March 7, 1967 R. W. BEART 3,307,321

ARTICLE CARRIER AND METHOD OF APPLYING IT TO A PLURALITY OF CONTAINERS

Filed July 30, 1964

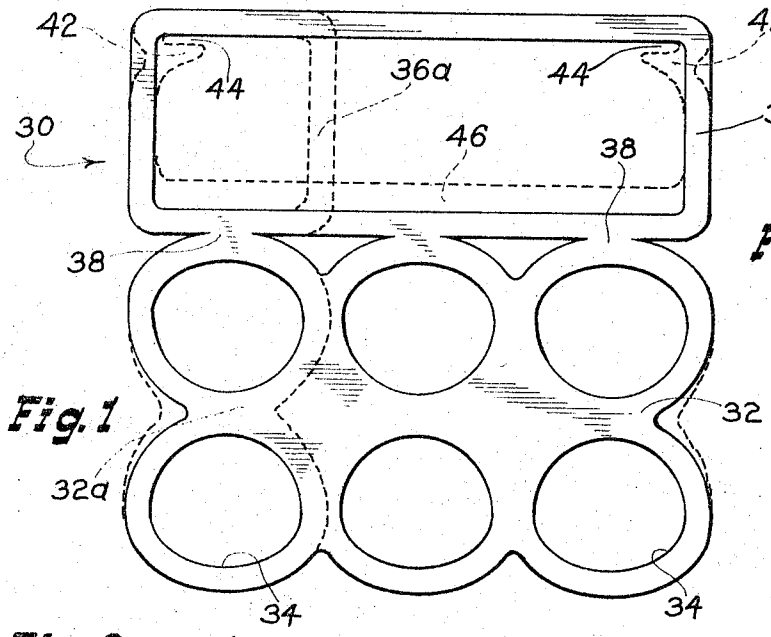



Fig. 1

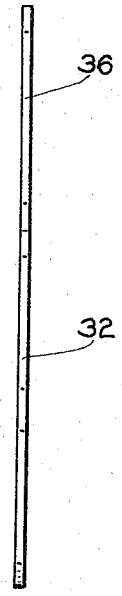



Fig. 2

Fig. 3

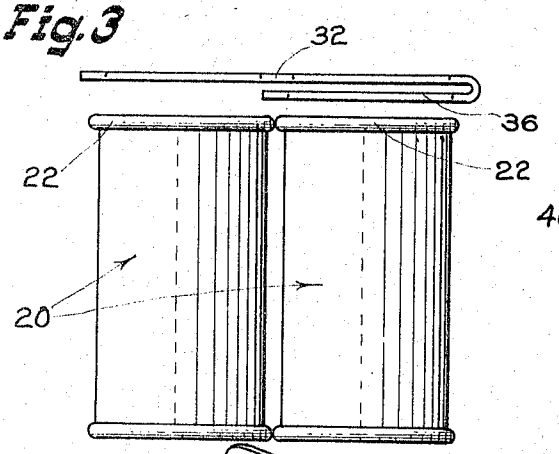
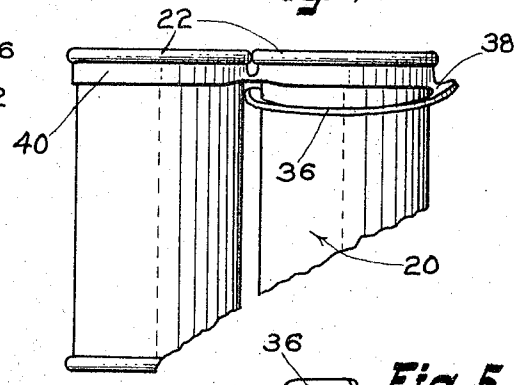



