April 9, 1963 O. J. POUPITCH 3,084,792

CONTAINER CARRIER

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Fig. 1.

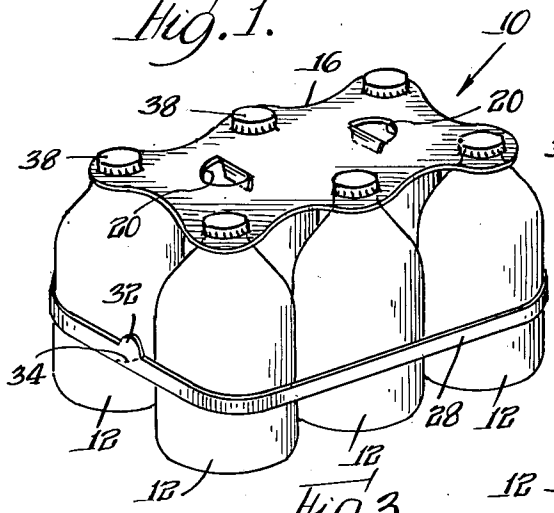


Fig. 2.

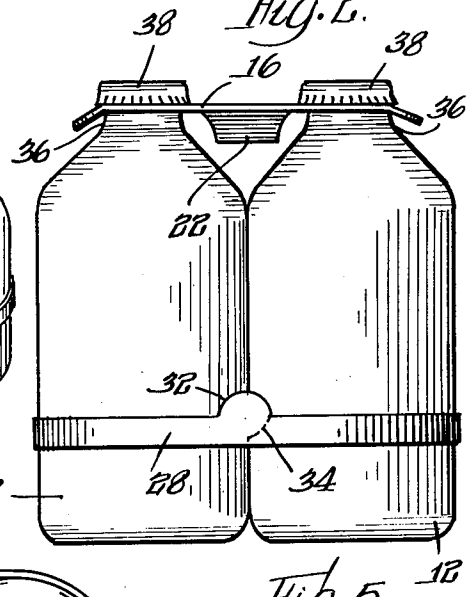


Fig. 3.

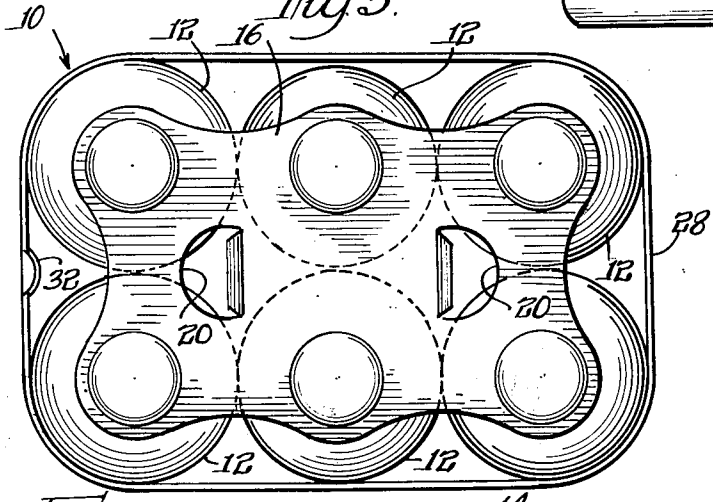


Fig. 4.

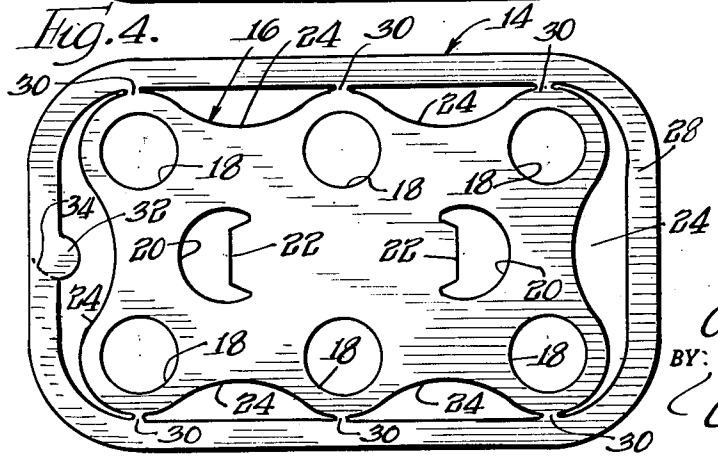
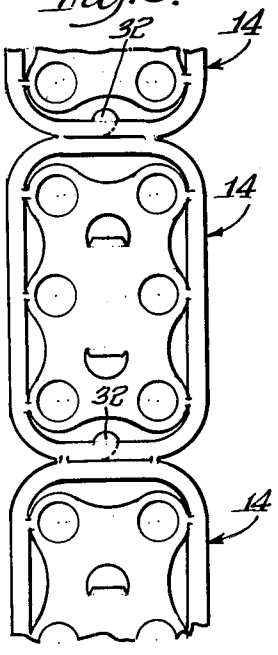


