

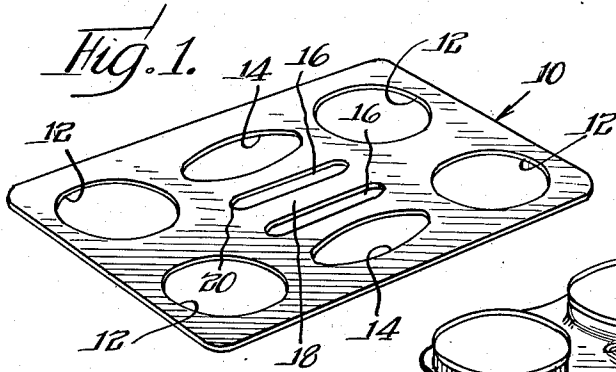
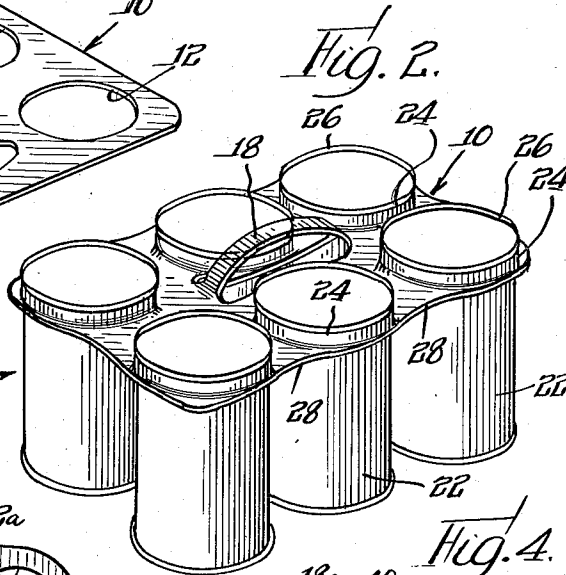
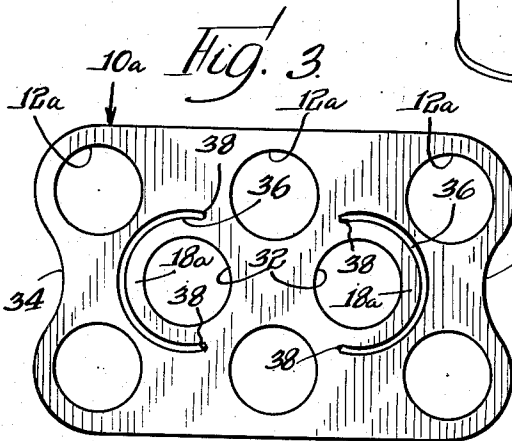
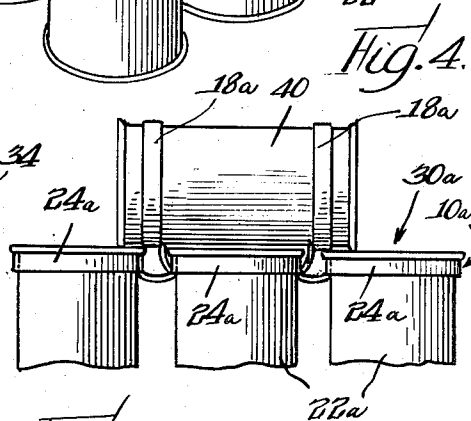
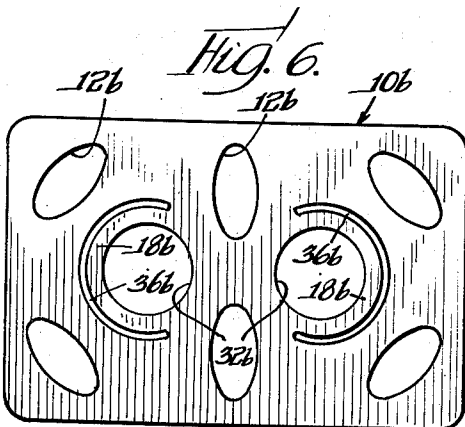
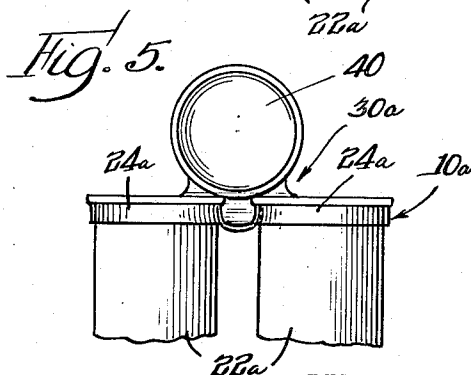
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CONTAINER CARRIER AND PACKAGE

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CONTAINER CARRIER AND PACKAGE

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3 Claims. (Cl. 206-65)

This invention is concerned with a carrier for carrying containers, for example, beer cans, and the resulting package.

