

Oct. 8, 1968

T. E. KIRBY, JR

3,404,773

CARRIER FOR CONTAINER MEANS AND PACKAGE UTILIZING SUCH A CARRIER

Filed May 18, 1966

3 Sheets-Sheet 1

FIG-1

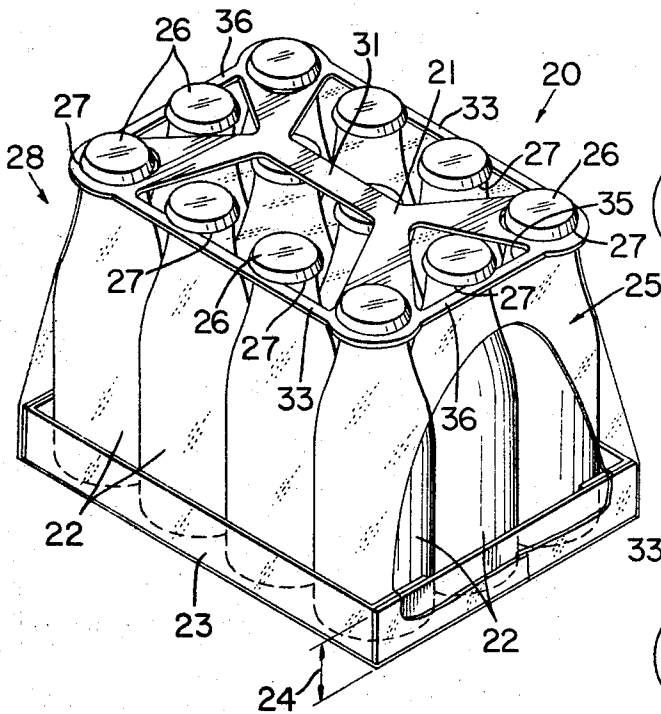


FIG-3

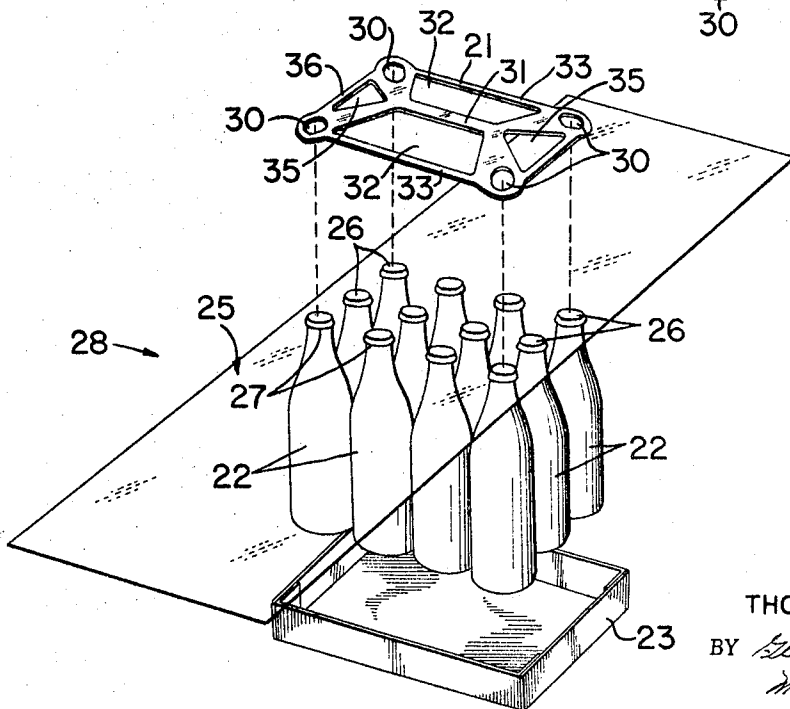
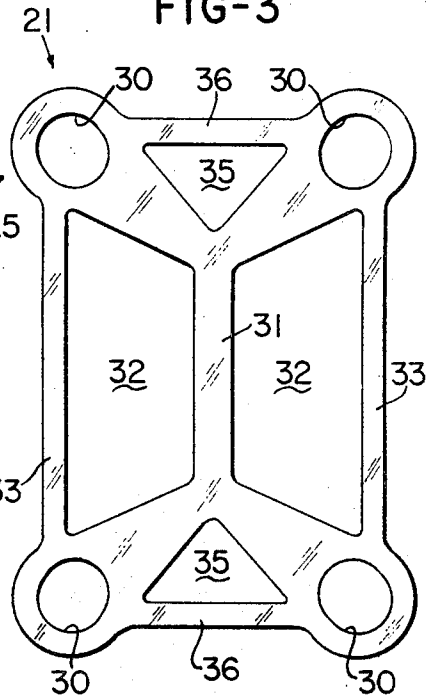


