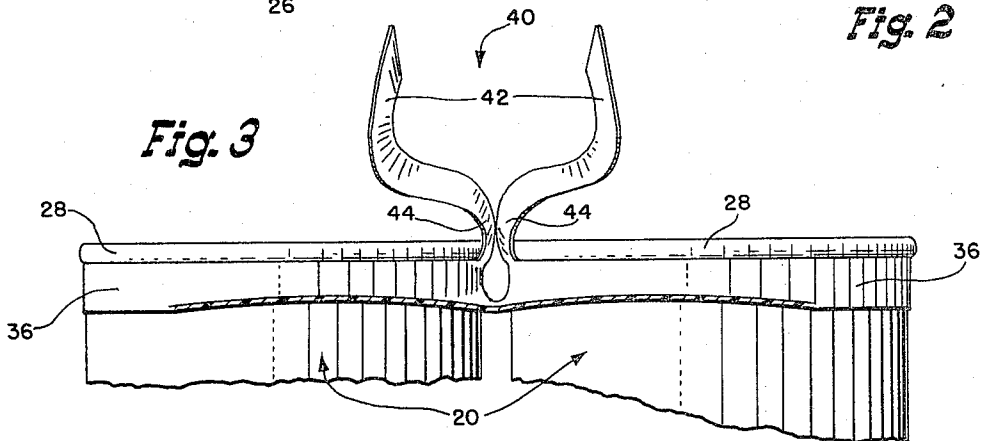


Fig. 3

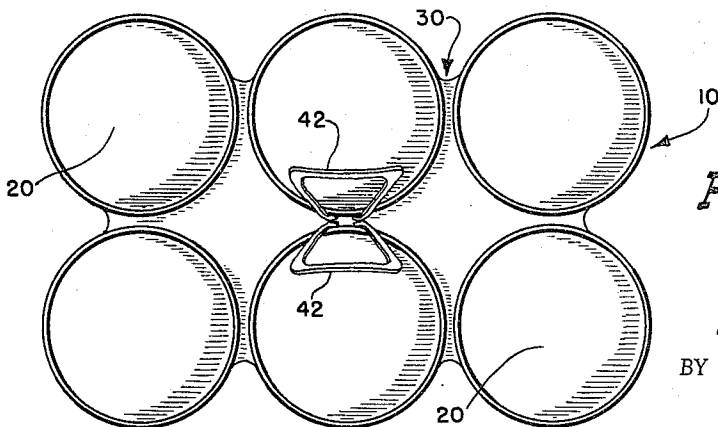


Fig. 4

INVENTOR.
Ernest R. Cunningham
BY *Michael Kora*
Robert W. Reart
His Att'ys

1

3,268,070

CONTAINER PACKAGE

Ernest R. Cunningham, Libertyville, Ill., assignor to Illinois Tool Works, Inc., Chicago, Ill., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,301

7 Claims. (Cl. 206—65)

This invention relates to a container or carrier package, and more particularly, to a package including a carrier device for holding a plurality of containers or the like as a unit until removal of the containers from the carrier device is effected.

A recent development in the container carrier field as disclosed and claimed in U.S. Patent No. 2,874,835 has made it possible to effectively retain as a unit a group of containers, such as beverage cans and the like, by way of a plastic sheet carrier device, which is also quite easily separated from the containers when the containers are to be used. Increased usage of such plastic sheet carriers by many manufacturers is in recognition of the multifold advantages inherent in such carrier devices over paper-board cartons, clip connectors and the like, including in addition to the above, the low material cost, the relative ease of manufacture and assembly, the avoidance of container encasements for displaying printed indicia on the containers and making efficient refrigeration possible, and many other advantages.

The present invention is an improvement over plastic sheet carriers of the foregoing type, particularly in the area of an improved handle structure facilitating the carrying or transporting of a group of secured containers. Various means have been employed to accomplish this including the conventional finger gripping apertures, a separate handle of a sufficient size to accommodate the end of a user, and even a handle device formed integrally with the carrier. It has been found that an integral handle device strikes a balance between the low cost desirability of a finger hole carrier and the ease of transporting containers which is possible with a separate handle arrangement. As a result, there have been several improvements in this area, the most recent being the integral handle carrier device disclosed and claimed in patent application Serial No. 436,592, filed August 30, 1965, a continuation-in-part application of Serial No. 378,240, filed June 26, 1964, now abandoned.

