

[54] **MULTIPLE CONTAINER CARRIER AND INDIVIDUAL CONTAINER LID ARRANGEMENT**

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[22] Filed: **Apr. 20, 1972**

[21] Appl. No.: **246,037**

[52] U.S. Cl. **206/65 C, 206/56 AB**

[51] Int. Cl. **B65d 71/00**

[58] Field of Search. **206/56 AB, 65 C, 206/65 E, 65 S; 294/87.2**

[56] **References Cited**

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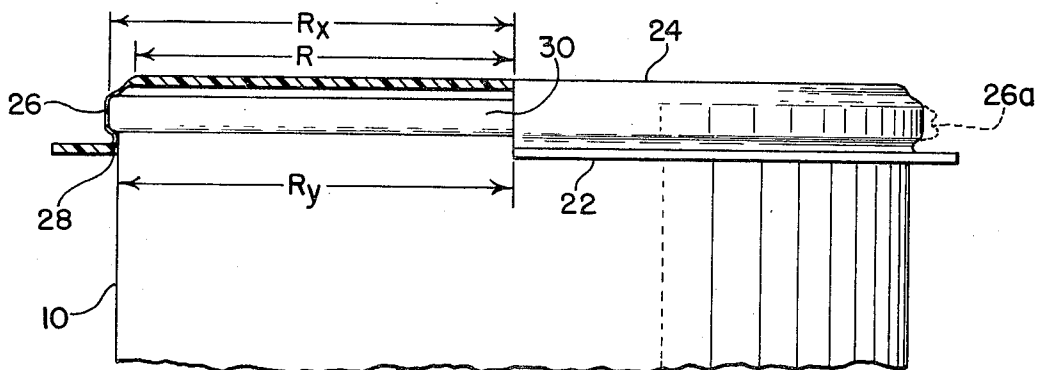
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 Assistant Examiner—Steven E. Lipman
 Attorney—Robert W. Beart et al.

[57] **ABSTRACT**

A multiple container package for cans and the like having outward chime, rim or bead formations at the upper ends thereof and in which there is provided a carrier in the form of a resilient deformable sheet of plastic material preformed to provide downwardly open recessed pockets receiving the upper end portions of containers arranged in side by side relationship in the package with the material around the open end of each pocket stretched to pass over an associated chime or rim formation and then resiliently contracted as a gripping edge in engagement with the container wall beneath the chime formation for assembly of the containers in the package and transport thereof, the material of the plastic sheet forming the closed end of each pocket being joined to the adjacent gripping edge by a substantially inert or relaxed annular wall portion which has been stretched beyond its elastic limit; and the carrier sheet being provided with weakened web portions between adjacent containers in the package permitting selective removal of one or more containers from the package with the remnant recessed sheet material remaining attached thereto and separately removable to permit opening of the container proper and dispensing of the contents thereof and then reusable as a reclosure lid for the opened container where only part of the contents has been dispensed.

