May 28, 1968 M. S. WOZNIAK 3,385,626

PLASTIC SHEET CARRIER DEVICE

Filed Sept. 21, 1966

Fig. 1

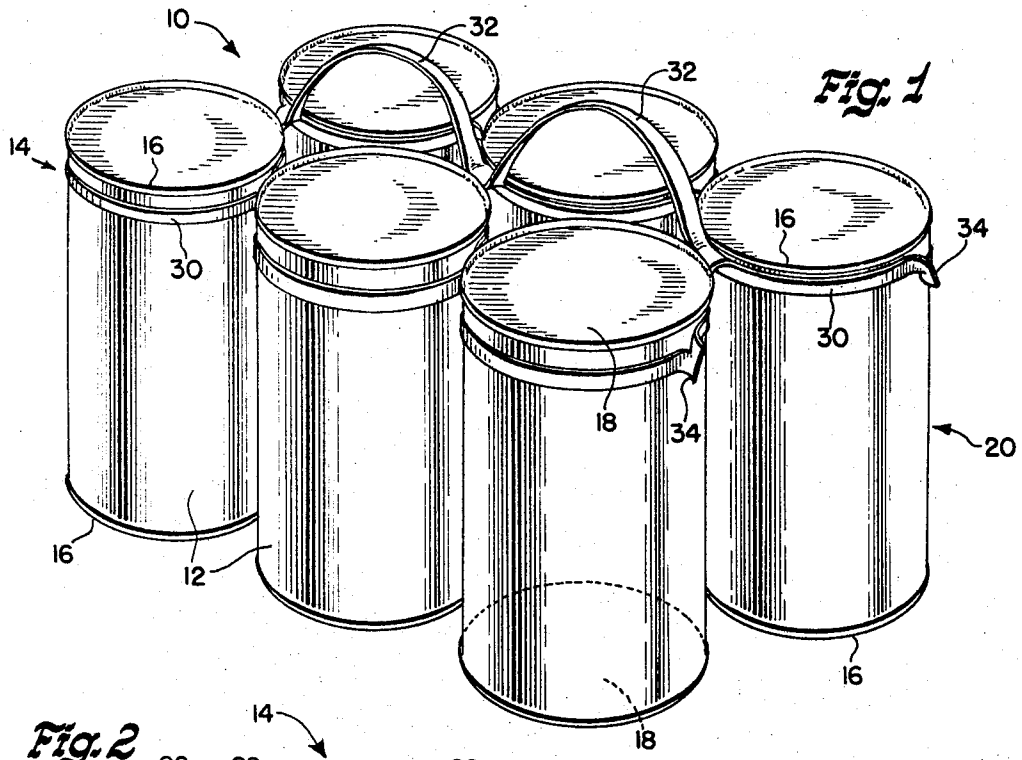


Fig. 2

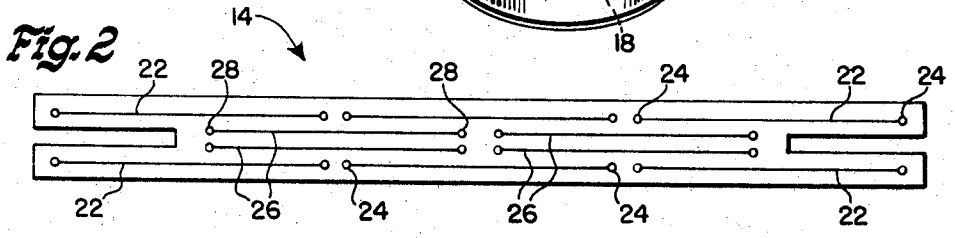
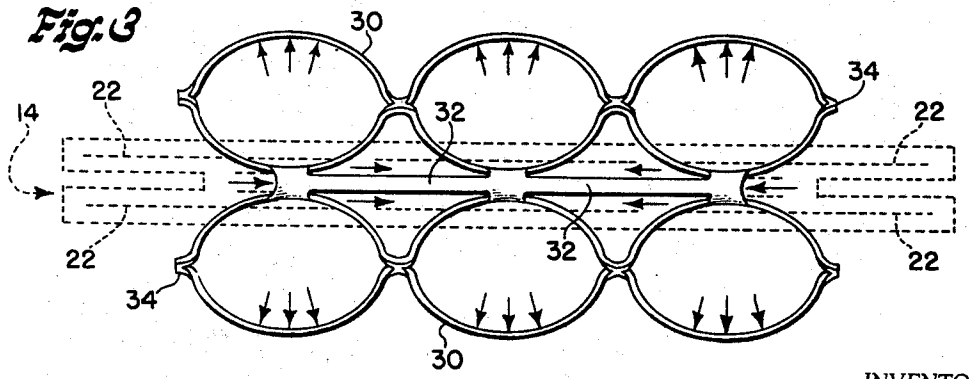