Fig. 4



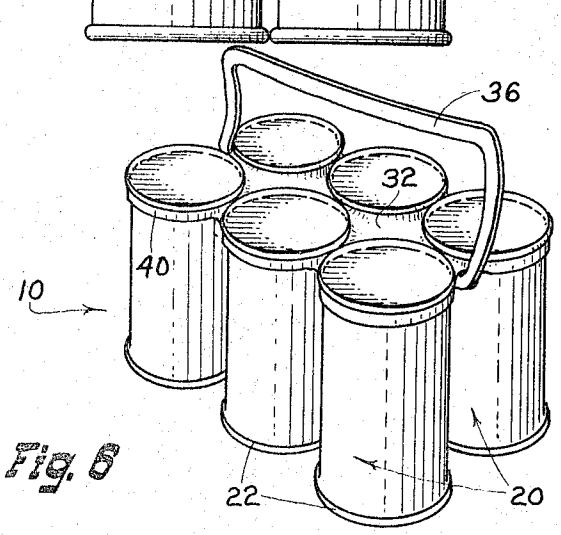




Fig. 6

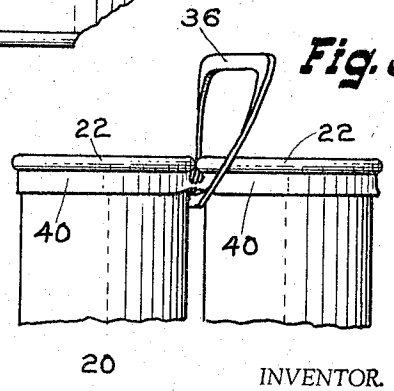



Fig. 5

INVENTOR.
Robert W. Beart
BY Michael Zovac
His Att'y

United States Patent Office 3,307,321
Patented Mar. 7, 1967



3,307,321

# ARTICLE CARRIER AND METHOD OF APPLYING IT TO A PLURALITY OF CONTAINERS

Robert W. Beart, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed July 30, 1964, Ser. No. 386,178
10 Claims. (Cl. 53—35)

The present invention relates to packaging devices, and more particularly, to a package or article carrier for retaining and transporting articles, and to the resulting package unit.

Packaging devices for retaining and transporting articles such as beverage cans, bottles and the like have taken several forms. In the past, paperboard or cardboard carriers have been predominantly used, but in the last few years, other devices have come to the fore. These include metallic or plastic carrier clips, and plastic sheet carriers. The present invention concerns carriers of the last mentioned type, and is specifically an improvement over the plastic sheet carriers disclosed and claimed in U.S. Patent No. 2,874,835 dated February 24, 1959 to O. J. Poupitch, and in subsequent patents.

In transporting containers retained within such plastic sheet carriers, separate and integral handles as well as finger gripping apertures have been used. Where separate handles have been employed, difficulties are encountered in that separate handling of the carriers and handles is necessary, and complex mechanisms must be used for assembling the handles and carriers. Integral handles have alleviated handling and assembly problems, but they have, in most cases, restricted the amount of handle deflection above the plane of the carrier, thus making it relatively difficult for the user to obtain a good grasp. Although finger gripping apertures have served both paperboard and sheet plastic carriers as a manual gripping means, it is well known that they are not as effective as a handle or strap would be since it is not only difficult to obtain a good grasp of the carrier, but it is rather strenuous to transport a cluster of beverabe cans and the like over a long distance.

It is, therefore, an object of the present invention to provide an improved plastic sheet carrier which overcomes the above noted disadvantages.

Another object of the present invention is the provision of a sheet plastic container carrier with an improved handle arrangement.

Still another object of the present invention is to provide a plastic sheet carrier having a novel and improved handle arrangement which facilitates assembly of the carrier and handle to a plurality of containers or the like, and readily permits gripping of the handle for subsequent transportation of the containers.

A still further object of the present invention is the provision of a plastic sheet carrier with a new and improved handle arrangement which does not substantially hinder or interfere with stacking of the carrier packages one atop the other for shipping and display purposes.

It is yet still another object of the present invention to provide a new and improved handle arrangement in a plastic sheet carrier wherein the handle is comfortable to the hand and of adequate strength, and does not substantially increase the cost of the carrier and handle over prior art devices.

These and other objects of the present invention are accomplished by the provision of an endless band which is initially integrally connected to a plastic sheet carrier by readily rupturable weakened portions along an outer marginal portion of the carrier, the endless band being readily severable from the carrier and adapted to be positioned in encircling relationship thereto between juxtaposed rows of containers received and retained by the carrier for manual grasping thereof by a user.