Fig. 5.



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CONTAINER CARRIER

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Fig. 6.

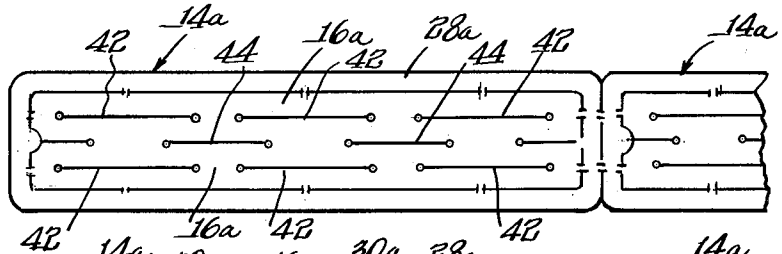


Fig. 7.

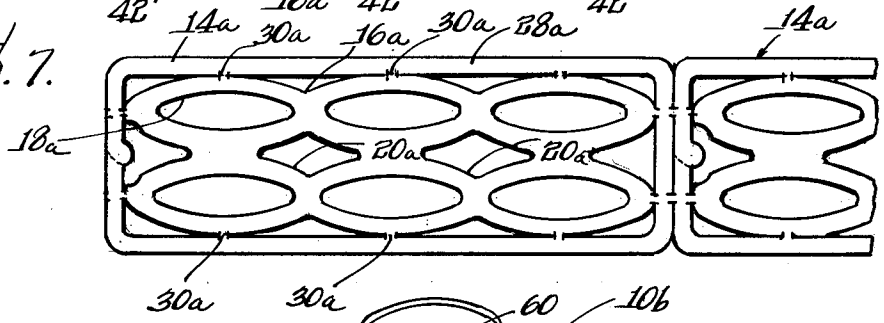


Fig. 9.

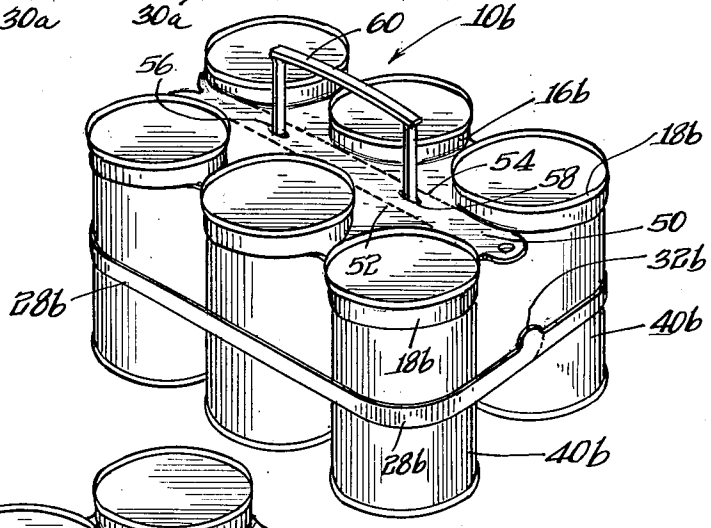
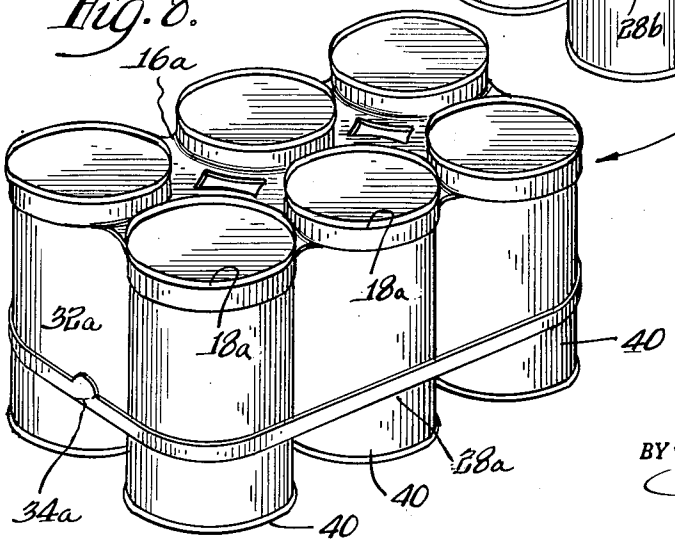