It is recognized that integral handle carrier devices to be effective must not only overcome the inherent difficulty of working with a relatively small amount of material in plastic sheet carriers, but must also effectively position and maintain the integral handle in a predetermined attitude to facilitate grasping thereof by a user in transporting the container package.

It is, therefore, an object of the present invention to provide an improved form of plastic sheet carrier which takes into account the aforementioned considerations.

Another object of the present invention is the provision of a sheet plastic carrier device having an integral handle connection which has a relatively large amount of upward deflection from the plane of the carrier to serve as a convenient carrying handle for transporting a group of containers secured by the plastic carrier.

Still another object of the present invention is the provision of an integral handle means in a sheet plastic carrier which is positioned and maintained above the tops of containers with which it is associated by relatively assembling the carrier with a group of containers.

Yet another object of the present invention is the provision of an integral, deflectable handle structure in a plastic sheet carrier which enables the stacking of container packages in a manner such that the container bot-

2

toms of each superposed container package are supported by the container tops of a subjacent container package without interference from the integral handle structure of each carrier, and which provides subsequent repositioning of the integral handle structure in each carrier above the container tops upon the removal of a superposed container package from a subjacent container package.

A still further object of the present invention is the provision of an improved plastic sheet carrier with an integral handle structure which imparts substantially no strains to the carrier, is comfortable to the hand of a user, and is of adequate strength for the purposes intended.

Other and further objects and advantages of the present invention will become apparent from the following description when read in connection with the accompanying drawing wherein:

FIG. 1 is a perspective view showing a container package including a carrier device as constructed in accordance with the principles of the present invention in association with a plurality of containers;

FIG. 2 is a top plan view of the novel carrier device with integral handle structure as disclosed herein;

FIG. 3 is a fragmentary side elevational view of the container package shown in FIG. 1 as viewed along line 3—3 thereof; and

FIG. 4 is a top plan view of the container package illustrated in FIG. 1.

Reference is now made to the specific embodiment illustrated in the drawing which incorporates the principles of the present invention. With specific attention to FIG. 1, it will be seen that there is a container package unit 10 including a plurality of generally cylindrical containers 20, and a carrier or receptacle 30 for releasably retaining the containers in substantially parallel and abutting relationship as shown. It is to be understood that although the containers 20 illustrated in the drawing are of the beverage or beer can variety, any suitable container of different size and configuration may be used with corresponding changes in the carrier device as needed.

Each container 20 shown in the drawing has a generally cylindrical sidewall 22, the outer ends of which are mechanically interlocked to a top and bottom plate 24, 26 respectively in a conventional manner to provide upper and lower annular enlargements 28, 28. Preferably, the plastic sheet carrier 30 engages the cylindrical sidewalls 22 of each container immediately below the upper annular enlargement 28, and thus in the preferred form, there need be an upper annular enlargement only. The seamless container shell drawn from thin gauge aluminum, for example, thus is encompassed by the preferred form of the invention. It will be understood that the carrier device 30 can be made from suitable material and in a form which will enable it to tenaciously grip the container sidewalls restraining axial movement of the containers relative to the carrier. This latter aspect will become more apparent from the discussion that follows.

As best seen in FIG. 2 of the drawing, the plastic sheet carrier 30 of the present invention comprises a flat sheet of plastic material, polyethylene being the preferred example. Carriers made from polyethylene and equivalent thermoplastic materials have the characteristics of being resilient and elastic, yet deformable, and thus is particularly suited to carrier devices with which the present invention is concerned as will now be discussed. The carrier device is provided with a plurality of oppositely arranged sockets or apertures 32, here shown to be six in number, each of which is slightly elongated lengthwise of the sheet. Each socket or aperture 32 has a maximum transverse dimension or diameter less than the diameter of the containers 20 such that when the containers 20 are axially inserted within

the sockets or apertures 32, they cause the surrounding material portions 34 to stretch and deform to the shape of axially extending embracing collars 36 is depicted in FIGS. 1 and 3. The axial extending embracing collars 36 engage and resiliently grip the container sidewalls 22 in the vicinity of and below the annular enlargement 28 to resist container withdrawal. It will thus be seen that a resilient, elastic and deformable plastic material such as polyethylene performs an important function in causing the carrier 30 to assume its container gripping position.