FIG-2

INVENTOR.
THOMAS E. KIRBY, JR.
BY *Glenn Palmer,*
Matthews & Lyne
HIS ATTORNEYS

Oct. 8, 1968

T. E. KIRBY, JR

3,404,773

CARRIER FOR CONTAINER MEANS AND PACKAGE UTILIZING SUCH A CARRIER

Filed May 18, 1966

3 Sheets-Sheet 2

FIG-4

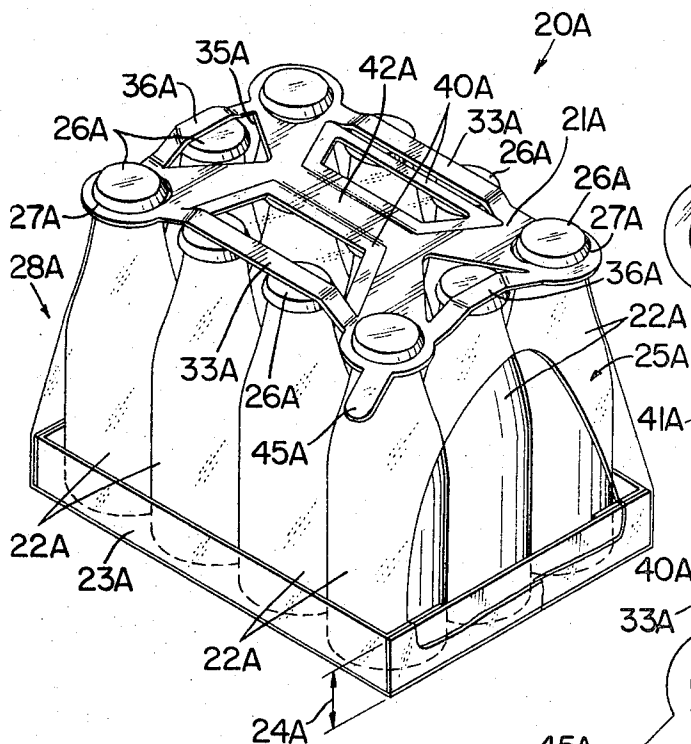


FIG-5

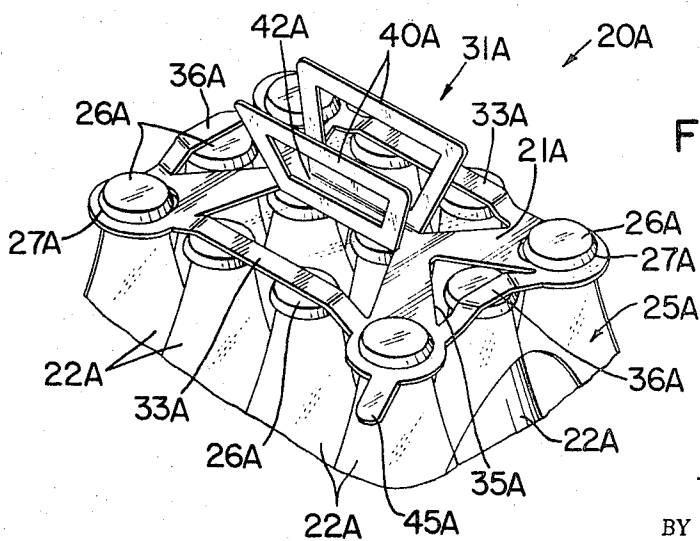
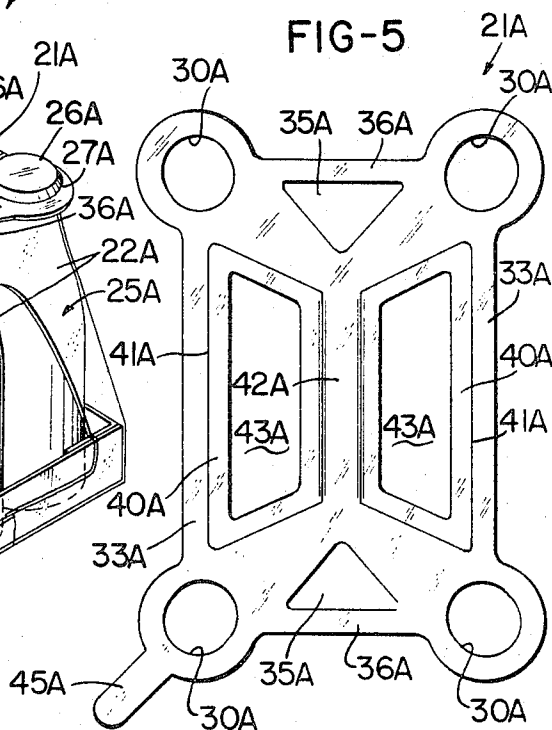