As is well known, it is common practice to secure a plurality of cans together for carrying as a package. For many years, pasteboard has been used as a carrier. However, pasteboard packages are expensive and difficult to assemble with cans. Furthermore, they tend to be too weak to resist dropping of the package without rupture, or else to be so strong that they are very difficult to open. Metal clips also have been used to secure adjacent cans together, but there has not been any great commercial activity to date using such clips.

In the copending application of O. J. Poupitch for "Container Carrier and Package," Ser. No. 775,333, filed December 1, 1958, owned by the assignee of this application, and now U.S. Patent 2,874,835, there is disclosed and claimed a superior type of carrier formed of a single sheet of unsupported plastic material, such as polyethylene. The sheet of plastic material is provided with suitable apertures so that containers, such as cans, might be pushed through the apertures, thereby stretching and deforming the material adjacent the apertures into frusto-conical lips locking beneath the container beads. This application is concerned with a carrier of somewhat the same type.

It is an object of this invention to provide an improved container carrier of plastic sheet material, of the type just noted.

It is another object of this invention to provide such a sheet plastic container carrier having means adapted to be displaced from the surface thereof to provide handle means for carrying the package resulting from association of the carrier with a plurality of containers.

A further object of this invention is to provide a carrier for containers and the like which carrier comprises a horizontal plastic sheet having straps or bands defined therein for movement out of the plane of the sheet, which bands in some instances can be used as handles, or as retaining devices for an additional container.

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

FIG. 1 is a perspective view of a container carrier constructed in accordance with the principles of this invention;

FIG. 2 is a perspective view showing the carrier as associated with a plurality of containers and forming a package unit;

FIG. 3 is a plan view of a modified form of the carrier;

FIG. 4 is a fragmentary side view of the carrier of FIG. 3 as associated with a plurality of containers;

FIG. 5 is an end view thereof; and

FIG. 6 is a plan view of a further modified form of the invention.

Referring now in greater particularity to the drawings, and first to FIGS. 1 and 2, there is provided a carrier identified generally by the numeral 10, comprising a rectangular sheet of plastic material, polyethylene being one preferred example. The sheet 10 is provided adjacent its four corners with four circular apertures 12. Intermediate these apertures, relatively toward the longitudinal sides

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of the carrier, there are two elliptical or elongated apertures 14. These apertures do not necessarily follow a regular geometric figure, but are smoothly curved throughout, and are elongated longitudinally of the carrier. Intermediate the apertures 14 there is provided a pair of spaced, elongated apertures or slots 16 defining between them a strip 18. The slots 16 are provided with rounded ends 20, to prevent tearing of the material.

The carrier 10 is associated with a plurality of containers 22, as in FIG. 2, by forcing the carrier down over the containers, or conversely, by forcing the containers up through the carrier. This causes the material around each of the apertures 12 and 14 to deform and stretch upwardly to form lips 24 projecting from the surface of the sheet, and locking beneath the beads 26 of the containers 22, herein illustrated as cans, such as beer cans. In each instance, the lips 24 are substantially continuous and uninterrupted, and form substantially surface engagement with the can, whereby to resist retrograde withdrawal. However, the cans be withdrawn without too much difficulty by moving them up through the carrier. In other words, they are removed in the same direction as they are inserted.

The elongated shape of the apertures 14 is of considerable importance. It obviously provides clearance for the slots 16 defining the strap 18, which serves as a handle, as will be apparent in FIG. 2. However, since the minor axis or transverse dimension of each of the apertures 14 is substantially less than the can diameter (the major axis or long dimension is slightly less than the can diameter, similar to the diameter of the apertures 12 relative to the can) the plastic material adjacent the apertures 14 necessarily stretches sideways, and this causes the carrier to draw in longitudinally. Thus, the material in the central portion of the carrier is drawn in longitudinally, leading to scallops 28 between the adjacent apertures, and more important, drawing the ends of the strap 18 somewhat more closely together. Thus, the strap 18 is deformed upwards out of the plane of the sheet carrier 10, as in FIG. 2. Hence, the strap 18 readily serves as a handle to carry the package, hereinafter identified by the numeral 30. As will be apparent, the handle 18 will tend to stretch slightly, also, thereby providing adequate clearance for the knuckles of the user above the tops of the adjacent cans.

A further form of carrier having a strap to be disposed above the top of the carrier is illustrated at 10a in FIGS. 3 and 4. The carrier is generally similar to that of FIG. 1, but has six circular apertures 12a corresponding more or less to the apertures 12 and 14 of FIG. 1. In addition, there are two apertures 32 disposed along the longitudinal center line of the carrier 10a, being uniformly spaced among the apertures 12a. The opposite ends of the carrier are provided with a concave configuration at 34, whereby to conserve material, and to improve stress distribution within the carrier.

