

April 23, 1963

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3,086,651

CONTAINER-CARRIER DEVICE

Original Filed Feb. 6, 1958

2 Sheets-Sheet 1

Fig. 1.

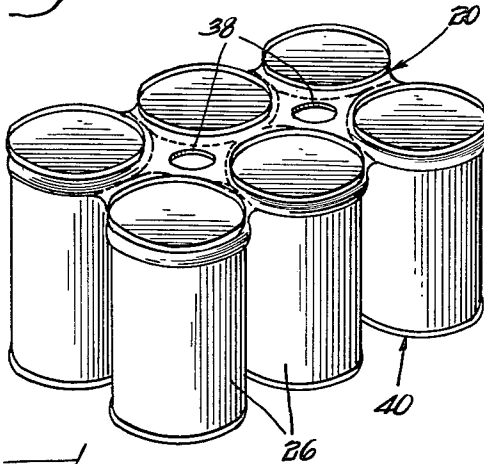


Fig. 2.

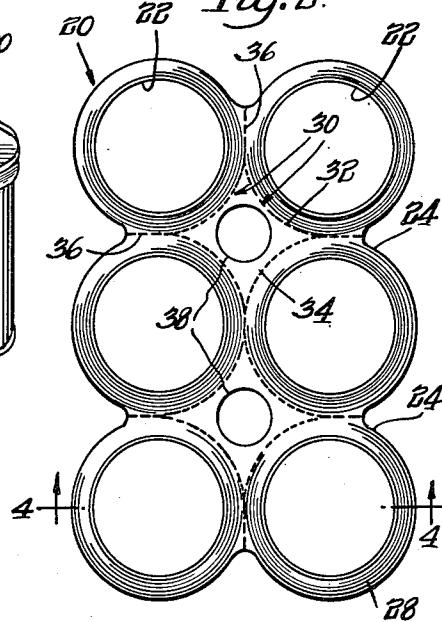


Fig. 3.

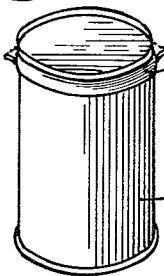


Fig. 4.



Fig. 5.

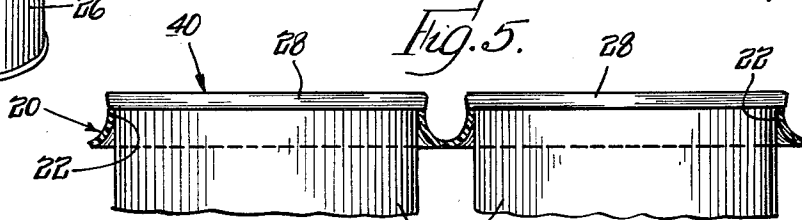


Fig. 8.

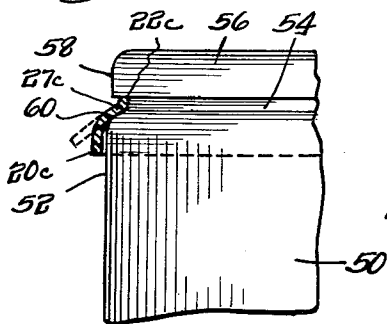


Fig. 6.

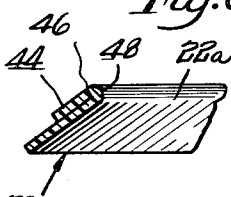
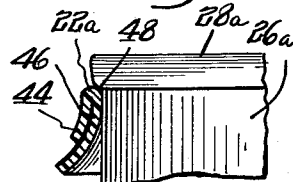


Fig. 7.



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Fig. 9.

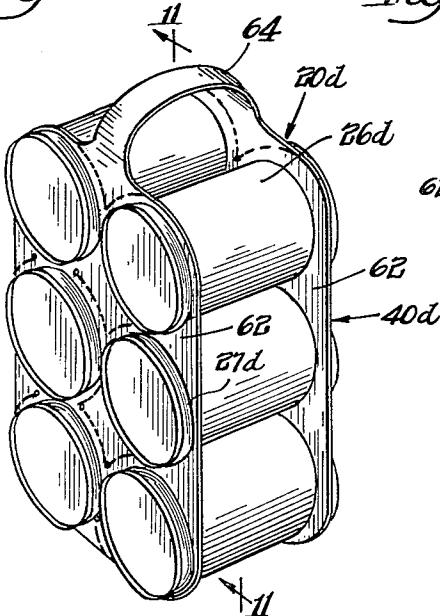


Fig. 10.