Fig. 8.



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CONTAINER CARRIER

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7 Claims. (Cl. 206—56)

The present invention relates to carrier packs of containers. In the handling and retailing of beverages and other products contained in bottles, cans, and similar small containers, many advantages are gained by packaging the containers in groups or clusters to form carrier packs of containers designed to be handled and sold as individual units.

Much effort has been devoted to the packaging of containers to form container carrier packs. This has produced a wide variety of means and methods for forming carrier packs of containers. Even though these have embodied the best efforts of those concerned with the problem, the prior art in this field is nevertheless marked by limitations and in some instances distinct disadvantages.

One object of the invention is to provide a new and improved carrier pack of containers which affords worthwhile advantages to both the manufacturer and user of packs formed in accordance with the invention.

Another object is to package containers together in a new and improved manner to form an improved carrier pack which holds a cluster of containers together firmly, yet yieldably, and provides for convenient carrying of the containers, while at the same time avoiding encasement of the containers by packaging structure which would thermally insulate the containers from the external environment.

Another object is to provide advantageously for assembly of containers into an improved carrier pack in which containers are supported together for convenient carrying in a substantially unenclosed cluster in which the containers are continuously held in firm mutual engagement so as to avoid divergence of the containers, and to avoid striking or banging of the containers against each other.

Another object is to provide an improved carrier pack which is particularly advantageous in the packaging of bottles.

Another object is to provide an improved carrier pack of the character recited in the preceding objects which provides for ready and most convenient release of the individual containers from the pack.

Another object is to provide new and improved container packaging means of an inherently economical construction well adapted to be easily and most efficiently assembled with containers and serving, upon being assembled with clusters of containers, to form carrier packs marked by the features and advantages recited in the preceding objects.

Another object is to provide improved packaging means formed basically of a single sheet of elastic material and serving, upon being assembled with a cluster of containers, to form a container carrier pack marked by features and characteristics recited in the foregoing objects.

Another object is to provide new and improved means of assembling containers in carrier packs to the end that the basic structure necessary for forming a succession of carrier packs, of the character recited in preceding objects, can be produced in a continuous sheet of plastic material.

Other objects and advantages will become apparent from the following description of the exemplary embodiment of the invention illustrated in the drawings, in which:

FIGURE 1 is a perspective view of a carrier pack of bottles embodying the invention;

FIG. 2 is an end view of the carrier pack illustrated in FIG. 1;

FIG. 3 is a top view of the carrier pack illustrated in FIG. 1;

FIG. 4 is a plan view of single sheet assembly means use in forming the carrier pack of FIG. 1;

FIG. 5 is a plan view showing an interconnected series of assembly sheets identical to the assembly sheet shown in FIG. 4;

FIG. 6 is a view similar to FIG. 5 but illustrating a series of a modified form of the container assembly sheets;

FIG. 7 is a view similar to FIG. 6 but showing the assembly sheets expanded transversely for reception of containers;

FIG. 8 is a perspective view of a carrier pack of containers assembled together by means of the form of assembly sheet illustrated in FIG. 6 and 7; and

FIG. 9 is a perspective view of a container carrier pack having a carrying handle and including a tear strip portion which faciltiates releasing of the containers from the pack.

Referring to the drawings in greater detail, the carrier pack **10** of containers forming the first illustrated embodiment of the invention, FIGS. 1 to 5, comprises a cluster of six bottles arranged in two juxtaposed rows of three bottles each.