The essential distinction of the embodiment of FIGS. 3-5, relative to FIGS. 1 and 2, resides in the provision of a pair of arcuate slots 36 about the apertures 32. These arcuate slots are concave toward one another, and extend in an arc of somewhat over 180°. The slots are terminated by radii 38 to prevent tearing of the plastic sheet material. The arcuate slots 36 coact with the apertures 32 to define arcuate or C-shaped straps 18a extending over slightly more than a semi-circle. As will be apparent, these straps 18a can be readily flexed up out of the surface of the sheet carrier 10a, and therefore could be used directly as handles. However, as shown in FIGS. 4 and 5, it is preferred to deflect the straps 18a up and to stretch them over another can or container 40, which thereby lies above the major portion of the carrier and of the re-

maining cans or containers 22a. As will be apparent, the can or container 40 readily can be grasped manually for carrying of the package 30a.

A further embodiment of the invention is shown in FIG. 6. Like the previous embodiments, the parts are generally similar, and similar numerals are used to identify similar parts, with the addition of the suffix *b*. The embodiment of FIG. 6 is substantially identical with that of FIG. 3, and repetition of description largely is unnecessary. The distinguishing feature is that all of the apertures 12b are elongated. They may be elliptical, or otherwise elongated in the form of smooth curves. As will be apparent from the drawing, the two center apertures 12b are oriented with their longer dimensions transverse of the carrier 10b, while the four corner apertures 12b are oriented diagonally at 45°, the long dimensions of these four apertures being transverse of lines bisecting the angles at the corners of the carrier. The elliptical apertures provide improved stress distribution when the carrier is assembled with containers. In addition, the disposition of the corner apertures facilitates removal of cans or containers therefrom by a tipping action and pulling outwardly away from the corners.

It will now be apparent that a superior sheet plastic carrier has been provided for cans and other containers. In each instance, elongated slots, either straight or arcuate, in the sheet provided straps which are deformable up from the plane of the sheet for carrying of the package of cans and carrier. As has been noted, the strap can be grasped manually, or, in one form of the invention, the pair of straps can be associated with another can, which then serves as a handle.

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

The invention is claimed as follows:

1. A carrier package comprising a plurality of containers having curvilinear cross-sections and annular enlargements, and a sheet of substantially unsupported plastic material having a plurality of curvilinear apertures therein, said sheet of plastic material being resilient, deformable, and elastic, the material at the edge of each aperture being circumferentially continuous and uninterrupted, the peripheral measurement of each aperture being less than that of the corresponding containers whereby the containers, inserted axially through said apertures, stretch and deform the material adjacent the apertures, the material adjacent the apertures being in the form of axially directed necks engaging said containers below said enlargements and resiliently gripping said containers to resist withdrawal thereof, said containers depending from said sheet of plastic material in side-by-side abutting relation whereby to reinforce one another upon carrying of said package, said sheet having arcuate slots therein and holes concentric with the arcs providing strap means of arcuate configuration bendable from the plane of the carrier, and further including an additional container secured by said straps and adapted for manual gripping to lift said package.

2. A carrier for carrying a plurality of containers or the like in side by side substantially abutting relation and

having peripheral enlargements at one end; and comprising a substantially unsupported sheet of plastic material, said sheet of plastic material being resilient, deformable, and elastic and having spaced elongated and generally similar substantially parallel slit means along the center portion of the sheet and defining therebetween a handle strap portion, said sheet having a plurality of apertures therein with a central pair of opposed apertures on opposite sides of the handle strap portion and elongated in the direction of the handle strap portion to present major axes prior to association of containers with the apertures, each of said apertures having a peripheral measurement less than the periphery of a corresponding container and the material at the edge of each aperture being circumferentially continuous and uninterrupted, the apertures in the sheet being intended for association with the containers whereby such containers can be inserted through the apertures from a given direction when the material adjacent the apertures is stretched and deformed to form circumferentially continuous lips embracing the containers beneath said peripheral enlargements and resiliently gripping the containers, the association of containers with the central pair of apertures being effective to bow the handle strap portion out of the plane of the sheet by the shortening of the major axes of said pair of apertures with resultant shortening of the sheet lengthwise of the handle strap portion.

3. A carrier package comprising a plurality of containers having curvilinear cross-sections and annular enlargements, and a sheet of substantially unsupported plastic material, said sheet of plastic material being resilient, deformable and elastic, and having spaced elongated and generally similar substantially parallel slit means along the center portion of the sheet and defining therebetween a handle strap portion, said sheet having a plurality of apertures therein with a central pair of opposed apertures on opposite sides of the handle strap portion and elongated in the direction of the handle strap portion to present major axes prior to association of the containers with the apertures, the material at the edge of each aperture being circumferentially continuous and uninterrupted, the peripheral measurement of each aperture being less than that of the corresponding containers whereby the containers, inserted axially through said apertures, stretch and deform the material adjacent the apertures, the material adjacent the apertures being in the form of axially directed necks engaging said containers below said enlargements and resiliently gripping said containers to resist withdrawal thereof, said containers depending from said sheet of plastic material in side by side abutting relation whereby to reinforce one another upon carrying of said package, the inserted containers in the central pair of apertures shortening the major axes thereof with resultant shortening of the sheet lengthwise of the handle strap portion to bow said handle strap portion out of the plane of the sheet.

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