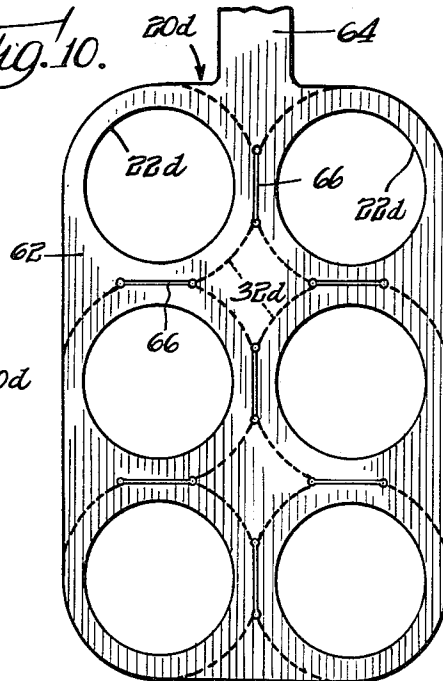


Fig. 11.

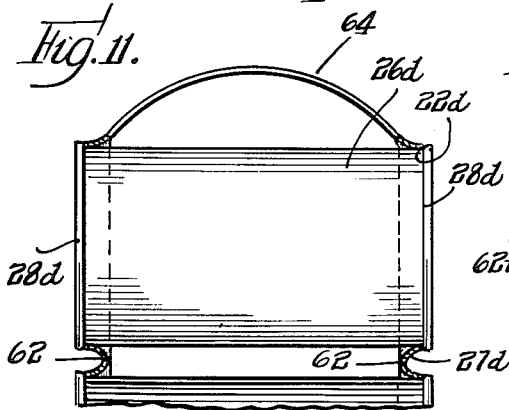


Fig. 13.

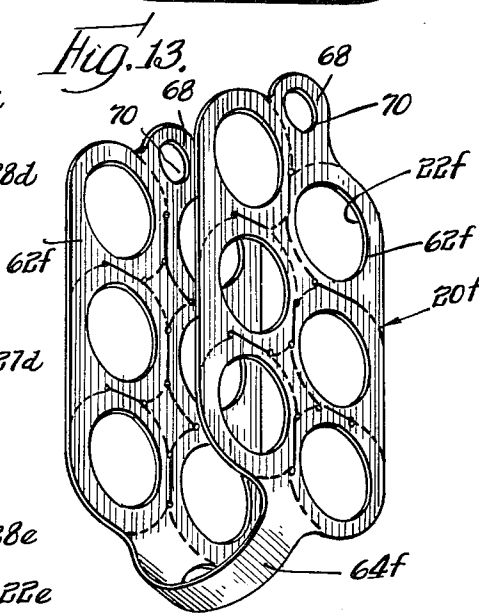
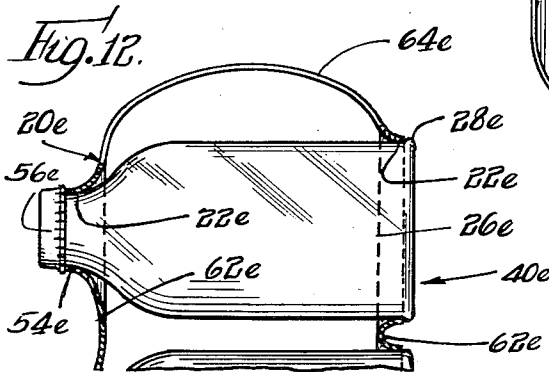


Fig. 12.



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3,086,651

CONTAINER-CARRIER DEVICE

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Original application Feb. 6, 1958, Ser. No. 713,692, now Patent No. 2,997,169, dated Aug. 22, 1961. Divided and this application Apr. 6, 1961, Ser. No. 101,183
17 Claims. (Cl. 206-65)

This invention is concerned generally with the art of carriers for containers such as cans, bottles, and the like.