FIG-6

INVENTOR.
THOMAS E. KIRBY, JR.
BY *Glenn, Palmer,
Matthew & Sime*
HIS ATTORNEYS

Oct. 8, 1968

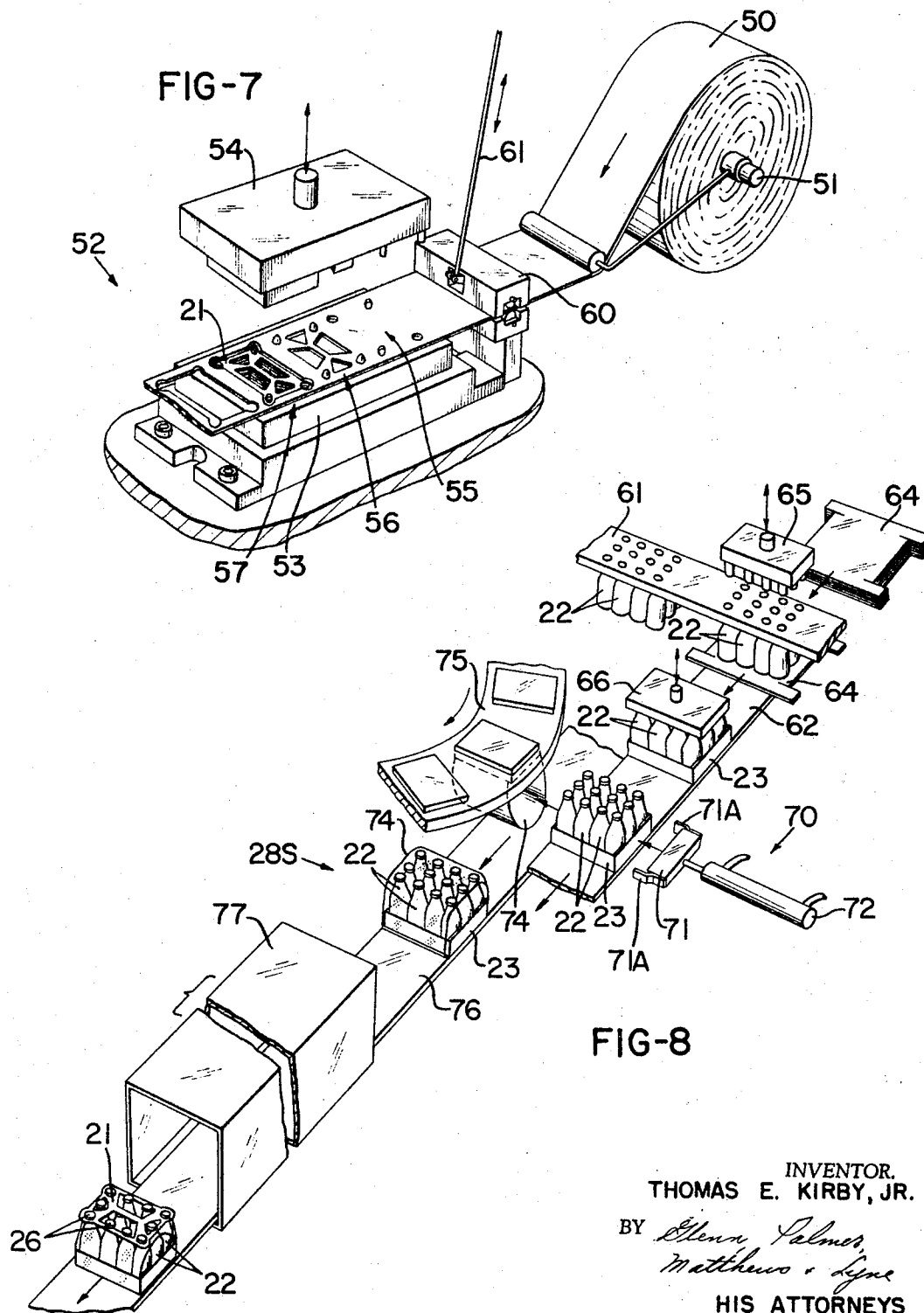
T. E. KIRBY, JR

3,404,773

CARRIER FOR CONTAINER MEANS AND PACKAGE UTILIZING SUCH A CARRIER

Filed May 18, 1966

3 Sheets-Sheet 3



1

3,404,773

CARRIER FOR CONTAINER MEANS AND PACKAGE UTILIZING SUCH A CARRIER

Thomas E. Kirby, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed May 18, 1966, Ser. No. 551,062

12 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a substantially rectangular carrier for a plurality of containers each having an annular projection extending outwardly from its upper end portion, and a package utilizing such a carrier, wherein such carrier has handle means and four substantially elliptical openings provided therein adjacent its corners with each opening being adapted to receive the upper end portion of an associated container therethrough and upon grasping and lifting the handle means said carrier cooperates with lower surface means of the annular projections in said containers to enable the containers to be easily carried by said carrier in suspended relation.

This invention pertains to container means and more particularly to an improved carrier for container means and to an improved package having such improved carrier as a part thereof.

Many products in current use are placed in containers such as cans, bottles, or the like, which are marketed in expendible packages containing a plurality of such containers. Because the expendible package is merely a technique to help market the product, it is desirable to reduce the cost of such package yet providing an attractive package which is easy to carry and use.

Accordingly, it is a feature of this invention to provide an improved carrier for containers means of simple and economical construction.

Another feature of this invention is to provide an improved carrier for container means which has opening means therein for receiving the upper end portion of such container means therethrough, such opening means being constructed and arranged to fit snugly around such upper end portion enabling the container means to be carried in suspended relation below such carrier.

Another feature of this invention is to provide an improved carriers for bottles, or the like, which have projecting cap means, such carrier being arranged essentially in a horizontal plane with the upper end portions of such bottles extending above such carrier through opening means therein and with portions of the carrier adjacent such opening means engaging a lower surface of the projecting cap means to support such bottles in suspended relation therebelow.