10 Claims, 7 Drawing Figures



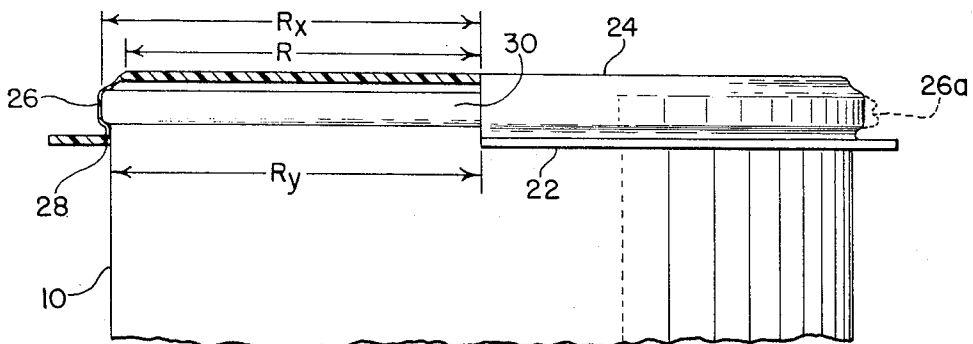
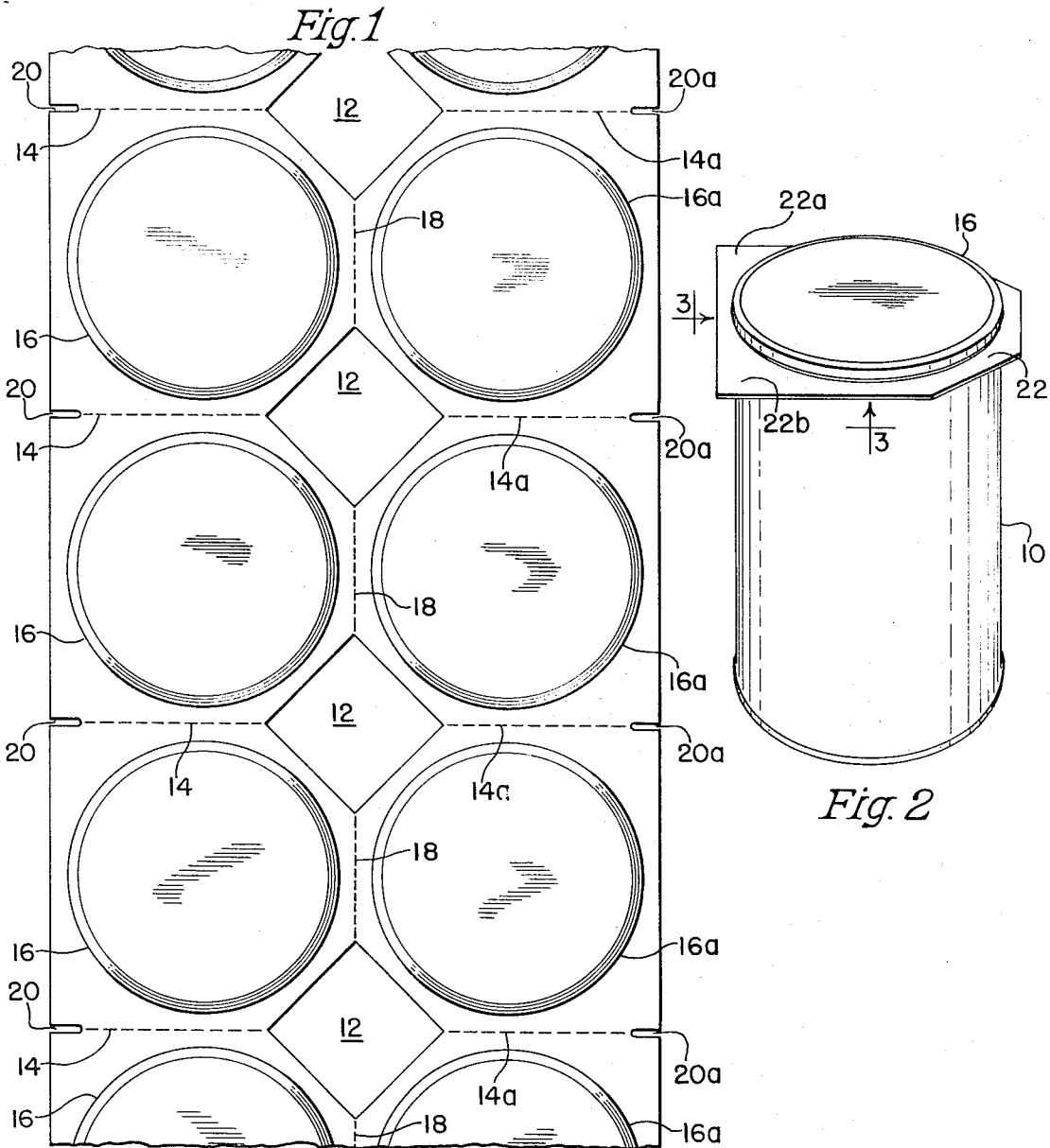