This application is a division of my prior application Serial No. 713,692, filed February 6, 1958, now Patent No. 2,997,169, issued August 22, 1961.

In my application Serial Number 642,081, filed February 25, 1957, for "Can Carrier Device," now abandoned, I have set forth an improved carrier for cans and the like comprising an apertured sheet or web of resilient stretchable plastic material wherein cans or the like are inserted through the apertures in the sheet. The cans are of greater diameter than the apertures and, accordingly, stretch the apertures and deform the material adjacent the apertures into a frusto-conical shape whereby the cans are aggressively retained against withdrawal in the direction opposite to that in which they have been inserted, but wherein the cans can be pushed all of the way through the sheet or web for relatively easy withdrawal.

This invention represents an improvement over the can carrier device set forth in my aforesaid application, and it is an object of this invention to provide a can-carrier device wherein the cans or other containers are more readily separated from the carrier.

More particularly, it is an object of this invention to provide a container carrier which tenaciously retains cans or other containers, but which is readily severable to release the containers as desired.

In accordance with my aforesaid patent application, the cans are secured adjacent one end, and it is an object of this invention to provide a container-carrying device wherein the containers are secured adjacent both ends.

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 carrier constructed in accordance with this invention as applied to a plurality of cans or the like;

FIG. 2 is a top view of the carrier;

FIG. 3 is a perspective view of one of the cans as it is detached from the carrier;

FIG. 4 is a cross sectional view through one from of the carrier as taken substantially along the line 4-4 in FIG. 2;

FIG. 5 is a cross sectional view similar to FIG. 4 showing the carrier with cans inserted therein;

FIG. 6 is a fragmentary sectional view similar to a portion of FIG. 4 and showing a modified form of carrier;

FIG. 7 is a view similar to FIG. 6 showing the modified carrier as applied to a container;

FIG. 8 is a fragmentary cross sectional view similar to a portion of FIG. 5 and showing cooperation of the carrier with a different type of container;

FIG. 9 is a perspective view of a further modified form of carrier;

FIG. 10 is a plan view thereof;

FIG. 11 is a fragmentary longitudinal sectional view as taken along the line 11-11 in FIG. 9;

FIG. 12 is a view similar to FIG. 11 and showing a further modification of the invention adapted for carrying bottles; and

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FIG. 13 is another modification of the invention, generally similar to that of FIG. 10.

Referring now to the drawings in greater particularity, and first to FIGS. 1-5, there will be seen a carrier designated generally by the numeral 20, and, in many respects, similar to the carrier disclosed in my aforesaid application. More particularly, the carrier comprises a sheet or web of plastic material—polyethylene being a preferred example—having a plurality of apertures 22 therein. The web or sheet may be scalloped, as at 24, in the areas between adjacent apertures 22 in the interests of conserving material. The apertures 22 initially are of somewhat smaller diameter than the cans 26 or the like with which the carrier is to be associated. The sheet or web initially can be flat, or preferably is preformed as in FIG. 4, to provide frusto-conical sections 27 surrounding the apertures 22. When a can 26 or the like is inserted through one of the apertures 22, the material of the web in the vicinity of the aperture is deflected in the direction of the insertion of the can into a frusto-conical shape or into a more pronounced frusto-conical shape in the event that the carrier is preformed. As will be observed in FIG. 5, the material of the carrier then engages beneath each can bead 28 while aggressively gripping the body of the can below the bead. The gripping contact of the carrier with the can is circumferentially continuous and is of measurable axial extent.

Accordingly, a can cannot readily be withdrawn in the opposite direction relative to the direction of insertion. However, and as set forth in my prior application identified above, the can is capable of being pushed all the way through the carrier in the direction of insertion and, in this manner, can be pulled from the carrier without too much difficulty.

In accordance with the present invention, improved means is provided for separating the cans or other containers from the carrier. More particularly, as may be seen in FIGS. 1 and 2, the carrier is perforated along lines indicated generally at 30. The perforations are generally along arcs of 90° or 180° coaxial with the adjacent apertures 22 as indicated respectively at 32 and 34, and are continued as tangents at 36 to the outer margins of the carrier. The perforations do not materially weaken the device or carrier for ordinary handling and, in this connection, it will be noted that a pair of relatively small, spaced apertures 38 is provided for ready gripping by the fingers to carry the package 40 comprising the carrier and containers. However, the web or sheet can be grasped on opposite sides of the perforations 36 along an outer margin of the carrier, and the portions of the carrier on opposite sides of the perforations can readily be moved in opposite directions perpendicular to the plane of the web whereby to tear the plastic material along the perforations. Accordingly, one can 26 readily can be removed from the carrier with a section of the carrier attached thereto as indicated at 42 in FIG. 3.