Another feature of this invention is to provide a carrier of the character described in which such opening means comprises elliptical opening means arranged so that upon lifting handle means provided therein the minor diameter of such opening means is brought more snugly against the neck of an associated bottle beneath its projecting cap to thereby suspend such bottle therebelow.

Another feature of this invention is to provide such improved carrier having improved handle means for easy grasping and carrying.

Another feature of this invention is to provide such improved carrier made from any suitable material, such as plastic material or the like formed in any suitable manner, such as die cutting of a web of the plastic material to the desired configuration to thereby keep costs at a minimum.

2

Another feature of this invention is to provide an improved package for container means having an inexpensive support on which the lower end portion of such container means is fastened in position and having an improved carrier of the character mentioned which engages and receives the upper end portion of such container means therethrough for suspending such container means and associated support means below such carrier.

Another feature of this invention is to provide an improved package for bottles in which such bottles are supported on an inexpensive support therefor and fastened in position using a plastic material, and in which such package includes such carrier which associates only with the upper end portion of such bottles and suspends the entire assembly below such carrier.

Another feature of this invention is to provide an improved package for bottles in which the lower end portion of such bottles is supported on a suitable inexpensive support and fastened thereto using fastening means comprising heat-sealable plastic means which is shrunk in position against such bottles by heating thereof to thereby fasten the bottles to the associated support.

Another feature of this invention is to provide an improved package for bottles of the character mentioned having such improved carrier which fastens around such heat-sealable plastic means at the upper end portion of such bottles to suspend such assembly therebelow.

Another feature of this invention is to provide an improved package for a plurality of bottles in which such bottles are supported on a suitable inexpensive support and fastened in position on such support using tubular heat-sealable plastic sleeve means which surround the bottles and support except at the open ends of such tubular sleeve, and in which such bottles are fastened firmly in position by subjecting the entire package including bottles, support, and its plastic sleeve to a heat environment; such package also having the improved carrier previously mentioned engaging the upper end portion of such bottles for suspending such bottles therebelow.

Another feature of this invention is to provide an improved package of the character mentioned in which such heat-sealable plastic used as fastening means to fasten bottles to a shallow tray-like support therefor is transparent thereby enabling such bottles with their identification means to be easily seen and eliminating the need for separate identification means on the package.

Therefore, it is an object of this invention to provide an improved carrier for container means and an improved package for such container means having such improved carrier and having one or more of the novel features of this invention as set forth above or hereinafter shown or described.

Other objects, uses, and advantages of this invention are apparent from a reading of this description which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a perspective view illustrating an improved package for a plurality of bottles and showing one embodiment of improved carrier means therefor.

FIGURE 2 is an exploded perspective view showing the relative positions of components of the improved package construction of FIGURE 1 prior to assembling such components together.

FIGURE 3 is a plan view illustrating one embodiment of the improved carrier of this invention in which such carrier is of generally rectangular outline, and particularly illustrating handle means therein and generally elliptical hole means adjacent the corners thereof.

FIGURE 4 is a perspective view of an improved package for a plurality of bottles showing another embodiment of improved carrier means.

3

FIGURE 5 is a plan view of the carrier shown in FIGURE 4.

FIGURE 6 is a perspective view of the package of FIGURE 4 with its lower end portion broken away and particularly illustrating extension means in the handle means provided in such carrier extended upwardly for easy grasping thereof.

FIGURE 7 is a perspective view illustrating a carrier of this invention being produced in an efficient and economical manner by passing a web of material used to make such carrier through a three-station progressive die means for forming thereof.

FIGURE 8 is a composite perspective view illustrating components schematically and in elevation, with parts broken away, of an automatic assembly line for packaging bottles and providing a carrier as a part of each package.

While the various features of this invention are hereinafter illustrated and described as being particularly adaptable for providing an improved carrier and an improved package construction having such improved carrier for container means such as bottles containing beverages, or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide such improved carrier and such improved package for other container means as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

In the exemplary embodiment of this invention illustrated in FIGURES 1-3, an improved package means or package 20 for container means having improved carrier means shown as carrier 21 is illustrated. Package 20 is illustrated supporting a plurality of a dozen container means or bottles each designated by the numeral 22 and only a few representative ones of which have been designated by such numeral.

Package 20 includes support means for supporting the lower end portion of bottles 22 and such support means comprises a generally rectangular tray 23 having a shallow depth as illustrated at 24. Each tray 23 is preferably made from an inexpensive material such as paper or the like. Fastening means is provided for fastening bottles 22 to support 23 and such fastening means in this example of the invention comprises a heat-sealable plastic sheet means or sheet designated generally by the numeral 25. Upon placing bottles 22 upon generally rectangular tray 23 and fastening such bottles in position with heat-sealable plastic sheet 25, an integral assembly is thereby provided and such assembly is designated by the numeral 28.

Carrier 21 associates with only the upper end portion of assembly 28 and supports such assembly in suspended relation below such carrier. Carrier 21 has handle means or a handle 31 as an integral part thereof for easy grasping and carrying. Handle means 31 will be described in detail subsequently.

Each bottle 22 in this example of the invention is of circular sectional outline having a frusto-conical neck portion tapering from the central portion of such bottle and terminating in a conventional opening in its terminal end which is sealed closed by closure cap means preferably in the form of a standard closure cap 26. Each closure cap 26 has a lower end portion 27 which projects beyond the outer periphery of the neck of its associated bottle.