Other and further objects and advantages of the present invention will become apparent from the following description when taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a top plan view of a carrier blank incorporating an integral handle arrangement as taught by the present invention;

FIG. 2 is a side elevational view of the carrier blank shown in FIG. 1;

FIG. 3 is a front elevational view of the carrier blank just prior to assembly with a plurality of containers;

FIG. 4 is a fragmentary front elevational view of the carrier and handle means during the application of the same to the containers;

FIG. 5 is a view similar to FIG. 4, and showing the carrier in assembled position on the containers with the handle positioned in encircling relationship thereto for manual grasping thereof; and

FIG. 6 is a perspective view of the carrier package including a plurality of containers retained by the sheet plastic carrier, and showing the handle in position for grasping thereof.

Referring now in greater particularlity to the drawings, and first to FIG. 6, there is shown a carrier package unit **10** including a plurality of containers **20** of generally cylindrical cross section having beads or annular enlargements **22** adjacent the ends of the containers, a carrier or receptacle **32** for retaining the containers in substantially parallel and abutting relationship as will become apparent, and a handle means **36**.

In forming the package unit **10**, a substantially flat blank **30** as seen in FIGS. 1–2, and having integrally attached container carrying and handle portions **32**, **36** respectively, is initially provided. The container carrying portion **32** has a plurality of constrictive and elongated apertures **34** formed therein which are adapted to stretch and deform, as will subsequently appear, for retaining containers and the like. The container carrying portion **32** is initially integrally connected to the handle portion **36** by readily rupturable weakened portions or areas **38** along an outer marginal portion of the carrier or receptacle **32**. Such a construction facilitates the assembly of the carrier device to the containers, and yet provides a handle strap arrangement which is most desirable from the standpoint of carrying or transporting the containers.

Each blank **30** can be formed in single die cut or extruded units if desired, but preferably are also attached to each other by readily rupturable weakened areas, similar to areas **38**, to form a strip or succession of such blanks. The blanks **30** in strip form can be attached to one another so that there will be alternating handle and carrier portions, or it is possible to orient the carrier blanks with all handle or container carrying portions on the same side of the strip.

The method of assembling the blank **30** to the containers is shown in FIGS. 3–5. In FIG. 3, the handle portion **36** is folded underneath the carrier **32**, and then the blank is positioned in close proximity to the containers. In its preferred form, the handle or endless band **36** has a transverse dimension which is approximately one-half of the transverse measurement of the carrier for positioning the outer free extremity of the handle or endless band **36** in a plane extending generally transverse to and through the central portion of the carrier, the plane also dividing or arranging the apertures **34** in two substantially parallel rows of three apertures each. It is also preferable that the internal peripheral dimension of the handle or endless band **36** be large enough

to accommodate a row of containers since this will enhance the assembly operation as is discussed below.

When the handle or endless band **36**, with the size and construction above described, has been folded underneath the carrier **32**, the containers **20** can then be inserted within the apertures **34** with one row of containers also being received by the handle or endless band **36**. The assembly of the containers within the aperture **34** of the carrier **32** will cause the material adjacent the apertures to deform and stretch to the shape of axially directed necks for gripping and resiliently engaging the container. As shown in FIGS. 4–5 of the drawings, these axially directed necks **40** will underlie the annular enlargements **22** of the containers to prevent inadvertent removal from the carrier. Although this is preferred arrangement, it is also possible to have the material adjacent each of the apertures **34** engage and grip the containers along the mid portion thereof, or engage containers having no beads or annular enlargements at their ends.

The carrier or container carrying portion **32** will remain attached to the endless band **36** by way of the readily rupturable weakened areas **38** after assembly with the containers. Thus, it will be necessary to sever or break the readily rupturable weakened areas **38** for separating the endless band **36** from the carrier **32** in order to permit the endless band **36** to serve as a handle strap for carrying or transporting the containers. The weakened areas **38** should provide only minimum resistance to separation by hand so that the handle can be readily torn from the carrier. Thereafter, the handle can be easily positioned in encircling relationship relative to the carrier intermediate the planes established by the juxtaposed rows of containers.