Fig. 3

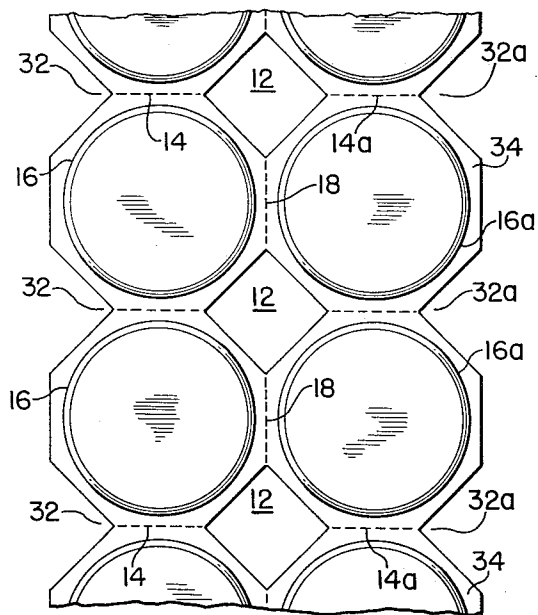


Fig. 4

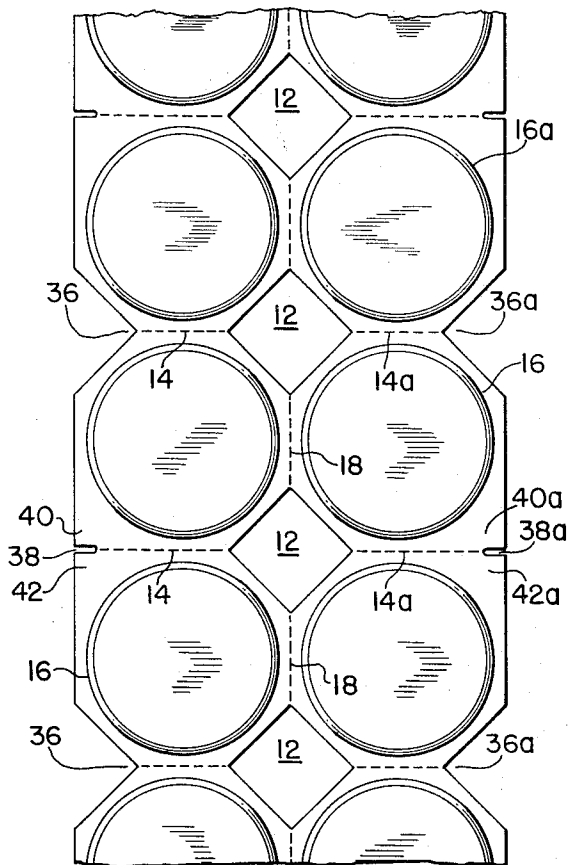


Fig. 6

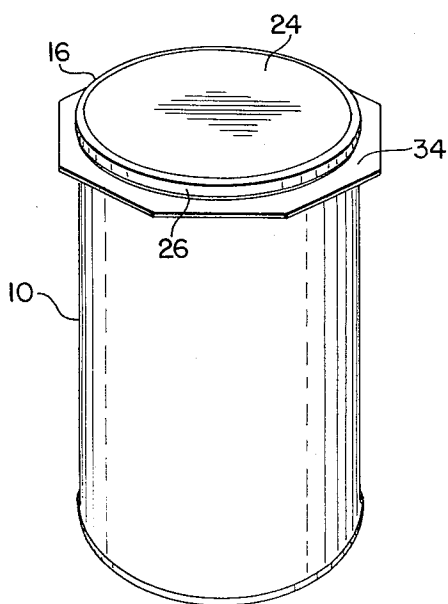


Fig. 5

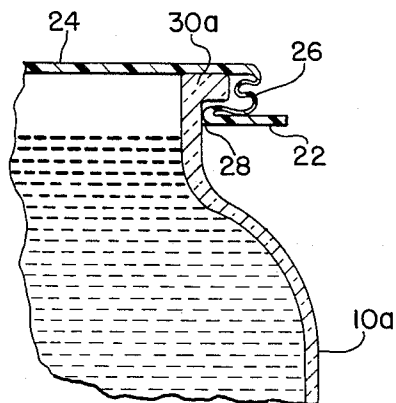


Fig. 7

MULTIPLE CONTAINER CARRIER AND INDIVIDUAL CONTAINER LID ARRANGEMENT

This invention is concerned with a multiple container package including carrier sheet means for transport thereof with the containers arranged in side by side relationship, and adapted to be selectively removed from the package.