The bottles in the package cluster are supported together and firmly held in continuous side engagement with each other by means of plastic packaging structure of an extremely simple, economical character which is initially formed in an integral flat sheet **14**, FIG. 4. The flat sheet **14** has a generally rectangular overall shape and is formed of an elastic, that is, stretchable, plastic material such, for example, as polyethylene.

The flat plastic sheet **14** is shaped by cutting to define an inner carrier portion **16** having a generally rectangular overall form. This carrier portion or carrier **16** defines six constrictive openings **18** arranged in two parallel rows of three openings each. The openings **18** have a diameter somewhat less than that of the upper ends of the bottles **12** to be assembled together in a pack and serve, as will presently appear, to form receivers which receive the necks of the respective bottles, to hold the cluster of bottles together at the top and to provide support to the individual bottles.

Two hand grip or finger apertures **20** formed in the carrier **16** between the constrictive apertures **18**, as shown in FIG. 4, are spaced apart along the longitudinal center line of the carrier. The structure of the carrier **16** defining each opening **20** forms a flap **22** normally projecting into the opening from the side of the opening most nearly adjacent the other opening **20**. The flaps **22** thus formed are subsequently bent out of the plane of the carrier by the grip of the user and serve to form smooth surfaces which are engaged by the fingers of the user inserted into the apertures **20**.

The side edges of the inner carrier **16** of the sheet **14** have a scalloped shape which defines deep recesses **24** extending inwardly between the portions of the carrier which bound the respective constrictive openings **18**, as shown in FIG. 4.

The inner carrier portion **16** of the sheet **14** is encircled or bounded by a generally rectangular marginal edge or band portion **28** of the sheet. Preferably, the four corners of the peripheral edge or band portion **28** of the sheet are rounded, as shown in FIG. 4.

Even though formed together as integral portions of the same plastic sheet **14**, the peripheral band **28** and the inner carrier **16** are connected together only by a plurality of weak connections spaced from each other around the carrier. As shown, the band **28** is connected by a plu-

rality of narrow webs 30 to the protruding scalloped portions of the carrier 16 which bound the constrictive openings 18.

As illustrated in FIG. 5, a plurality of integral packaging sheets 14 can be formed together in a continuous interconnected series which can be of advantage in the mass production assembly of carrier packs of containers.

As further shown in FIGS. 4 and 5, the band portion 28 of each sheet 14 is shaped to define a tear tab 32 which is preferably located on a portion of the band which traverses one end of the carrier. As initially formed, the tab 32 projects inwardly into an adjacent recess 24 in the scalloped outline of the carrier 16. A series of perforations 34 formed in the band 28 extend across the band from the vicinity of the tab 32 and coact with the tab as presently will appear, to facilitate release of containers from the carrier pack to be formed.

The initially interconnected plastic packaging sheets 14 thus formed are moved into overlying relation to containers to be assembled together in packs. Having reference to FIGS. 1 to 3, a packaging sheet 14 is moved downwardly with reference to the cluster of bottles 12 to be assembled together, to cause the necks 36 of the bottles to enter and project upwardly through the constrictive apertures 18 in the carrier portion 16 of the packaging sheet. In the present instance, the bottles 12 have relatively short necks and are covered with crimped caps 38 of the conventional character used on soft drink bottles. The somewhat elastic or stretchable quality of the plastic material from which the sheet 14 is formed enables the constrictive openings 18 to enlarge sufficiently to pass the caps 38, whereupon the openings snugly embrace the bottle necks 36 below the caps to provide support for the bottles.

The peripheral band portion 28 of the sheet 14 used in assembling the cluster of bottles 12 is caused to move downwardly below the level of the carrier portion of the sheet. This continued downward movement of the peripheral band is accompanied by a ripping or tearing of the connecting webs 30 which releases the band portion from the carrier portion of the packaging sheet.

As illustrated in FIGS. 1 and 2, the band 28 is moved downwardly over the cluster of bottles to encircle the bottles in a position disposed a substantial distance below the carrier 16 and engaging the bottles below the constrictions which lead to the necks 36.