The containers can be shipped or displayed either with the endless band **36** attached to or separated from the carrier. In either case, stacking of similarly constructed package devices **10** one atop the other poses no problem. Where the endless band remains attached to the carrier as shown in FIG. 4, there will be no interference with a package positioned above or below. If the endless band **36** is separated from the carrier **32** as shown in FIG. 5, the force of gravity will position the endless band **36** generally intermediate the juxtaposed rows of containers with only the upper portion exposed above the tops thereof.

It is to be understood that while the preferred carrier blank **30** and the method of assembling the same to a plurality of containers or the like has been shown and described, other forms and variations thereof are possible. For example, foot members **42** may be provided adjacent the outer free extremity of the endless band **36**, and having restricted openings **44** for engaging the central area of the carrier or container carrying portion **32** for holding the band in an upright position extending substantially transverse to the carrier. Also, it would be possible to increase the width of the endless band portion immediately adjacent the carrier **32** as indicated by the numeral **46** to provide a printing area if desired. The size of this printing area will depend directly upon the size of the opening needed to receive the containers. The present invention further contemplates that while the carrier will normally comprise a sheet having at least six apertures, the carrier and endless band may be modified for retaining and transporting only a pair of containers. As shown by the phantom lines in FIG. 1, the carrier and the endless band can be reduced proportionately to form a carrier **32***a* having only a pair of oppositely arranged apertures formed therein, and an endless band means **36***a* also reduced in size.

It will be apparent that the containers **20** shown in the drawings are of the beverage or beer can variety; however, it is to be understood that the term "containers" as used herein includes any articles or objects of varying size and configuration which are suitable for packaging.



From the foregoing, it will now be appreciated that the carrier or receptacle of the present invention facilitates the handling and assembly thereof to a plurality of containers in a rapid and efficient manner, and at the same time provides an improved handle arrangement of greater effectiveness than heretofore known prior art devices.

While the preferred embodiments of the present invention have been shown and described herein, it is obvious that many structural details may be changed without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A carrier for retaining and transporting a plurality of containers or the like, comprising a generally flat blank made of elastic material and having container carrying and handle portions, said container carrying portion having container embracing and retaining means for resisting container withdrawal, said handle portion being in the form of an endless band means initially connected to said container carrying portion along an outer marginal portion thereof by readily rupturable weakened areas, said handle portion adapted to be separated from said container carrying portion and positioned in encircling relationship thereto for transporting said containers.

2. A carrier for retaining and transporting a plurality of containers or the like, comprising a generally flat blank made of elastic material and having container carrying and handle portions, said container carrying portion having container embracing and retaining means arranged on opposite sides of a central area thereof for resisting container withdrawal, said handle portion being in the form of an endless band means initially connected to said container carrying portion along an outer marginal portion thereof by readily rupturable weakened areas, said handle portion adapted to be separated from said container carrying portion and positioned in encircling relationship thereto so as to underlie the central area thereof for transporting said containers.

3. The carrier as defined in claim 2 wherein said endless band means is provided with means for engaging opposite sides of said container carrying portion in the vicinity of the central area thereof to maintain said endless band means in a substantially upright position.

4. The carrier as defined in claim 2 wherein said endless band means is provided with a printing area.

5. A carrier for retaining and transporting a plurality of containers or the like comprising a sheet of stretchable plastic material having a plurality of generally oppositely arranged apertures therein, the material adjacent each of the apertures having a cross sectional configuration whereby upon the insertion of containers axially through said apertures, the surrounding material is stretched for gripping and resiliently engaging the containers to resist container withdrawal, and an endless handle means initially integrally connected to an outer marginal portion of said sheet, said handle means adapted to be separated from said carrier and positioned in encircling relationship thereto intermediate said oppositely arranged apertures and the containers adapted to be received therein for transporting the containers.

6. A receptacle for retaining and transporting a plurality of containers or the like, comprising a generally flat carrier blank made of elastic material and having container carrying and handle means joined to each other by readily rupturable weakened areas, said container carrying means having a plurality of apertures arranged on opposite sides of a central portion thereof, the material adjacent each of said apertures being substantially continuous and having a peripheral dimension less than that of a corresponding container whereby to cause the material adjacent each aperture to stretch upon the insertion of the containers for gripping and resiliently engaging the same, said handle means being in the form of an endless band and adapted to be separated from the container carrying means and positioned in encircling relationship

thereto so as to underlie the central portion thereof for transporting the containers.