In accordance with the invention as heretofore shown and described, the material of the sheet or web comprising the carrier is of a single thickness throughout. As shown in FIGS. 6 and 7, the material adjacent each initially formed aperture is heated and folded back, as at 44. This provides a double-thickness lip 46 engageable with a can or the like, and automatically deforms the lip into a frusto-conical shape. The carrier 20a thus produced inherently has a preformed frusto-conical configuration, and is superior to the single-thickness web as heretofore shown and described in that the can-engaging lip 46 is stronger in that a rounded edge 48 is provided which facilitates initial insertion of the can, and hence all possibility of fissures about the apertures 22a is substantially eliminated, thereby precluding tearing of the

material outwardly from any one of the apertures. It will be observed in FIG. 7 that the curved edge 48 at the aperture 22a is received beneath the bead 28a of the can 26a and this, combined with the stretching and resultant gripping of the material, positively precludes retrograde movement of the can.

The invention has heretofore been described specifically as applied to cans having radially projecting peripheral beads at one or both ends. However, the invention is equally applicable to other types of containers. Thus, the invention is shown in FIG. 8 as applied to a jar 50 of the type in which baby foot is commonly supplied. Such a jar has a body of predetermined diameter, as at 52, and has a restricted neck 54 with a cap 56 secured at the top of the neck and projecting radially outwardly therefrom, as at 58. In this instance, the projection 58 of the cap 56 serves as a locking abutment similar to the can bead. More particularly, the portion 27c adjacent each aperture 22c is stretched over the cap projection 58 during assembling therewith, and subsequently snaps in against the neck 54 beneath the cap, and overlying the shoulder 60 of the jar body with the neck 54.

In accordance with the invention as illustrated in FIGS. 9-11, each carrier 20d comprises a pair of sheets or webs 62 secured by an integral handle 64. Each sheet or web is provided with a plurality of container receiving apertures 22d. The webs 62 are stretched over the opposite ends of the cans 26d exactly as heretofore described, the material 27d adjacent the apertures stretching into frusto-conical shape and seating beneath the beads 28d at the opposite ends of the cans 26d. The webs 62 thus are supported by the cans in spaced parallel fashion, and the strap 64 extends generally longitudinally of the cans whereby the package 40d readily can be carried by the strap 64 in the position shown in FIG. 9.

The webs are provided with slits 66 crossing the centerlines of each adjacent pair of apertures 22d and perpendicular thereto. Perforations 32d of slightly less than 90° in arc extend between the adjacent slits and also to the margin of the webs. Arcuate perforations are shown as extending to the margins, but it will be understood that tangential perforations could be provided, as in the embodiment of FIG. 2.

It will be appreciated that the embodiment of the invention incorporating the two webs or straps of material secures the cans of the package together with no chance for tipping of one can relative to another as a result of inherently flexibility of the plastic material, and thereby all tendencies toward accidental tearing of the perforations is avoided. However, the perforations are readily torn manually when it is desired to remove a can from the package.

A further modification of the invention is shown in FIG. 12. In accordance with this form of the invention, the carrier 20e is designed to accommodate bottles 26e having restricted necks 54e of small diameter with caps 56e thereon. The bottoms of the bottles are provided with more projections 28e which may take the form of continuous beads, but which more typically are discrete pips used in conjunction with bottle handling machinery. The apertures 22e in one of the webs 62e are sufficiently large as to stretch about the bodies of bottles adjacent the bottoms thereof, while the apertures 22e of the opposite web 62e are much smaller whereby to stretch about the necks of the bottles and to seat beneath the caps. The resulting package 40e is carried by the strap 64e in the same manner as the package of FIGS. 9 and 11.

As will be understood, the webs of the embodiment of the invention shown in FIG. 12 are provided with perforations similar to those of FIG. 10, or similar to those of FIG. 2, for separating the bottles from the package.