Carrier 21 in this example of the invention is of roughly rectangular outline and has opening means therein for receiving the neck of each bottle 22 therethrough. The opening means in carrier 21 comprises a plurality of openings each designated by the numeral 30 and arranged adjacent each corner of carrier 21, see FIGURE 3. Each bottle 22 extends completely through an associated opening 30 so that associated cap 26 lies above carrier 22.

As mentioned above, carrier 21 has an opening 30 adjacent each of its corners. Each opening 30 is of generally elliptical outline and associates with the circular neck of

4

an associated bottle 22. Each cap 26 as well as its lower projecting portion 27 in this example is of circular outline.

The lower projecting portion 27 of each cap 26 has a diameter larger than the distance across the minor axis of its associated elliptical opening 30 while being smaller than the distance across the major axis of such elliptical opening. With this construction each cap 26 is easily inserted through an associated elliptical opening 30 by pulling the carrier so that opening 30 snaps over cap 26 and into engagement with the neck of an associated bottle 22. Upon lifting handle 31, portions of carrier 21 adjoining the major axis of the elliptical opening 30 more firmly engage the lower surface of projection 27 in cap 26 thereby better enabling assembly 28 to be supported in suspended relation below carrier 21.

In this example of the invention twelve bottles are shown being carried by generally rectangular sheet-like carrier 21. Bottles 22 are arranged in a rectangular pattern and supported on tray-like support 23. After bottles 22 are fastened in position against support 23 by plastic sheet 25 to define assembly 28, carrier 21 is fastened so that its four elliptical holes 30 engage only the upper end portions of bottles 22 arranged at the corners of the assembly thus defined. Thus, by lifting handle 31 the entire package 20 is lifted since all of the bottles are fastened together by being fastened to common support 23.

As shown in FIGURE 3, carrier 21 is made from a rectangular flat sheet of material and in this example is preferably made from a flat sheet of plastic material. The handle means 31 is defined by a pair of cutouts in such flat sheet of plastic material defining a pair of trapezoidal openings therein each designated by the numeral 32. The base of each trapezoidal opening 32 is arranged adjacent an associated side edge of carrier 21 to define a strip 33 along each side edge of carrier 21. The shorter of the parallel sides of trapezoidal openings 32 are arranged parallel to each other and in spaced apart relation so as to define an elongated strip which is centrally located in carrier 21 and in this example defines handle 31.

Each elliptical opening 30 is arranged in a corner of carrier 21 so that a line through the foci of such elliptical opening will extend generally toward the effective center of handle 31. Upon lifting handle 31 portions of carrier 21 adjacent the major axis of each elliptical opening 30 are urged firmly against the neck of an associated bottle 22 so that the top surface of carrier 21 adjoining each hole 30 is brought into more positive engagement with the lower surface of projection 27. This action assures that assembly 28 is suspended in a secure manner.

Fastening means is provided for fastening bottles 22 to tray-like support 23. FIGURE 2 illustrates transparent plastic sheet 25 used to provide such fastening action arranged above bottles 22 and support tray 23. After placing bottles 22 in tray 23 sheet 25 is wrapped therearound and securely fastened.

In this example of the invention transparent sheet 25 is preferably made from a heat-sealable plastic material which also shrinks upon being subjected to a heat environment. The preferred manner of fastening bottles 22 in tray 23 is to wrap sheet 25 around such assembled bottles and tray and then subject the entire assembly to a heat environment. The plastic material shrinks around bottles 22 and simultaneously adheres to tray 23 thereby urging bottles 22 and tray 23 together. Carrier 21 is then arranged with its four openings 30 over the four corner bottles 22 and snapped in position as previously described.

As shown in FIGURES 1 and 3 of the drawings and as previously mentioned a strip 33 remains on each side of carrier 21 once the trapezoidal openings 32 are cut in carrier 21. Each strip 33 extends along an associated side of carrier 21 between a pair of corner openings 30. Strip 33 is placed under projection 27 of each cap 26 of bottles 22 intermediate bottles at each corner. This arrangement

provides additional surfaces against which carrier 21 acts for improved suspension of assembly 28. The manufacture of carrier 21 from a plastic material also lends itself to the manufacturing of carrier 21 slightly undersize enabling slight stretching of each strip 33 so that it comes into firm yielding engagement with the necks of intermediate bottles 22 below projection 27 in each cap 26.

An opening 35 is also provided at each opposite end of carrier 21. Openings 35 are centrally located and define a strip 36 at each end of carrier 21. End strips 36 are similar in arrangement and function to the side strips 33 previously described.

With the main exception being the construction of the handle means, the embodiments of the package construction and carrier illustrated in FIGURES 4-6 of the drawings are identical to the embodiments illustrated in FIGURES 1-3 of the drawings. Therefore, the package of FIGURES 4 and 6 will be designated by the same numeral 20, as previously, followed in this latter embodiment by the letter designation A. Similarly the carrier for package 20A will be designated by the same numeral 21, followed in this latter embodiment by the letter designation A. Identical parts in this latter embodiment will not be described again but will be shown on the drawings with the same numerals followed by the letter designation A. Portions of carrier 21A basically different from carrier 21 will be given new numerals also followed by the letter designation A.

