

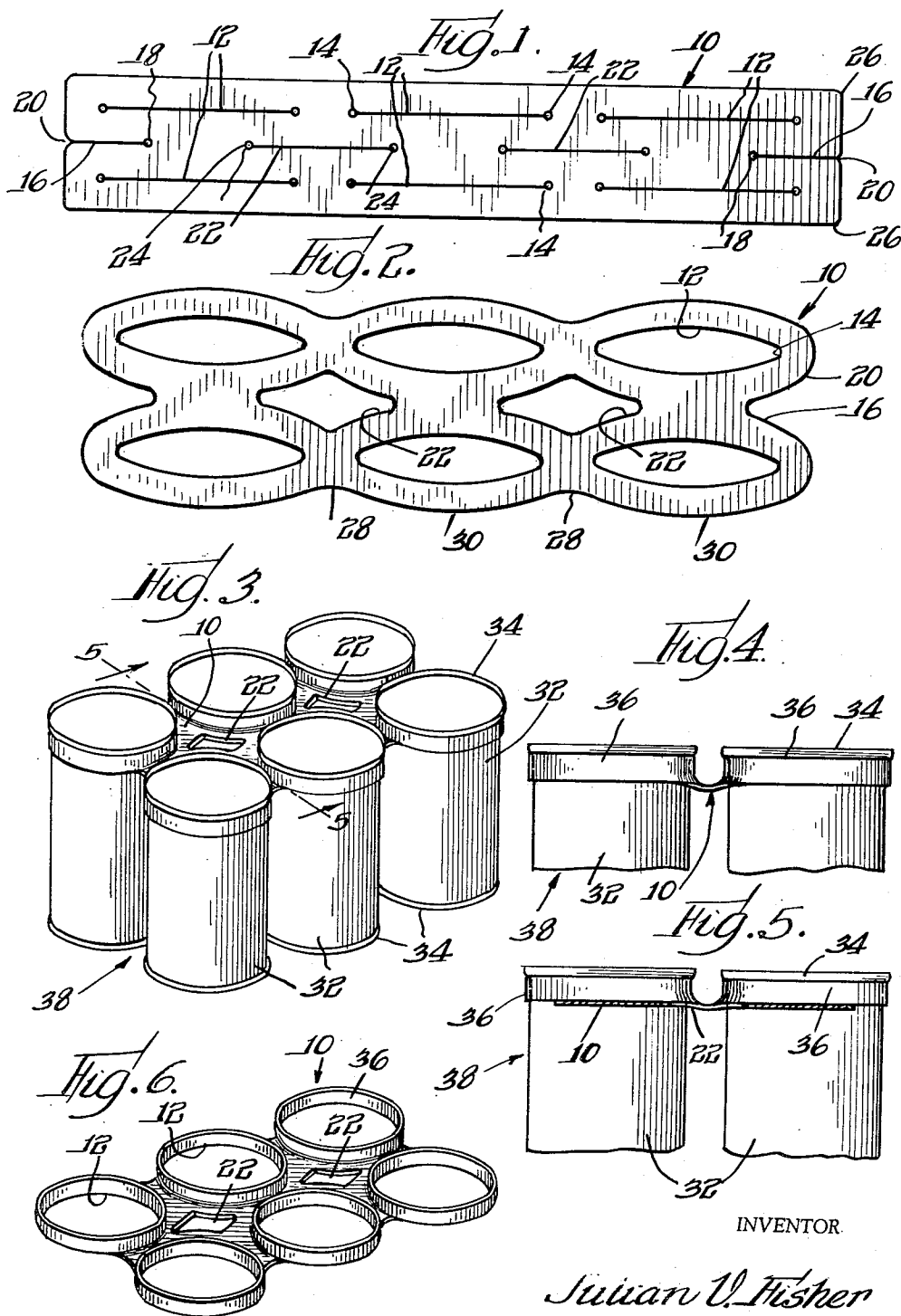
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CONTAINER CARRIER AND PACKAGE

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3,044,230

CONTAINER CARRIER AND PACKAGE

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6 Claims. (Cl. 53-35)

This invention is concerned with a carrier for containers, and the resulting container package.