The embodiment of the invention as shown in FIG. 13 is substantially the same as that shown in FIG. 9,

corresponding numerals being used, with the addition of the suffix *f*. The major point of distinction resides in the provision of longitudinally extending tabs 68 at the ends of the webs 62f opposite to the strap 64f. The tabs 68 are provided with apertures 70, and a thumb and finger readily may be inserted through these apertures to transport the package in an inverted position relative to FIG. 9. Generally speaking, in this embodiment of the invention the strap 64f will be substantially shorter than the strap previously disclosed whereby to make it possible for the fingers of the hand readily to extend between the tabs 68.

In each form of the invention, the material sections adjacent the apertures are deformed to frusto-conical configuration while gripping a can or other container. The carrier thus aggressively grips each container along a circumferentially continuous line at the margin of each aperture and over a substantial axial distance. The tenacious grip of the carrier on each container thus insures against accidental separation of a container from the carrier. However, the perforations permit the carrier to be torn readily when it is desired to remove a container therefrom. In this connection, it will be noted that the perforations most conveniently are formed in a stamping operation, but could be molded. It will be observed in FIG. 10 that the ends of the slits or slots 66 are provided with slightly enlarged circular openings to avoid any sharp corners which might tend to cause accidental tearing of the carrier.

The carrier is adapted to retain a variety of containers such as cans, jars, or bottles, and may grip the containers at one end or at both ends.

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

I claim:

1. A receptacle for retaining a plurality of containers or the like having annular enlargements at one end in side-by-side substantially abutting and parallel relation; and comprising a substantially unsupported sheet of plastic material, said sheet of plastic material being resilient, deformable, and elastic and having a plurality of apertures therein with the material adjacent each aperture doubled back upon itself to form a double thickness, each of said apertures having a peripheral measurement less than the periphery of the corresponding container, 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 said apertures from a given direction when the material adjacent said apertures is stressed and deformed to form circumferentially continuous double thickness lips embracing said containers within said annular enlargements and resiliently gripping said containers, manually graspable means associated with the sheet for lifting the receptacle, and said sheet of plastic material being provided with a weakened line adjacent each aperture generally paralleling the adjacent peripheral configuration of adjacent apertures and with each weakened line disposed outside of the container-contacting area of the lips when in stretched position with a container inserted therethrough.

2. A receptacle for retaining a plurality of containers or the like having annular enlargements at one end in side-by-side substantially abutting and parallel relation; and comprising a pair of substantially unsupported sheets of plastic material, each sheet of plastic material being resilient, deformable, and elastic and having a plurality of apertures therein, each of said apertures having a peripheral measurement less than the periphery of the corresponding container, the material at the edge of each aperture being circumferentially continuous and uninter-

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rupted, the apertures in the sheets being 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 stressed and deformed to form circumferentially continuous lips embracing said containers within said annular enlargements and resiliently gripping said containers, a strip integral with and connecting both of said sheets and providing manually graspable means for lifting the receptacle, and each sheet of plastic material being provided with a weakened line adjacent each aperture generally paralleling the adjacent peripheral line disposed outside of the container-contacting area of the lips when in stretched position with a container inserted therethrough.

3. A receptacle as claimed in claim 2, wherein the apertures in each sheet are of differential sizes whereby to accommodate opposite ends of containers with different end sizes such as bottles.

4. A beverage or the like unit 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 with the material adjacent each aperture doubled back upon itself to form a double thickness, 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 into the form of axially directed double thickness necks engaging said containers below said enlargements and resiliently gripping the containers to resist withdrawal thereof with the containers depending from the sheet of plastic material in side-by-side abutting relation whereby to reinforce one another upon carrying of the unit, and said sheet of plastic material being provided with a weakened line adjacent each aperture generally paralleling the adjacent peripheral line disposed outside of the container-contacting area of the lips when in stretched position with a container inserted therethrough.