The plastic sheet carrier device 30 as described is of the type disclosed and claimed in U.S. Patent No. 2,874,835 aforementioned. Such carrier devices, of necessity, must have suitable gripping or handle structures to facilitate manual engagement thereof by a user in lifting and transporting a group of containers. As previously indicated, such gripping or handle structures have included finger gripping apertures, a separate handle arrangement of a size to accommodate a user's hand, and an integrally formed handle structure. The present invention concerns itself with carrier devices having handle structures of the last mentioned type.

More specifically, the present invention incorporates an integral, upwardly deflectable handle structure which is maintained in a predetermined attitude suitable for convenient grasping thereof by a user. Such handle structure is generally identified by reference numeral 40 in FIGS. 1 and 3 of the drawing.

Reference is now made to FIG. 2 of the drawing for a specific description of the handle structure 40 as initially integrally formed with the sheet plastic carrier 30. In each of the centrally located pair of opposed sockets or apertures 32 there is provided a handle strap 42 including a bifurcated stem portion 44, one end of which is joined to material portions of the carrier intermediate the centrally located sockets or apertures 32, and the other end being integrally connected to an apertured head portion 46 generally in the form of a substantially closed loop. Each bifurcated stem portion 44 is subdivided into a pair of spaced, finger-like elements 46 which merge by way of a curvilinear juncture with the substantially closed loop or apertured head portion 46. The size of the aperture or through opening 48 in each head portion 46 is sufficient to accommodate at least one finger of a user's hand for transporting the container package.

It will be noted that each of the handle straps 42 in the centrally located, generally opposed sockets or apertures 32 is initially connected to surrounding marginal portions by readily fracturable connecting tabs 50 of limited size to initially maintain each handle strap in the plane of the carrier prior to the insertion of the containers within the centrally located sockets or apertures. In commercial practice, it has been found convenient to supply a series of interconnected carriers in rolled strip form for convenience in handling, and for proper feeding of the carriers through applying machinery which assembles each carrier and a plurality of containers to each other to form the container package 10. Thus, the readily fracturable connecting tabs 50 perform an important function in maintaining the handle straps in the plane of the carriers so as to avoid any interference with the supply roll or the applying machinery. The connecting tabs are conveniently broken by the force of containers inserted within the centrally located apertures.

It is the common practice in assembling each carrier with a group of containers to insert the expanding jaws or the like within each of the apertures 32 of the carrier to sufficiently enlarge them for placement over the tops of the containers, but without stretching the surrounding material portion beyond their point of elastic recovery. After placement of the axially extending embracing collars 36 in a suitable position, such as immediately below

the upper annular enlargements 28, the expanding jaw or mechanism is removed to permit the inherent resilient and elastic characteristics of the material from which the carrier is made to cause aggressive and resilient engagement of the container sidewall 22 for holding a plurality of containers together as a unit such as the container package 10.

As the containers are moved through the centrally located sockets or apertures 32 of each carrier, the force resulting from the assembly is sufficient to break the readily fracturable connecting tabs 50, and thereafter move each handle strap above the plane of the carrier such that when positioned in the manner shown in FIGS. 1 and 3, each handle strap 42 will also be positioned above the tops of the containers 20. The material portion intermediate the centrally located sockets or apertures 32 will be foreshortened by reason of such portions becoming part of the axially extending embracing collars 36. This, together with the relative difference and size of the apertures 32 and the container diameters will cause the stem portions 44 to be trapped between the upper annular enlargements 28 of the containers.

This is best seen in FIG. 3 of the drawing, thus making it evident that each of the handle straps 42 are not only positioned above the top of the containers 20, but are effectively maintained by the containers 20 in a position suitable for convenient grasping thereof. When the handle straps 42 assume this final position, the apertures or through openings 48 thereof are substantially aligned with one another enabling a user to insert one or more fingers through the aligned apertures or through openings 48 for simultaneous engagement with each of the handle straps 42 during lifting and transporting of the container package.

It is further to be noted that the handle straps 42 in their final position are sufficiently spaced or spread apart from one another such that when a pair of container packages 10 are stacked one atop the other, the handle straps of the lowermost container package will be moved apart from one another and positioned in a substantially flat condition between the superposed container packages. However, since the plastic sheet carrier is made from a material wherein one of the characteristics is its resilient nature, the handle straps 42 of the lowermost container package will spring back to the position shown in FIGS. 1 and 3-4 of the drawing when the uppermost container package is removed.