7. A receptacle for retaining and transporting a plurality of containers, comprising a generally flat blank made of resilient, elastic and deformable material, and having container carrying and handle portions, said container carrying portion being provided with a plurality of apertures arranged in two substantially parallel rows, the material adjacent each of said apertures being substantially continuous and having a peripheral dimension less than that of a corresponding container whereby to cause the material adjacent each aperture to stretch and deform upon the insertion of the containers for gripping and resiliently engaging the same, said handle portion being in the form of an elongated endless band hinged to said container carrying portion along an outer marginal portion thereof by readily rupturable weakened areas, said endless band having a transverse dimension approximating one-half of the transverse measurement of said container carrying portion and adapted to be folded under said container carrying portion prior to the insertion of said containers within said apertures for positioning the outer free extremity thereof intermediate the containers when assembly has been completed, said endless band adapted to be separated from said container carrying portion and positioned in encircling substantially transverse relationship thereto whereby to provide a separate handle means for transporting the containers.

8. A receptacle for retaining and transporting a plurality of containers having curvilinear cross sections and annular enlargements on at least one end thereof, comprising a resilient, elastic and deformable sheet of plastic material having a plurality of apertures therein elongated lengthwise of the sheet and arranged in two substantially parallel rows, the material adjacent each of said apertures being substantially continuous and having a peripheral dimension less than that of a corresponding container whereby to cause the material adjacent each aperture to stretch and deform to the shape of axially directed necks upon the insertion of the containers for gripping and resiliently engaging the same beneath the annular enlargements thereof, said handle portion being in the form of an elongated endless band means hinged to said container carrying portion along an outer marginal portion thereof by readily rupturable weakened areas, said endless band means having a transverse dimension approximating one-half of the transverse dimension of said container carrying portion and adapted to be folded under said container carrying portion prior to the insertion of said containers within said apertures for positioning the outer free extremity of said endless band in a plane intermediate said two substantially parallel rows of apertures and generally transverse to said container carrying portion, the internal peripheral dimension of said endless band permitting the entry of one row



of containers therein when positioned below said container carrying portion, said endless band means thereafter adapted to be separated from said container carrying portion and positioned in encircling relationship thereto generally within the plane intermediate said two rows of apertures for transporting the containers.

9. The method of assembling a carrier made of stretchable material to a plurality of containers or the like, said carrier having at least one pair of oppositely arranged constrictive apertures therein and being frangibly hinged along an outer marginal portion thereof to an elongated endless band means having a transverse dimension approximately one-half of the transverse measurement of said carrier and an inner peripheral dimension greater than the outer peripheral dimension of at least one container, comprising the steps of folding said endless band means underneath said carrier, positioning said endless band means and carrier in close proximity to said containers, inserting said containers within said apertures with at least one container positioned within said endless band means, the material adjacent each aperture adapted to stretch for gripping and resiliently engaging the containers, and thereafter separating the endless band means from the carrier to enable it to be positioned in encircling relationship thereto for transporting said containers.

10. The method of assembling a carrier made of stretchable material to a plurality of containers or the like, said carrier having at least one pair of oppositely arranged constrictive apertures therein and being frangibly hinged along an outer marginal portion thereof to an elongated endless band means having a transverse dimension approximately one-half of the transverse measurement of said carrier and an inner peripheral dimension greater than the outer peripheral dimension of at least one container, comprising the steps of folding said endless band means underneath said carrier, positioning said endless band means and carrier in close proximity to said containers, inserting said containers within said apertures with at least one container positioned within said endless band means, the material adjacent each aperture adapted to stretch for gripping and resiliently engaging the containers, separating the endless band means from the carrier, and thereafter positioning it in encircling relationship thereto for transporting said containers.


**References Cited by the Examiner**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,874,835 | 2/1959 | Poupitch | 53—48 X |
| 3,203,582 | 8/1965 | Waggner | 206—65 X |
| 3,232,422 | 2/1966 | Whyte | 206—56 |



TRAVIS S. McGEHEE, *Primary Examiner.*

R. L. FARRIS, *Assistant Examiner.*