5. A receptacle for retaining a plurality of containers or the like having annular enlargements at one end in side-by-side substantially abutting and parallel relation; comprising a substantially unsupported sheet of plastic material which is resilient, deformable and elastic; said sheet of plastic material having a plurality of apertures therein each having a peripheral measurement less than the periphery of a corresponding container and with 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 said apertures from a given direction when the material adjacent said apertures is stressed and deformed to form circumferentially continuous lips embracing the containers beneath the annular enlargements and resiliently gripping the containers, manually graspable means associated with the sheet for lifting the receptacle, and said sheet of plastic material being provided with a weakened line adjacent each aperture generally paralleling the adjacent peripheral configuration of adjacent apertures and each weakened line being disposed entirely outside of the container-contacting stressed area of the lips when in stretched position with a container inserted therethrough.

6. A receptacle for retaining a plurality of containers or the like having annular enlargements at one end in side-by-side substantially abutting and parallel relation; comprising a substantially unsupported sheet of plastic material which is resilient, deformable and elastic; said sheet of plastic material having a plurality of curvilinear apertures therein each having a peripheral measurement less than the periphery of a corresponding container and with the material at the edge of each aperture being circum-

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ferentially continuous and uninterrupted, the apertures in the sheet being 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 stressed and deformed to form circumferentially continuous lips embracing the containers beneath the annular enlargements and resiliently gripping the containers, manually graspable means associated with the sheet for lifting the receptacle, and said sheet of plastic material being provided adjacent each aperture with a weakened line positioned entirely outside of the container-contacting stressed area of said lips, each weakened line having a first portion disposed interiorly of the periphery of the sheet and generally paralleling the adjacent curvilinear edge of the adjacent aperture, a second portion of each weakened line extending outwardly toward an edge of the sheet substantially tangential to said first curvilinear and interiorly disposed portion of each weakened line.

7. A receptacle as claimed in claim 6, wherein the tangential portions of the weakened lines extend through to a corresponding edge of the sheet.

8. A receptacle as claimed in claim 6, wherein the tangential portions of the weakened lines merge into further weakened lines extending to an edge of the sheet.

9. A receptacle as claimed in claim 8, wherein the tangential portions of the weakened lines each comprise a slit between adjacent apertures.

10. A receptacle as claimed in claim 6, wherein the edge of the sheet is scalloped with the tangential portions of the weakened lines terminating at the inwardly scalloped edges between adjacent apertures.

11. A beverage or the like unit 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 into the form of axially directed necks engaging said containers below said enlargements and resiliently gripping the containers to resist withdrawal thereof with the containers depending from the sheet of plastic material in side-by-side abutting relation whereby to reinforce one another upon carrying of the unit, and said sheet of plastic material being provided adjacent each aperture with a weakened line positioned entirely outside of the container-contacting stressed area of said necks, each weakened line having a first portion disposed interiorly of the periphery of the sheet and generally paralleling the adjacent curvilinear edge of an adjacent aperture, a second portion of each weakened line extending outwardly toward an edge of the sheet substantially tangential to the stretched container-gripping necks.

12. A beverage or the like unit as claimed in claim 11, wherein the tangential portions of the weakened lines extend through to an edge of the sheet.

13. A beverage or like unit as claimed in claim 11, wherein the tangential portion of each weakened line merges into a further weakened line extending to an edge of the sheet.

14. A beverage or the like unit as claimed in claim 13, wherein the tangential portion of each weakened line comprises a slit disposed between adjacent stretched container-gripping necks.

15. A beverage or the like unit as claimed in claim 11, wherein the edge of the sheet is scalloped with the tangential portions of the weakened lines terminating at the inwardly directed scalloped edges between adjacent containers.

16. A beverage or the like unit comprising a plurality

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of containers arranged in spaced parallel relationship and each having a curvilinear cross section and axially spaced annular enlargements; and a pair of integrally interconnected sheets of substantially unsupported plastic material having a plurality of curvilinear apertures therein, said sheets 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, said sheets being received over said annular enlargements of said containers to stretch and deform the material adjacent said apertures axially of said containers to form necks engaging said containers axially inwardly of said enlargements and resiliently gripping the containers to resist retrograde withdrawal thereof, each sheet of plastic material being provided with a weakened line adjacent each aperture generally paralleling the adjacent peripheral configuration

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of adjacent apertures and with each weakened line disposed outside of the container-contacting area of said necks when in the stretched position with a container inserted therethrough.

17. The combination defined in claim 16 wherein each container has end portions of different diameters and wherein the apertures in one sheet are differentially sized in relation to the apertures in the other sheet.

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