It is common practice to merchandise containers in groups. Such groups generally are secured together by some sort of carrier or retaining device to form a package. Pisteboard has been used commonly for securing together a plurality of containers, such as beer cans, but has not proved entirely satisfactory. Pisteboard carriers are somewhat difficult to assemble with containers, and after assembly tend either to be too weak to resist separation of containers, as upon dropping of the package, or to be so strong that it is very difficult to separate the containers from the carrier. Various metal clips also have been devised for securing containers together in adjoining relation. For various reasons, such clips have not seen extensive commercial use.

In the copending application of O. J. Poupitch, "Container Carrier and Package," S.N. 775,333, filed December 1, 1958 and owned by the same assignee, now U.S. Patent 2,874,835, a superior type of container carrier and package are disclosed. In the Poupitch application, a sheet of plastic material is provided with apertures, either circular or elongated, through which containers, such as cans, are inserted. The plastic material adjacent the apertures is stretched and deformed, and aggressively grips the walls of the cans, forming a surface engagement therewith and locking beneath the beads of the cans to resist retrograde withdrawal. The present invention pertains to a somewhat similar plastic carrier.

Accordingly, it is an object of this invention to provide an improved plastic carrier and container package.

It is furthermore an object of this invention to provide such a plastic carrier and resulting container package which is of substantially scrapless construction.

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

FIG. 1 is a plan view of the carrier in accordance with this invention as initially formed;

FIG. 2 is a plan view showing the carrier after partial deformation thereof for association with a plurality of cans or other containers;

FIG. 3 is a perspective view of the package resulting from association of the carrier with a plurality of cans or the like;

FIG. 4 is an end view of the package of FIG. 3;

FIG. 5 is a cross-sectional view along the line 5-5 in FIG. 3; and

FIG. 6 is a perspective view of the carrier after association with the cans, but with the cans removed.

Referring now in greater particularity to the drawings, and first to FIG. 1, there will be seen a container carrier designated by the numeral 10, in the shape in which it is initially formed. The carrier 10 comprises an elongated strap or band of plastic sheet material, polyethylene being one preferred example. The strip or band of plastic sheet material is provided with pairs of longitudinally elongated straight slits 12, spaced substantially uniformly longitudinally of the strap. The spacing between each pair of slits is substantially the spacing from each slit to the adjacent edge. Each of the slits is terminated at its opposite ends by small circular holes 14. These holes prevent the slits from tearing on into the plastic material.

In addition, there are slits provided on the longitudinal

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center line of the strip, including a pair of slits 16 extending in from the opposite ends of the strip and overlapping the adjacent pairs of apertures 12. These slits also are terminated by small circular holes 18. The ends of the strip are provided with V-shaped indentations 20 leading into the slits 18. In addition, there are two intermediate slits 22 on the longitudinal center line, terminated by small circular holes 24. The slits 22 overlap the adjacent ends of the slits 12, by substantially the same amount as the slits 16 overlap the adjacent ends of the slits 12.

The slits and holes heretofore discussed may be formed in the carrier by any convenient means, such as in a punch press. Furthermore, a continuous strip of substantial length could be treated, and cut off at proper intervals to form the carrier 10. Furthermore, the carriers 10 could be formed from a blank much wider than that shown, with several carriers being formed simultaneously side by side. As will be apparent, in addition to the foregoing, the corners preferably are rounded off as at 26.

Following completion of formation of the carrier 10, when it is desired to use the carrier, the carrier is stretched transversely to the configuration shown in FIG. 2. The slits 12 open up to more or less elliptical apertures. The slits 22 open up to more or less diamond shaped apertures, and the V-shaped indentations 20 and slits 16 open up to large V-shaped indentations. Similarly, the material pulls in at 22 along the longitudinal sides of the strip, and provides an outward bow at 30 adjacent each of the apertures 12.