Since the carrier 16 need embrace only the necks 36 of the bottles 12, the overall length and width of the carrier can be substantially less than the corresponding overall dimensions of the cluster of bottles 12, FIG. 3. The band 28, as integrally formed with the carrier 16 in encircling relation to the carrier, as shown in FIG. 4, has a peripheral length substantially less than that necessary to encompass the cluster in engagement with the full size portions of the bottles 12. Consequently, the band 28 is substantially stretched upon being torn off from the carrier 16 and moved down into encircling relation to the bottles. The effect of this is to place the band 28 under tension to yieldably hold the bottles 12 in firm parallel side engagement with each other. Hence, the bottles, held together at their upper ends by the carrier 16, are constrained against diverging from each other at their lower ends by the tension in the endless band 28.

It will be appreciated that the bottles 12 in the carrier pack 10 thus formed are fully exposed thermally to the external environment to facilitate cooling. Moreover, the packaging structure is not subject to weakening or damage by water.

The carrier pack thus formed will maintain its shape in which the bottles are continuously held in parallel engagement with each other to avoid separation of the bottles with subsequent banging or jarring of the bottles against each other which could cause breakage.

To release the bottles from the carrying pack 10, the constraining band 28 is readily removed by manual force

applied to the tear tab 32, to tear the band apart along the series of perforations 34. The individual bottles 12 can then be removed from the carrier 16 while the remaining bottles are left in the carrier, if desired.

Structural components of the modified embodiment of the invention illustrated in FIGS. 6 to 8 which are similar to components of the embodiment just described are identified by the same reference numbers, with the addition of the suffix "*a*."

The carrier pack 10*a* illustrated in FIG. 8 comprises six cylindrical cans 40 of the conventional character commonly used to contain food and beverages. The cans 40 are arranged in two juxtaposed rows of three cans each.

As shown in FIGS. 6 and 7, the packaging sheets 14*a* used in forming carrier packs of containers or cans 40 are initially joined together in a continuous series. In the carrier portion 16*a* of each packaging sheet 14*a*, the constrictive openings 18*a* are formed by two parallel rows of parallel slits 42 cut in the sheet, as shown in FIG. 6. Upon being assembled with a cluster of cans 40, a sheet 14*a* is spread or stretched laterally to cause the slits 42 to open up to form the constrictive openings 18*a*, as shown in FIG. 7.

Intermediate longitudinal slits 44 formed in the sheet 14*a*, as shown in FIG. 6, open up to form gripping or finger apertures 20*a* when the sheet is stretched laterally.

The initial area of the carrier portion 16*a* of the sheet 14*a* before the sheet is stretched laterally is substantially less than the corresponding area covered by the cluster of cans to be packed together. Consequently, the band 28*a* as initially formed has a length less than the band length necessary to encircle the cluster of cans.

A packaging sheet 14*a* is applied to a cluster of six cylindrical cans 40 in generally the same manner as the previously described packaging sheet 14 is applied to the bottles 12 as described. Thus, the packaging sheet 14*a* is moved down over the upper ends of the cluster of containers to cause the upper ends of the containers to protrude through the respective constrictive openings 18*a*. The endless band portion 28*a* of the sheet is moved down to encircle the cans a substantial distance below the carrier and hold the lower ends of the cans together continuously by the tension force in the band.

The embodiment of the invention illustrated in FIG. 9 is generally similar to that illustrated in FIG. 8, component elements of the carrier pack illustrated in FIG. 9 similar to corresponding elements in the pack illustrated in FIG. 8 being identified by the same reference numbers with the use of the suffix "*b*." In the carrier pack of FIG. 9, the central longitudinal portion of the carrier 16*b* is formed by a narrow tear strip 50 extending between the two rows of constrictive apertures 18*b*. The junctures of opposite sides of the narrow tear strip 50 with the adjoining portions of the carrier pack 16*b* are weakened along two parallel lines 52, 54, which extend into close proximity to openings 18*b*.

This is of advantage in subsequently releasing the containers 40*b* from the carrier pack. After the constraining band 28*b* has been torn apart by manual force on the tab 32*b*, the tear strip 50 is ripped out along the lines 52, 54, leaving the structure defining the openings 18*b* weakened sufficiently to facilitate removal of the individual containers from the carrier.

Two longitudinally spaced openings 56, 58 in the tear strip receive the depending ends of a bale shaped handle 60 provided for use in carrying the carrier pack.