Multiple container packages of the above general type have been provided. In some of these packages, the carrier sheet is apertured in accordance with the packaged container arrangement and the upper ends of the containers, such as cans arranged in a six pack, are projected through corresponding apertures in the carrier sheet with the edge material around each aperture variously engaging the can bodies and bead formations. The cans may be manipulated in various ways, as by twisting, tilting or the like, to separate an individual can from the package. In other types of similar packages, the carrier sheet has been formed with downwardly open recesses or pockets receiving the upper ends of cans or similar containers with the sheet material of the pockets gripping the container chime formations and the body walls therebelow.

In accordance with the present invention, there is provided a pocketed carrier sheet with the tops of individual containers disposed in corresponding pockets with the material around the open end of each pocket serving as a resilient gripping edge engaging the body wall of an associated container beneath the chime or rim formation to secure the containers together in the package for transport, and with the closed ends of the pockets and connecting annular portions enclosing the tops of the containers and sides of the chime formations, respectively.

An object of the invention is to provide such a package wherein the carrier sheet includes web portions between adjacent containers with lines of weakness facilitating selective removal of one or more containers from the package with the pockets and included web portions remaining attached to the removed containers.

Another object of the invention is to provide a package substantially of the above type wherein the individual pocket and web formations may be conveniently removed from an associated container permitting opening of the container and dispensing of contents therefrom and wherein the pocket and web formation may be reapplied as a reclosure lid to the opened container when only part of the contents is dispensed.

A further object of the invention is to provide a package substantially of the above type wherein the annular connecting wall between the closed end and the gripping edge of each pocket formation is substantially inert and flexible, as by being initially stretched beyond its elastic limit, to facilitate application and removal as a reclosure lid, and to accommodate container chime or rim formations of varying dimensions and shapes, since the essential gripping of the container is by the gripping edge around the open end of each pocket.

The above and other objects of the invention will in part be obvious and will be hereinafter more fully pointed out.

In the accompanying drawings:

FIG. 1 is a fragmentary top plan view of a multiple container package;

FIG. 2 is a perspective view of a container and attached pocket and web formation removed from the package of FIG. 1;

FIG. 3 is an enlarged fragmentary side view of the container assembly of FIG. 2, partly in section on the line 3—3, showing the pocket formation;

FIG. 4 is a fragmentary top plan view of a multiple container package with a modified form of carrier;

FIG. 5 is a perspective view of a container and attached web and pocket formation removed from the package of FIG. 4;

FIG. 6 is a fragmentary top plan view of still further modified carrier for a multiple container package, and

FIG. 7 is a fragmentary side section showing a web and pocket formation in association with a modified flanged or rimmed container.

With reference to FIG. 1, the carrier sheet is shown with a package of ten or more containers 10 arranged in pairs. The carrier sheet is provided with central square apertures 12 along the length thereof with the transverse apices in line with transverse lines of weakness 14, 14a in webs of the carrier sheet between pairs of container receiving pocket formations 16 and 16a and with the longitudinal apices in line with longitudinal lines of weakness 18 in webs of the carrier sheet between pairs of longitudinally disposed pocket formations 16, 16a. The invention contemplates that the apertures 12 need not be square but alternatively may be made curvilinear. The lines of weakness may be provided by scoring, perforating and the like, and the transverse lines of weakness 14, 14a terminate at the outer side edges of the carrier sheet in inward notches or slits 20, 20a, respectively. The slits 20, 20a facilitate initial removal of one or more containers from the carrier by separating along the lines of weakness 14 and 18 and one such removed container 10 with its attached pocket formation 16 is shown in FIG. 2 with a remnant web 22 attached and presenting enlarged corner gripping surfaces 22a, 22b for leverage in removing the pocket formation from the removed container.

Reference is made to FIG. 3 for a detail description of a pocket formation 16 which includes a cover or protective lid portion 24 integral with an annular wall portion 26 which, in turn, is integral with a gripping edge portion 28 at the open end of the pocket formation. The radius R of the cover portion 24 is less than the radius Ry of the pocket aperture defined by the gripping edge portion 28. This radius Ry is, in turn, less than the radius Rx of the rim formation 30 on the container and also slightly less than the radius of the container body below the rim formation. Thus, in application the pocket formations to the containers either in the original package or re-applying a pocket formation to a partially emptied container, the gripping edge portion 28 must be stretched over the rim formation to then resiliently engage the container body therebelow. The annular wall portion 26 is shown as being slightly thinner than the cover 24 and web 22 and this results from initial cold forming of the plastic sheet to form the pockets with the material of the annular side wall 26 stretched beyond its elastic limit to render the same substantially inert and flexibly relaxed. Thus, the annular wall portion 26 does not enter into the gripping and support of an included container which is essentially gripped only by the gripping edge 28. While the wall portion 26 is shown at the left of FIG. 3 as generally conforming to the container rim formation 30, this is because of the dimensioning of that rim formation. If the rim formation were smaller in vertical or radial extent, the wall portion would assume the loose or re-