The carrier, in the condition of FIG. 2, is associated with a plurality of containers 32, illustrated as cans of the usual cylindrical variety having upper and lower circumferential, protruding beads 34. The material immediately around each aperture is stretched into a more or less cylindrical band 36 forming a surface engagement with the complementary can. Another way of looking at it is that the material at 36 becomes lips protruding up from the plane of the carrier 10. In any event, the bands or lips 36 lock beneath the beads 34, and tightly grip the cans 32. Accordingly, the cans cannot readily be withdrawn downwardly. On the other hand, the cans can be pushed completely through the carrier, the direction of deflection of the lips or bands 36 allowing the beads 34 at the bottoms of the cans to cam through the carrier without too much difficulty. The apertures 22 readily can be grasped by the thumb and a finger for lifting and carrying of the package 38 comprising the containers 32 and the carrier 10.

The shape of the carrier as applied to the cans, as just described, is well illustrated in FIG. 6. As will be apparent, the resilience of the carrier tends to return it to its initial shape, and the carrier would not remain of its own accord in the position shown in FIG. 6, unless it had been installed on cans for a great length of time, so as to take a permanent set. Hence, it will be understood that FIG. 6 represents the shape of the carrier when it is applied to the cans, and does not necessarily represent the shape immediately after removal from the cans.

As will be apparent, the apertures resulting from the slits 12 are stretched upon insertion of the cans. The material at the margin of each aperture is circumferentially continuous and uninterrupted, whereby the lips or bands deformed from the plane of the carrier form a particularly tenacious or aggressive grip on the cans, resisting retrograde withdrawal. As will further be apparent, the provision of the carrier only with slits, and very small terminating holes, substantially eliminates scrap. Hence, the carriers make a most efficient use of material. Furthermore, the carriers in unstretched

shape take up a surprisingly small amount of storage room.

The specified example of the invention as herein shown and described is set forth by way of illustration only. Various changes in structure will no doubt occur to those skilled in the art, and will be understood as forming a part of the invention insofar as they fall within the spirit and scope of the appended claims.

The invention is claimed as follows:

1. A carrier blank adapted to be distorted for carrying a plurality of containers or the like having peripheral enlargements at one end and in side by side substantially abutting and parallel relation, comprising a substantially unsupported sheet of plastic material, said sheet of plastic material being resilient, deformable, and elastic and having a plurality of pairs of slits therein identical in size and longitudinal spaced and aligned, the slits of each pair being spaced and aligned transversely, said sheet having a plurality of intermediate slit means disposed in said sheet between the individual slits of a pair and of such longitudinal disposition and dimension to be in overlapping relation with more than one pair of slits, all of said slits being openable upon transverse stretching thereof whereby the margins of each slit of the pairs of slits form an aperture having a peripheral measurement less than the periphery of an individual container, the resiliency and elasticity of said material tending to reclose said slits when opened up, the material at the margin of each slit which forms a container carrying aperture being circumferentially continuous and uninterrupted, the margins of the slits forming container carrying apertures intended for association with the containers whereby such containers can be inserted through said apertures from a given direction when the material adjacent said apertures is further stretched and deformed from the plane of said carrier to form circumferentially continuous bands embracing said containers below the peripheral enlargements and resiliently gripping said containers.