Fig. 3



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PLASTIC SHEET CARRIER DEVICE

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ABSTRACT OF THE DISCLOSURE

A plastic sheet carrier device for carrying a plurality of containers and the like wherein the carrier device has a scrapless construction, but which when transversely stretched, provides a plurality of apertures for receiving containers in conjunction with an integral handle arrangement.

The multi-packaging industry in the last several years has turned with favor upon plastic sheet carrier devices of the type disclosed and claimed in O. J. Poupitch Patent No. 2,874,835 dated Feb. 24, 1959. There have been a number of improvement patents in plastic sheet carrier devices which have disclosed and claimed such features as improved forms of separate and integral handle arrangements, various types of tear tab features which facilitate removal of the containers from the carrier and other features too numerous here to mention.

In all forms of such plastic sheet carrier devices, there has been a desire to provide a carrier device made from a minimum amount of material without sacrificing the carrier strength and its ability to hold and support containers for carrying purposes. One suggested patented approach which is particularly related to the present invention involves the formation of a substantially scrapless plastic sheet carrier device as disclosed and claimed in U.S. Patent No. 3,044,230, but with the added feature of an integral handle strap or straps to promote that carrying of the containers.

It is one object of the present invention to provide an improved plastic sheet carrier device as well as an improved container package resulting from the combination of a carrier device as disclosed herein with a plurality of containers.

Another object of the present invention is the provision of a plastic sheet carrier device of substantially scrapless construction which incorporates at least one integral handle arrangement.

A further object of the present invention is the provision of a carrier device, as set forth in the preceding objects, and having an integral handle strap arrangement which is capable of being deflected a substantial distance above the tops of containers associated with the herein disclosed carrier device to facilitate carrying of containers.

Other and further objects and advantages of the present invention are attained by the provision of a plastic sheet carrier blank made from a resilient, deformable and elastic material and including a plurality of pairs of first slits formed adjacent the outer margin of the carrier device which are capable of being stretched and deformed for resiliently gripping and embracing individual containers positioned within each of said first slits, and at least one pair of second slits disposed intermediate the pairs of first slits which are capable of being deflected above the tops of the containers positioned within the first slits to form an integral handle strap for transporting the assembled group of containers.

Reference is now made to the drawing wherein:

FIG. 1 is a perspective view of a container package incorporating a plastic sheet carrier device of the type constructed in accordance with the teachings of the present invention;

FIG. 2 is a top plan view of a carrier blank of the present invention as it is initially formed; and

FIG. 3 is a top plan view showing the carrier blank as it is expanded from its initial formation as represented by the dotted lines to a point where sufficient deformation has occurred, as represented by the full line showing, to permit the carrier to be assembled to a plurality of containers as illustrated in FIG. 1 of the drawing.