laxed position indicated by the dotted lines 26a at the right of FIG. 3. For further illustration in this connection, reference is made to FIG. 7 where the container 10a is of the type having a thin radial flange 30a as the rim formation. In this case, the cover portion 24 will more or less seat on the flange as the gripping edge portion 28 grips the container body wall therebelow. Here, the wall portion 26 will be relaxed in folds as in accordance fashion or otherwise depending on the extent of wall material available relative to the dimensioning of the rim formation.

Modifications of the carrier sheet are shown in FIGS. 4 and 6. In FIG. 4, the carrier sheet includes the central openings 12 and the transverse lines of weakness 14, 14a as well as the longitudinal lines of weakness 18 along the respective webs of the carrier sheet between pocket formations 16, 16a. In lieu of the enlarged web corner portions 22a, 22b of FIG. 1, there cut outs 32, 32a along the longitudinal outer edges of the carrier sheet between each pair of containers. A container 10 removed from this carrier sheet is shown in FIG. 5 where the remnant web 34 is octagonal and provides peripheral areas for gripping to remove the pocket formation from the container. In FIG. 6, the carrier sheet combines certain features of the carrier sheets of FIGS. 1 and 4. This carrier sheet includes the central openings 12 and the transverse lines of weakness 14, 14a, as well as the longitudinal lines of weakness 18. However, the side edges of the sheet have alternate cut outs 36, 36a and notches or slits 38, 38a, thus dividing the carrier sheet pockets into groups of four. The four container groups may be removed as a unit, preferably by separating the same along the lines of weakness 14, 14a from the apices of the cut outs 36, 36a, respectively, thus leaving intermediate notches 38, 38a to facilitate subdividing the group by removing one or a pair of containers, as desired. With such sub-division, there will remain enlarged corner gripping surfaces 40, 40a and 42, 42a to facilitate removal of pocket formations from a container to be opened.

In each of the carrier sheets with multiple containers, four, six, eight or more, assembled therewith, the apertures 12, which may be of any desired shape, serve as finger or handle grip apertures in transporting the package. Where a two-pack is removed from the package, the ends of the web therebetween at the adjacent apertures 12 will serve as gripping or purchase edges for transport. As will be apparent, selected groups of two or more containers, or even one container, may be removed from the original package. This may be accomplished by twisting or other manipulation to cause severance along the appropriate lines of weakness 14, 14a, 18 and such severance may be initiated along the notches 20 or 20a of FIG. 1, or the notches 38, 38a of FIG. 6. Such a removed container and pocket formation from the package of FIG. 1 will appear as in FIG. 2; or one from the package of FIG. 4 will appear as in FIG. 5; or one removed from the package of FIG. 6 will have a comparable web formation around the pocket. Thereafter the pocket formation may be removed from the container by leverage manipulation of the remnant web, as by grasping the enlarged portions thereof, such as 22a, 22b, 42, 42a. The flexible wall portion 26 facilitates this removal in that only the gripping edge 28 need be stretched to clear the container rim formation, that is, the wall portion 26 inherently offers no resistance to this manipulation. Thereafter the container

may be opened in conventional manner, as by a can opener, or by manipulation of a pull tab if one is incorporated in the container lid for beverages and the like, or by removal of a peripheral band releasing the entire container lid formation including the bead or rim. Where only part of the contents is disposed, as in certain food or ingredient containers, the removed pocket formation serves as a convenient re-closure which can be easily applied to the open end of the container, requiring only stretching of the gripping edge 28 and this gripping edge will serve to grip the wall of those containers where the entire lid has been removed, leaving the container closed by the cover portion 24 and the wall portion 26 in completely relaxed or folded condition, such as in FIG. 7. The carrier sheet is formed of a suitable resiliently deformable plastic material, such as polyethylene, and the wall portion when stretched to exceed its elastic limit may take on an opaque whitish color.