It will be appreciated that the invention is not necessarily limited to use of the exact structure illustrated, but includes the use of variants and alternatives within the scope of the invention as defined by the claims.

The invention is claimed as follows:

1. For use in forming a carrier pack of containers, a generally flat blank formed of an elastic material and pro-

viding a carrier having portions thereof defining a plurality of constrictive apertures disposed in a plurality of juxtaposed rows for receiving the upper ends of containers, said carrier portions which define said constrictive apertures being adapted to snugly engage containers in said apertures to provide by means of said carrier alone support to the containers for carrying the latter by said carrier, and an elastic constraining band formed integrally with said carrier in encircling relation to the carrier and being connected with said carrier by weak connections integral with the carrier and band and serving to initially hold the carrier and band together while at the same time being easily ruptured to facilitate downward movement of the band relative to the carrier to embrace and hold together containers supported by said carrier in said apertures thereof.

2. A carrier pack of the type described in claim 1 wherein the carrier element disposed within the confines of the elastic constraining band has a plurality of scallops along its peripheral margin and located between the weak connections which integrally connect the carrier and band whereby the integral connections are surrounded by voids and the amount of plastic material used in the manufacture of the carrier is materially reduced.

3. For use in forming a carrier pack of containers, a generally flat blank formed of an elastic material and providnng a carrier including individual container embracing and supporting portions thereof defining a plurality of constrictive container receiving apertures disposed in a plurality of juxtaposed rows, an endless elastic constraining band formed integrally with said carrier in encircling relation thereto, and said carrier and said constraining band being initially connected together by weak connections integral with the carrier and band and serving to initially hold the carrier and band together while at the same time being easily ruptured to facilitate downward movement of the band relative to the carrier into a container embracing position below the carrier.

4. Carrier device of the type set forth in claim 3 wherein the endless elastic constraining band is provided with an area of reduced cross-section which may be readily torn to facilitate removal of the elastic constraining band subsequent to its assembly on a plurality of containers.

5. For use in forming a succession of carrier packs of containers, a succession of substantially flat and generally rectilinear packaging blanks formed of a stretchable material, each packaging blank including an endless peripheral band portion thereof, each packaging blank including an inner carrier portion bounded by said peripheral band portion of the blank and being connected with the encircling band portion only by a plurality of weak connections integral with the carrier portion and the band portion, said carrier portion of each blank defining a plurality of constrictive apertures therein disposed in a plurality of juxtaposed rows for receiving and snugly embracing the upper ends of containers to provide carrying support thereto, and said peripheral band portion of each blank being integrally joined to the peripheral band portion of each adjacent blank by weak connecting elements which serve to hold the successive blanks in connected relation to each other while facilitating subsequent separation of the blanks by rupture of the connecting elements between adjacent band portions.

6. For use in forming a succession of carrier packs of containers, a connected series of substantially flat and generally rectilinear packaging blanks formed of a stretchable plastic material, each packaging blank including an endless peripheral band portion thereof having a generally rectangular shape, each packaging blank including an inner carrier portion bounded by said peripheral band portion of the blank and being connected with the encircling band portion only by a plurality of weak connections integral with the carrier portion and the band portion, said carrier portion of each blank defining a plurality of constrictive apertures therein disposed in a plurality of juxtaposed rows for receiving the upper ends of containers, said peripheral band portion of each blank being integrally joined to the peripheral band portion of each adjacent blank by weak connecting means, and said endless peripheral band portion of each blank defining an inwardly projecting tear tab thereon and defining a series of perforations extending across the band portion from the vicinity of the tear tab thereon to facilitate subsequent tearing of the band portion along said series of perforations by manual force applied to said tabs.

7. For use in forming a carrier pack for containers including a substantially flat blank having a generally rectilinear shape and being formed of an elastic material, said blank including an inner generally rectilinear carrier portion surrounded by an endless peripheral band portion of the blank, handle means to facilitate carry products with said carrier, said carrier portion having a plurality of slits therein arranged in juxtaposed rows and adapted to be spread apart by the free ends of containers when inserted therein, said endless peripheral band portion of said blank being connected to said carrier portion only by a plurality of weak connecting portions of said blank spaced around said carrier portion whereby said band portion is readily separable from said carrier portion after the carrier has been mounted on the upper ends of complementary containers.

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