2. A carrier blank adapted to be distorted for carrying a plurality of containers or the like having peripheral enlargements at one end and in side-by-side substantially abutting and parallel relation, comprising a substantially unsupported sheet of plastic material, said sheet of plastic material being resilient, deformable, and elastic and having a plurality of pairs of slits therein identical in size and longitudinally spaced and aligned, the slits of each pair being spaced and aligned transversely, said sheet having a plurality of intermediate slits each of which lies on the longitudinal center line of the carrier blank and overlaps the pairs of slits at its opposite ends, the slits of each pair respectively being positioned laterally substantially midway between the longitudinal center line and the corresponding longitudinal edges of the carrier, each intermediate slit being of such longitudinal disposition and dimension to be in overlapping relation with more than one pair of slits, all of said slits being openable upon transverse stretching thereof whereby the margins of each slit of the pairs of slits form an aperture having a peripheral measurement less than the periphery of an individual container, the material at the margin of each slit which forms a container carrying aperture being circumferentially continuous and uninterrupted, the margins of the slits forming container carrying apertures intended for association with the containers whereby such containers can be inserted into said apertures from a given direction when the material adjacent said apertures is further stretched and deformed from the plane

of said carrier to form circumferentially continuous bands embracing said containers below the peripheral enlargements and resiliently gripping said containers.

3. A carrier blank as set forth in claim 2 and further including a pair of end slits on the longitudinal center line of the carrier, said end slits opening at the ends of the carrier blank and overlapping the ends of the end pairs of slits.

4. A carrier blank as set forth in claim 3 wherein the ends of the slits terminating in the carrier terminate in curvilinear holes to prevent tearing of the plastic material, the end opening slits being relieved at the ends, and the corners of the carrier being rounded.

5. The method of forming a package from a carrier and a plurality of containers or the like having peripheral enlargements at one end and held by the carrier in side-by-side substantially abutting and parallel relation, comprising the forming of a plurality of spaced parallel identical elongated slits of predetermined dimension in a substantially unsupported sheet of resilient, deformable, and elastic plastic material, transversely stretching said carrier blank to form said slits into apertures of a first predetermined dimension having a peripheral measurement less than the periphery of a corresponding container to be inserted therewith, the resiliency and elasticity of said material tending to return said apertures to slits, the margin of the material surrounding each aperture being circumferentially continuous and uninterrupted, further stretching the margins of the slits to a second predetermined dimension while deforming said margins to form circumferentially continuous bands projecting from the plane of the sheet so that containers can be inserted through said apertures from a given direction, and inserting said margins of the slits over said containers embracingly to engage said containers below their peripheral enlargements resiliently to grip said containers.

6. The method of forming a package from a generally rectilinear carrier and a plurality of containers held thereby in side-by-side substantially abutting and parallel relation, comprising the forming of a plurality of spaced parallel identical elongated slits of predetermined dimension in a substantially unsupported sheet of resilient, deformable, and elastic plastic material, transversely stretching said carrier simultaneously to widen and to shorten said carrier and to form said slits into apertures, the resiliency and elasticity of said material tending to return said apertures to slits, further stretching and deforming the margins of the slits to a dimension such that containers can be inserted through said apertures from a given direction while deforming said margins to form circumferentially continuous bands projecting from the plane of the plastic sheet, away from said given direction and inserting said stretched and deformed margins of the slits over said containers embracingly and resiliently to engage and grip said containers.

References Cited in the file of this patent

UNITED STATES PATENTS

865,173	Eichberg	Sept. 3, 1907
2,061,937	Fay	Nov. 24, 1936
2,391,081	Von Hofe	Dec. 18, 1945
2,637,515	Walsh	May 5, 1953
2,874,835	Poupitch	Feb. 24, 1959

FOREIGN PATENTS

672,476	Germany	Mar. 6, 1939
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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,044,230

July 17, 1962

Julian V. Fisher

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 3, for "specified" read -- specific --; line 17, for "longitudinal" read -- longitudinally --; line 47, for "longitudnally" read -- longitudinally --; line 56, for "relaton" read -- relation --; column 4, line 25, for "therewith" read -- therewithin --.

Signed and sealed this 11th day of December 1962.

SEAL)

test:

RNEST W. SWIDER
testing Officer

DAVID L. LADD
Commissioner of Patents