Referring now in greater particularity to the drawings, and first to FIG. 1 there will be seen a container package **10** which includes a plurality of containers **12** which are assembled and retained in the well known six pack cluster formation by a plastic sheet carrier device **14**. The illustrated containers **12** are of the conventional cylindrical variety having upper and lower circumferentially protruding beads or chimes **16** which join the top and bottom sections **18** of each container to its cylindrical side wall **20**. It will be understood, of course, that other forms of containers and objects may be used with the carrier device of the present invention as will be readily apparent.

The carrier device **14** comprises an elongated strip or band of plastic sheet material which is resilient, deformable and elastic, such as polyethylene. The strip or band of plastic material is provided with a plurality of pairs of first slits **22** located adjacent the elongated marginal edge portions of the strip and longitudinally arranged thereon. In the embodiment shown, there are three pairs of first slits **22**, each of which are capable of being stretched and elongated to a shape for receiving the containers **20** as will be discussed in detail hereinafter. It will be noted that the slits **22** are substantially uniformly spaced, both in a longitudinal and transverse sense, on the strip. Each of the slits **22** terminates at its opposite ends by small circular holes **24** which prevent the slits **22** from tearing into larger areas of the plastic material.

In addition to the plurality of pairs of first slits **22** located adjacent the outer or marginal edge portions of the strip, there are a plurality of pairs of second slits **26** which are disposed intermediate the plural pairs of first slits generally in the central section of the elongated strip **14**. As is the case with the slits **22**, the slits **26** are substantially identical in size and terminate at opposite ends thereof in small circular holes **28** which prevent the slits **26** from tearing uninterrupted areas of the plastic material.

It will be noted that the slits in each of said respective plural pairs of first and second slits are transversely aligned with the slits in the same group, but are not aligned with the slits in the other group. Specifically, the slits **26** are arranged in pairs with the slits in each pair being transversely aligned with each other in the same manner as each pair of first slits **22**. Each pair of second slits **26** are arranged relative to the plural pairs of first slits **22** to overlap more than one pair of first slits **22**, and this will be apparent upon an inspection of FIG. 2 of the drawing. Each pair of second slits **26** overlap the adjacent ends of juxtaposed pairs of first slits **22** by substantially the same amount to provide symmetry to the carrier which facilitates carrying and transportation of the containers as will become apparent.

The carrier **14** preferably is part of a continuous strip of similar carriers which are joined to one another along weakened sections. Individual carrier blanks are separated from each other along the weakened sections as the carrier is applied or assembled to a plurality of containers. The slits and holes heretofore discussed may be formed in each carrier by any convenient means, such as in a punch press.

Assembly of each carrier **14** to a plurality of containers may be accomplished by the machinery and techniques which are broadly outlined in U.S. Patent No. 2,929,181, dated Mar. 22, 1960, issued to O. J. Poupitch.

It will be apparent that the carrier **14** must be stretched transversely of a configuration shown in FIGURE 2 in order to be assembled to a plurality of containers. When this is done after the manner shown in the aforementioned patent, each of the slits **22** and **26** will open up from the dotted line configuration shown in FIG. 3 to the full line position illustrated. The slits **22** assume the shape of substantially elliptical apertures while the slits **26** open up to more or less diamond-shaped apertures. As the slits **22** and **26** assume their elliptical and diamond-shaped configurations, the material pulls in along the longitudinal sides of the strip to aid in the formation of the carrier shown in FIG. 3 of the drawing.

When the carrier **14** has been opened up to the position shown in FIG. 3, to the material **30** surrounding each elliptical aperture formed from the first slits **22** provides an aperture having a peripheral measurement less than the periphery of an individual container **20** with which it is to be associated. Upon subsequent stretching and deformation of the surrounding material portions **30**, the resilient and elastic characteristics of the material from which the carrier **14** is made will permit the material portions **30** to resiliently grip and embrace an individual container around its circumferential side wall to resist container withdrawal from the elongated plastic strip or carrier **14**. In other words, the surrounding material portions **30** form lips which protrude up from the plane of the carrier blank which resiliently grip and embrace the side walls of the containers **20**, and preferably lock beneath the upper bead **16** of each container. As a result, containers so held by the carrier **14** cannot be readily withdrawn downwardly, but the containers can either be twisted from the surrounding material portions **30** or can be pushed completely through the carrier with the upper and lower cylindrical beads **16** in either case aid in camming the containers **20** from the carrier.