Carrier 21A has improved handle means 31A therein and such handle means has extension means for easier grasping thereof. The extension means comprises a pair of flap means or flaps each designated by the numeral 40A and defined by providing a pair of generally U-shaped cut means or U-shaped cuts 41A in the central portion of rectangular carrier 21A so as to face each other with a narrow strip of material 42A separating the U-shaped cuts 41A. Each flap 40A has a cutout opening therein of generally trapezoidal outline designated by the numeral 43A. Openings 43A are of identical area and upon folding flaps 40A upwardly and inserting carrying means, such as one's fingers, through opening means 43A, it is easier to carry package 20A, see FIGURE 6.

The U-shaped cuts 41A are generally symmetrically arranged in carrier 21A. The base of each of such cuts 41A is located adjacent a side edge of the generally rectangular carrier 21A thereby defining a strip of material adjacent each side edge designated by the numeral 33A. Strip 33A in this embodiment of the invention is preferably arranged to pass over the caps 26A of bottles 22A arranged intermediate the bottles 22A at opposite corners of package 20A to help hold such intermediate bottles in position.

In a similar manner, cutout openings 35A are provided along the other pair of parallel sides of generally rectangular carrier 21A. Opening 35A at each end defines a strip portion of carrier 21A designated by the numeral 36A which is arranged over the center bottle 22A, in this example, at each opposite end of package 20A.

Carrier 21A has a projection tab 45A extending from a corner thereof, as illustrated in FIGURES 5 and 6 of the drawings. Tab 45A enables easy grasping and lifting of carrier 21A away from the top of package 20A thereby pulling elliptical openings 30A from under their associated bottle caps 26A for easy access to bottles 22A.

The improved carrier 21 or 21A of this invention is made of a plastic material and may be made in a simple and economical manner by molding such plastic into the desired configuration. However, each carrier is preferably die cut from a web or sheet of material. In this example of the invention each carrier is preferably made from a plastic material provided in roll form. The description and illustrations in FIGURES 7 and 8 will proceed with the forming of carrier 21. However, the die means illustrated for forming carrier 21 could be used to make carrier 21A with minor modifications in such die means.

The thickness of the plastic web used to form each carrier will be determined by the type and weight of container means or bottles to be carried thereby. Also the overall dimensions of each carrier 21 or 21A are smaller than the distance across the corner bottle tops so as to provide a stretch fit. Such stretch fit helps urge each carrier so that portions thereof adjacent each elliptical hole are urged into firmer engagement with the neck of each associated corner bottle for more positive suspension upon lifting the carrier handle. This urging action is generally controlled within desired limits because the outside carrier strips between the corner holes are not subjected to carrying stress. Such strips also hold the bottles firmly in position by either snapping under caps 26 of intermediate bottles 22 in package 20 or pass over similarly arranged intermediate bottles 22A of package 20A.

A web of plastic material indicated generally by the numeral 50 is provided in roll form and suitably supported for rotation on shaft 51. Means is provided for automatically removing plastic material 50 from its roll and passing such material through die means shown in this example as a three-station progressive die means or die indicated generally by the numeral 52. Die 52 has a punch-receiving portion 53 and a three-stage movable punch 54.

Punch 54 is actuated vertically up and down by a suitable press. As web 50 is moved in a predetermined manner under punch 54, such punch is brought into shearing engagement therewith while cooperating with portion 53 to cut such web in three successive steps to define each carrier 21.

The arrangement of punch 54 is such that the elliptical opening means 30 are punched in web 50 first as indicated at 55. Secondly, the trapezoidal openings 32 and end openings 35 are cut therein at a station indicated at 56. Finally, the outer generally rectangular outline of carrier 21 is cut at a final station 57. The finished carrier 21 is removed after leaving final station 57.

The movement of web 50 and punch 54 are generally controlled simultaneously by the downward motion of the press actuating punch 54. The downward movement of such press actuates a feed mechanism 60 for web 50. A rod 61 physically interconnects such press with feed mechanism 60.

Thus, it is seen that as the press comes down so the punch portion 54 comes into engagement with web 50 to cut holes therein as described, web 50 is moved along the stations 55-57 to sequentially provide the desired holes therein. Suitable locating pins are provided cooperating with web 50 and die 52 assuring that the various holes are cut in the proper positions as web 50 travels across the die means.

FIGURE 2 illustrates a plastic sheet 25 made from a heat-sealable material for holding bottles 22 in their associated generally rectangular shallow tray 23. It may be desirable in certain applications and for use in an automatic continuous assembly line to provide such plastic material 25, or the like, in tubular form with open ends. FIGURE 8 illustrates an automatic assembly line in which such a tubular sheet 25 is used.

A bottle conveyor 61 is shown in FIGURE 8 for carrying the desired number and arrangement of bottles 22 to be packaged in each carton 23. Conveyor 61 picks up a dozen full bottles 22 arranged in three rows of four in each row and suspends such bottles over a belt conveyor 62 moving generally transverse to conveyor 61. Means is provided for either manually or automatically placing a blank 64 used to form support 23 in position on conveyor 62 beneath the suspended bottles.