What is claimed is:

1. A package of a plurality of containers arranged in side by side relationship and each container having an outward end rim formation; and comprising a carrier sheet of initially resiliently deformable plastic material having downwardly open pocket formations each receiving a container end portion and including a cover portion and an annular wall portion enclosing an associated container rim formation and joined to a resilient gripping edge portion at the open end of each pocket formation and stretched over a corresponding container rim formation and resiliently contracted to grip the container body wall therebelow for assembly of containers in the package and transport thereof; and with the gripping edge portions of each pocket formation connected to one another by web portions of the carrier sheet in the original package, the said web portions being intermediately severable to permit unitary removal of a container and associated pocket formation from the package and with the remnant edges of the web portion serving as gripping leverage surfaces for removing the pocket formation from the container to be opened for dispensing of the contents therefrom and which opened container may be reclosed by application of the pocket formation over the open end thereof as a protective lid assembly where only part of the contents have been dispensed from the container, and wherein the annular wall portion of each pocket formation is substantially inert, as compared with the remainder of the sheet carrier, and flexible to facilitate application and removal of the pocket formation relative to an associated container and to accommodate rim formations of varying dimensions.

2. A package as claimed in claim 1, wherein the web portions of the carrier sheet between adjacent pocket formations are provided with transverse and longitudinal lines of weakness facilitating removal of containers and respective pocket formations from the package.

3. A package as claimed in claim 2, wherein transverse lines of weakness terminate in slits directed inwardly from longitudinal edges of the carrier sheet.

4. A package as claimed in claim 3, wherein the remnant web portions adjacent the slits provide enlarged gripping surfaces facilitating removal of pocket formations from associated containers.

5. A package of a plurality of containers arranged in side by side relationship and each container having an outward end rim formation; and comprising a carrier

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sheet of initially resiliently deformable plastic material having downwardly open pocket formations each receiving a container end portion and including a cover portion and an annular wall portion enclosing an associated container rim formation and joined to a resilient gripping edge portion at the open end of each pocket formation and stretched over a corresponding container rim formation and resiliently contracted to grip the container body wall therebelow for assembly of containers in the package and transport thereof; and with the gripping edge portions of each pocket formation connected to one another by web portions of the carrier sheet in the original package, the said web portions being intermediately severable to permit unitary removal of a container and associated pocket formation from the package and with the remnant edges of the web portion serving as gripping leverage surfaces for removing the pocket formation from the container to be opened for dispensing of the contents therefrom and which opened container may be reclosed by application of the pocket formation over the open end thereof as a protective lid assembly where only part of the contents have been dispensed from the container, and wherein the annular wall portion of each pocket formation is stretched beyond its elastic limit to render the same substantially inert and flexible for adaptation to container rim formations of varying dimensions.

6. A carrier for a plurality of containers with outward end rim formations; and comprising a sheet of resiliently deformable plastic material having downwardly open pocket formations arranged in side by side relationship for receiving end portions of containers and supporting the same, each pocket formation including a cover portion to overlie a container end and joined

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by a substantially inert and flexible annular wall portion to a reduced diameter gripping edge at the open end of the pocket to be stretched over the container rim formation and contracted into resilient gripping engagement with the container body wall therebelow, and with the annular wall portion adapting the pocket formations to container rim formations of varying dimensional configurations and facilitating application and removal thereof, and wherein the annular wall portions are stretched in excess of the elastic limit thereof to render the same substantially inert and flexible as compared to the remainder of the carrier sheet material.

7. A carrier as claimed in claim 6, wherein web portions of the carrier sheet between adjacent pocket formations are provided with longitudinal and transverse lines of weakness facilitating separation of pocket formations and containers associated therewith from a multi-container package leaving a remnant web formation around each pocket.

8. A carrier as claimed in claim 7, wherein the ends of the longitudinal lines of weakness and the inner ends of the transverse lines of weakness terminate in apertures in the carrier sheet disposed lengthwise along the center thereof between adjacent pocket formations.

9. A carrier as claimed in claim 8, wherein the outer ends of each transverse line of weakness terminates at inwardly cut edges along the length of the side edges of the carrier sheet.

10. A carrier as claimed in claim 9, wherein inwardly cut edges are in the form of slits leaving adjacent enlarged surfaces to service as gripping means in the remnant web portion when a pocket formation is removed from the carrier sheet.

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