Carrying of a plurality of containers **20** assembled to the carrier **14** as shown in FIG. 1 of the drawing is facilitated by the straps or material portions **32** which are formed when the carrier stretched to the full line positions shown in FIG. 3. As pointed out above, the longitudinal drawing in of the carrier upon transverse expansion thereof will draw the ends of each strap **32** somewhat more closely together. Each strap **32** is thus deformed upwardly out of the plane of the carrier blank as shown in FIG. 2. Hence each strap **32** is capable of readily serving as a handle to carry the package. Since the carrier **14** is stretched even beyond the full line position shown in FIG. 3 in order to assemble the carrier to a plurality of containers, the straps **32** will be deflected even further upwardly, thereby providing adequate clearance for the knuckles of a user above the tops of the containers as is visible in FIG. 1 of the drawing.

As pointed out above, each slit in a pair of second slits overlaps juxtaposed pairs of first slits by equal amounts, and this will enable the straps **32** to be positioned in a substantially central position with respect to a cluster of four containers. In the embodiment illustrated in the drawing, there are a pair of straps **32**, each of which are disposed substantially centrally of a cluster of four containers **20**, and in view of this position, it will be readily apparent that the straps **32** are located in such a manner that the weight of the containers will be equally distributed to facilitate the carrying of containers.

While the illustrated embodiment shows three pairs of first slits **22** and two pairs of second slits **26** for holding and carrying six containers by a pair of strap portions **32**, it is to be understood that the present invention is not limited to this form only. It is conceivable that a single material strap can be used in place of the double strap arrangement illustrated, and it is also likely that the carrier will carry only four containers by a single strap structure. Other modifications of this type are possible and are contemplated by the present invention.

When the carrier **14** is assembled to the containers **20** as shown in FIG. 1 of the drawing, opposite longitudinal ends of the carrier will form finger-engaging tab portions **34** which are capable of being grasped and torn to remove the containers from the carrier. Thus, the plastic sheet carrier of the present invention provides an additional container removal aspect over and above the ability to remove the containers in the conventional manner as outlined above.

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 ought to be understood as forming a part of this invention, in so far as they fall within the spirit and scope of the appended claim.

I claim:

1. A one-piece carrier blank capable of being distorted to a shape for carrying a plurality of containers or the like arranged in side-by-side substantially abutting and parallel relationship comprising, a substantially unsupported elongated plastic strip made from a resilient, deformable and elastic material having a plurality of pairs of first slits located adjacent the elongated marginal edge portions of the strip and two pairs of second slits disposed intermediate the plural pairs of first slits generally in the central section of the elongated strip, each of said pairs of first and second slits being substantially identical in size with the slits in each of said respective plural pairs of first and second slits being transversely aligned with the slits in the same group, but nonaligned with the slits in the other group, each pair of second slits being arranged relative to the plural pairs of first slits to overlap more than one pair of first slits, all of the slits in said elongated plastic strip being openable upon transverse stretching thereof whereby the margin of each slit in the plural pairs of first slits forms an aperture having a peripheral measurement less than the periphery of an individual container and upon subsequent stretching and deformation thereof being capable of resiliently gripping and embracing an individual container to resist container withdrawal from the elongated plastic strip, the material portions of the elongated plastic strip disposed intermediate each pair of second slits forming integral handle straps for transporting the assembled group of containers, the opposite ends of each said integral handle strap being moved toward each other when the elongated plastic strip is assembled to the containers to position and maintain said integral handle straps above the tops of said containers for easy grasping thereof.

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