A bottle release mechanism 65 is provided for releasing bottles 22 on carton blank 64. Tray-like support 23 is formed around the lower end portion of bottles 22 while holding such bottles in position using a suitable hold down device indicated by the numeral 66. The forming of blank 64 to define tray 23 may be accomplished manu-

ally or automatically. Blank 64 has suitable adhesive means applied thereon enabling the forming of tray 23.

With bottles 22 in their formed support 23 they are moved by conveyor 62 adjacent to a transfer device 70 which comprises a T-shaped transfer bar 71 having a pair of fingers 71A for grasping and supporting opposite ends of support 23 with bottles 22 therein. Transfer bar 71 is actuated by an air cylinder 72.

Support 23 and its bottles 22 are moved by transfer device 70 in a direction generally transverse conveyor 62 and into a tubular plastic sleeve wrap 74 which is carried on a circular conveyor means 75.

Conveyor 75 moves so the outer periphery thereof lies adjacent conveyor 62. Circular conveyor 75 has a plurality of tubular plastic fastening sleeves 74 detachably fastened thereon at spaced apart angular increments. Conveyor 75 is moved in a sequential indexing manner in cooperation with the movement of tray 23 with its bottles 22 on conveyor 62 and conveyor 75 is arranged so that each tubular sleeve 74 is aligned directly opposite transfer device 70 with each angular indexing movement.

Thus, it will be seen from FIGURE 8 that each tray of bottles is moved along conveyor 62 and transferred by device 70 within an associated sleeve 74 in an automatic manner. Each sleeve 74 is suitably fastened on conveyor 75 basically to support its own weight. As soon as transfer device 70 transfers the tray of bottles within wrap 74, the increased weight thereof causes wrap 74, now supporting tray 23 and bottles 22, to drop a small distance on another conveyor 76 moving under circular conveyor 75. The assembly comprised of sleeve 74 in position around bottles 22 and tray 23 will be referred to as assembly 28S. Assembly 28S is similar to assembly 28 formed using sheet means 25 previously described.

Conveyor 76 moves assembly 28S into a heat environment shown as a controlled temperature heating oven 77. The tubular sleeve 74 upon being subjected to heat in oven 77 shrinks around the bottles 22 and tray-like support 23 firmly fastening such bottles and tray together. Either carrier 21 or 21A is snapped in position after assembly 28S leaves oven 77.

Tubular sleeve 74 may have holes cut therein corresponding to the size and arrangement of bottles 22 on tray 23 enabling such sleeve to slip over the neck of each bottle 22 engaging only the lower portion of each neck upon being shrunk in oven 77. However, if desired sleeve 74 may be kept as a continuous surface so that upon shrinking in oven 77 it stretches tightly over the caps 26 and necks of bottles 22. Carrier 21 is easily snapped in position with sleeve 74 thus stretched over the bottle caps.

While FIGURE 8 illustrates apparatus for automatically packaging bottles 22 into a support tray 23 and fastening such bottles and tray 23 together using plastic fastening sleeve 74 to define assembly 28S it will be appreciated that the entire operation could be carried out manually.

The transparent plastic sheet 25 or sleeve 74 enables easy viewing of the bottles being supported on their associated support tray. Thus, it will be apparent that it is not necessary to provide separate identification means in association with each improved package of this invention inasmuch as the identification means provided on the bottles themselves is sufficient. Obviously, this results in reduced expense.

While support means, drive means, and control means for the various conveyor means, transfer devices, etc. have not been shown in FIGURES 7 and 8 of the drawings, it will be appreciated that any suitable means may be used for such purposes.

Terms such as "upper," "lower," "top," "bottom," "side," "end," etc., have been used in this disclosure of the invention for ease of description and to define the position of the bottles and other components as illustrated

in the drawings; and such terms should not be considered as limiting the scope of this invention in any way.

Thus, it is seen that an improved carrier for container means having opening means therein for receiving the upper end portion of such container means therethrough has been provided and such carrier engages the upper end portion of such container means and holds such container means for carrying in suspended relation therebelow.

Further, this invention provides an improved package of simple and economical construction which utilizes such improved carrier of this invention.

While the form of the invention now preferred has been disclosed as required by statute, other forms may be used, all coming within the scope of the claimed subject matter which follows.

What is claimed is:

1. In combination: a plurality of containers each having an upper end portion and having an annular projection extending outwardly therefrom, and a substantially rectangular carrier for carrying said containers in suspended relation, said carrier having a plurality of four substantially elliptical openings provided therein with each opening being arranged adjacent an associated corner of said carrier and receives an upper end portion of an associated container therethrough, and handle means in the central portion of said carrier, each of said elliptical openings being arranged so that a line through its foci extends through the effective center of said handle means, and upon lifting said handle means portions of said carrier adjoining the major axis of each of said elliptical openings are urged firmly against each associated container enabling top surface portions of said carrier to engage lower surface means of said annular projections to assure said containers are suspended in a secure manner upon grasping said handle means and carrying said carrier and its associated containers.