It is to be understood that it is within the purview of the present invention to provide a single handle strap 42, rather than a pair of generally opposed handle straps of the type discussed, in a carrier device, but the adaption of the present invention to this form will depend upon the amount of weight that can be supported by a single handle strap. Without being limited to the number and weight of a given amount of containers that can be supported by a single handle strap, it is thought that under present circumstances, a single handle strap would probably support fewer containers than the double strap arrangement, but this will depend upon the size and configuration of the handle strap to be used.

With the preferred double handle strap arrangement, there is the additional advantage that it will distribute the container weight for stabilizing the container package during lifting and carrying. Although the handle straps 42 are preferably of the form shown herein, it will be recognized that many modifications thereof from the standpoint of size, configuration, etc. are possible within the scope of the present invention. Various other modifications are, of course, contemplated such as the number of carrier apertures, their size and configuration, and other such variations which are considered to be within the scope hereof.

The particular embodiment of the invention herein shown and described is for exemplary purposes only. Various changes in structure will no doubt occur to those

5

skilled in the art, and are to be understood as forming a part of the invention insofar as they fall within the spirit and scope of the appended claims.

I claim:

1. A container package comprising at least one pair of containers or the like of predetermined diameter, and a carrier device for securing said containers together as a unit, but permitting removal therefrom, said carrier device being in the form of a resilient, elastic and deformable sheet of plastic material having at least a pair of oppositely arranged sockets provided therein, the maximum transverse dimension of each socket being less than the predetermined diameter of the container associated therewith whereby upon the insertion of containers axially into the sockets, the material adjacent each socket assumes the shape of a substantially axially extending bracing collar to resist container withdrawal, said carrier device having handle means integral therewith initially lying within the plane thereof, said handle means extending from at least one discrete material area generally intermediate the generally opposed sockets and substantially traversing one of said sockets, said handle means being positioned and maintained by said containers in extended position above the plane of said carrier and above the terminal end of said containers after the insertion of said containers into said sockets whereby to provide a handle strap suitable for transporting the containers.

2. A container package comprising at least one pair of containers or the like of predetermined diameter, and a carrier device for securing such containers together as a unit, but permitting removal therefrom, said carrier device being in the form of a resilient, elastic and deformable sheet of plastic material having at least a centrally located pair of sockets provided therein, the maximum transverse dimension of each socket being less than the predetermined diameter of the container associated therewith whereby upon the insertion of containers axially to the socket, the material adjacent each socket assumes the shape of a substantially axially extending embracing collar to resist container withdrawal, said carrier device having handle means integral therewith and initially lying within the plane thereof, said handle means extending in generally opposite directions from proximate material portions of the centrally located pair of sockets and substantially traversing said pair of sockets to provide a pair

6

of handle straps, each of said handle straps having a finger opening therein to facilitate grasping thereof by a user, said handle means being positioned and maintained by said containers in close proximity to one another above said container upon the insertion of containers within the sockets for aligning the finger opening thereof to promote cooperative engagement of said handle straps by a user in transporting containers.

3. The container package as defined in claim 2 wherein each of said sockets comprises a through aperture provided in said carrier device.

4. The container package as defined in claim 2 wherein each of said containers are provided with annular enlargements on at least the upper end thereof, said substantially extending embracing collars adapted to engage container surfaces immediately below said annular enlargements.

5. The container package as defined in claim 2 wherein each of said handle straps is initially connected to the marginal portion surrounding its respective socket by readily fracturable connecting tabs of limited size for maintaining said handle straps in the plane of the carrier device until the containers are inserted within the sockets thereof.

6. The container package as defined in claim 2 wherein each handle strap comprises a bifurcated stem portion joined at one end to the proximate material portions and at the other end to an apertured head portion.

7. The container package as defined in claim 2 wherein each handle strap is laterally spaced from its surrounding material portion.

References Cited by the Examiner

UNITED STATES PATENTS

2,965,281	12/1960	Herrmann	229—1.5
2,989,177	6/1961	Swick	206—65
3,061,141	10/1962	Cote	220—113

FOREIGN PATENTS

1,292,843	3/1962	France.
-----------	--------	---------

THERON E. CONDON, *Primary Examiner.*

W. T. DIXSON, *Assistant Examiner.*