2. A combination as set forth in claim 1 in which said handle means has extension means therein enabling easier grasping and carrying thereof and said extension means comprises a pair of flap means defined by providing a pair of generally U-shaped cut means in said rectangular outline carrier symmetrically arranged to face each other with a narrow strip of said carrier separating said U-shaped cut means, each of said flap means having a cutout opening provided therein and said flap means being adapted to be folded upwardly above said containers and so that said cutout openings are arranged in aligned relation enabling said carrier to be easily grasped and carried by inserting carrying means through said cutout openings.

3. A combination as set forth in claim 1 in which said plurality of containers comprises a plurality of bottles each having a neck defining its upper end portion and having a closure cap fastened thereon, each of said closure caps having a lower edge of substantially circular peripheral outline which extends outwardly from an associated neck and defines an annular projection, each lower edge having a diameter larger than the distance across the minor axis of its associated elliptical opening and smaller than the distance across the major axis of said associated elliptical opening enabling each of said caps to be easily inserted through its associated elliptical opening and upon lifting said handle means said carrier is urged so that portions thereof adjoining the major axis of each elliptical opening engage the lower edge of each associated cap to assure said bottles are suspended in said secure manner.

4. A package comprising, an even number of no less than six containers each having a lower end portion and an upper end portion provided with an annular projection extending outwardly therefrom, support means for supporting the lower end portions of said containers, fastening means for fastening said containers to said support means to form an assembly, said containers being arranged in a substantially rectangular outline with a container at each corner and in at least two parallel rows with no less than three containers in each row, a substan-

tially rectangular carrier for carrying said assembly, said carrier being made of a sheet material and having four openings provided therein adjacent its corners, each of said openings receiving an upper end portion of an associated corner container therethrough, a pair of strips defining opposite side edges of said carrier, each of said strips being arranged between a pair of corner openings so that it normally urges toward a container arranged intermediate the end containers of its associated row to help hold each intermediate container in position in said package, and handle means for grasping said carrier, said handle means being arranged in the central portion of said carrier and upon lifting said handle means a portion of said carrier adjoining each of said openings is urged more firmly against an associated corner container enabling associated portions of the top surface of said carrier to cooperate with lower surface means of the projections extending outwardly from the corner containers so that said package is suspended from said carrier in a secure manner and said four corner openings enable said carrier to be more easily installed on and removed from said package.

5. A package as set forth in claim 4 in which said support means comprises a rectangular shallow tray-like support for supporting said containers thereon and having wall means around the periphery thereof extending a small distance upwardly from the bottom of said lower end portions of said containers, whereby upon lifting said handle means the lower end portions of said corner containers are kept from moving outwardly by said wall means.

6. A package as set forth in claim 5 in which said fastening means comprises heat-sealable plastic means placed around said containers and said support means and the entire assembly is fastened together upon subjecting said assembly to a controlled heat environment causing said plastic means to shrink and hold said container means and support means together as a unit.

7. A package as set forth in claim 6 in which said plastic means comprises tubular plastic sleeve means having opposed open ends and being adapted to receive therein said support means containing said containers prior to subjecting said assembly to said heat environment.

8. A package as set forth in claim 4 in which said handle means has extension means therein enabling easier grasping and carrying thereof and said extension means comprises a pair of flap means defined by providing a pair of generally U-shaped cut means in said rectangular outline carrier symmetrically arranged to face each other with a narrow strip of said carrier separating said U-shaped cut means, each of said flap means having a cutout opening provided therein and said flap means be-

ing adapted to the folded upwardly above said containers and so that said cutout openings are arranged in aligned relation enabling said carrier to be easily grasped and carried by inserting a carrying means through said cutout openings.

9. A package as set forth in claim 4 in which each of said corner openings is of generally elliptical configuration and is arranged in said carrier so that a line through its foci extends through the effective center of said handle means and upon lifting said handle means portions of said carrier adjoining the major axis of each of said elliptical openings are urged more firmly against an upper end portion and beneath the annular projection of an associated corner container.

10. A package as set forth in claim 9 in which each of said containers is in the form of a bottle having a closure cap fastened thereon, each of said closure caps having a lower edge of substantially circular peripheral outline which extends outwardly from an associated bottle and defines an associated annular projection, and upon inserting said upper end portions of said corner bottles through said elliptical corner openings and lifting said handle means, portions of said carrier adjoining said elliptical corner openings cooperate with said lower edges of said closure caps provided on said corner bottles and each of said strips is urged more tightly toward an associated intermediate bottle.

11. A package as set forth in claim 10 in which each of said strips is arranged beneath the lower edge of the closure cap of each associated intermediate bottle and provides additional surface means against which said carrier may act to help support said package.

12. A package as set forth in claim 10 in which each of said strips is arranged above the closure cap of each associated intermediate bottle and helps hold each intermediate bottle in position in said package.

References Cited

UNITED STATES PATENTS

2,425,536	8/1947	Hofeldt et al.	206—45,14
2,989,177	6/1961	Swick	206—65
3,084,792	4/1963	Poupitch	206—65
3,214,016	10/1965	Stephan	206—65
3,268,070	8/1966	Cunningham	206—65
3,269,530	8/1966	Wanderer	206—65
3,325,004	6/1967	Wanderer	206—65

WILLIAM T. DIXSON, JR., *Primary Examiner.*