

[54] **CARRIER PACKAGE**

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 815,264, Apr. 7, 1969, abandoned.

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[51] Int. Cl.B65d 71/00, B65d 85/62

[58] Field of Search206/65 C, 65 E, 65 D;
294/87.2, 87.26; 224/45.2

[56] **References Cited**

UNITED STATES PATENTS

3,245,711	4/1966	Dantoin.....	294/87.2
3,075,799	1/1963	Weiss.....	294/87.2
3,414,313	12/1968	Schwarz.....	206/65 C

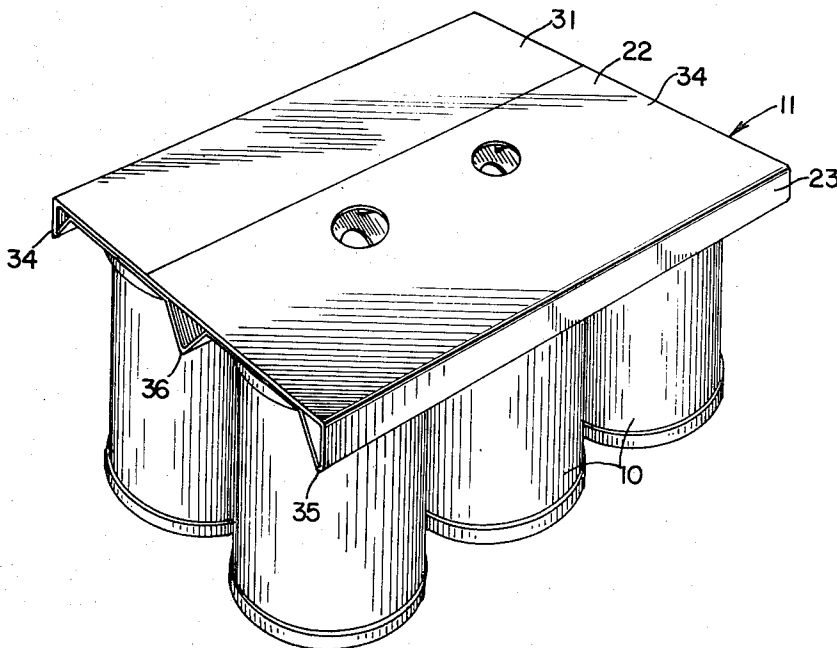
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[57] **ABSTRACT**

A package in which a plurality of beverage cans, bottles or other containers of similar character are arranged in row formation with the tops thereof locked to the bottom panel of a folded paperboard carrier by engaging portions of the chimes, or other projecting beads or flanges in oppositely disposed apertures arranged in spaced and paired relation along inwardly and upwardly inclined narrow side wall panels in a single row package and along like side wall panels and a narrow V-shaped center rib, in a double row package, the center rib in the latter depending from the bottom face of the carrier and disposed between the two rows of containers with small tabs cut from the material at the bottom side of each chime receiving aperture which are adapted to lie against the container wall with the top edges thereof engaging beneath the projecting chimes or other projecting means. The carrier may have finger holes or handle means permitting it to be more readily grasped for carrying the assembly.

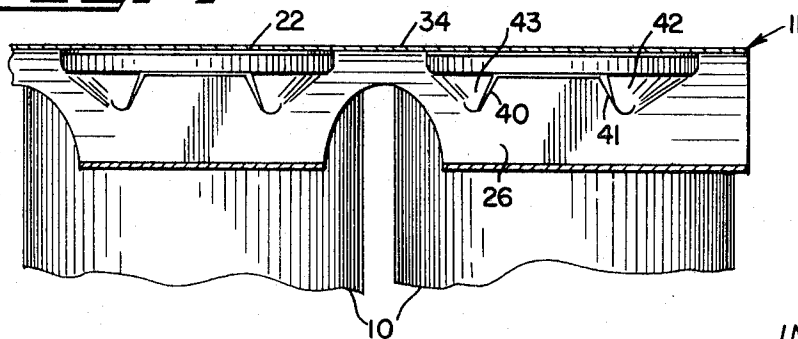
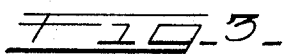
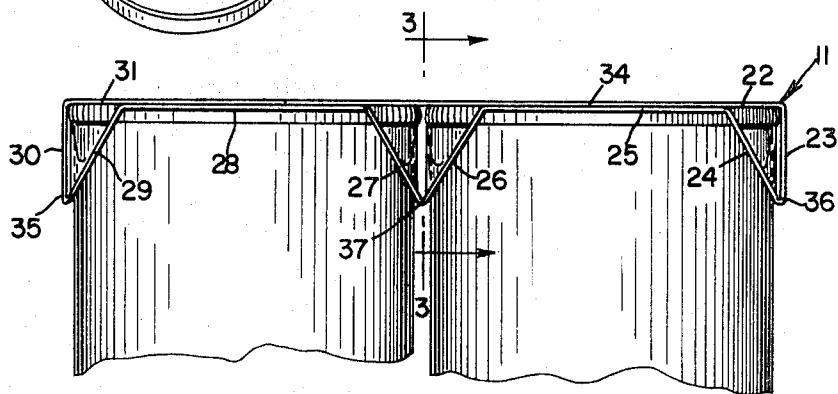
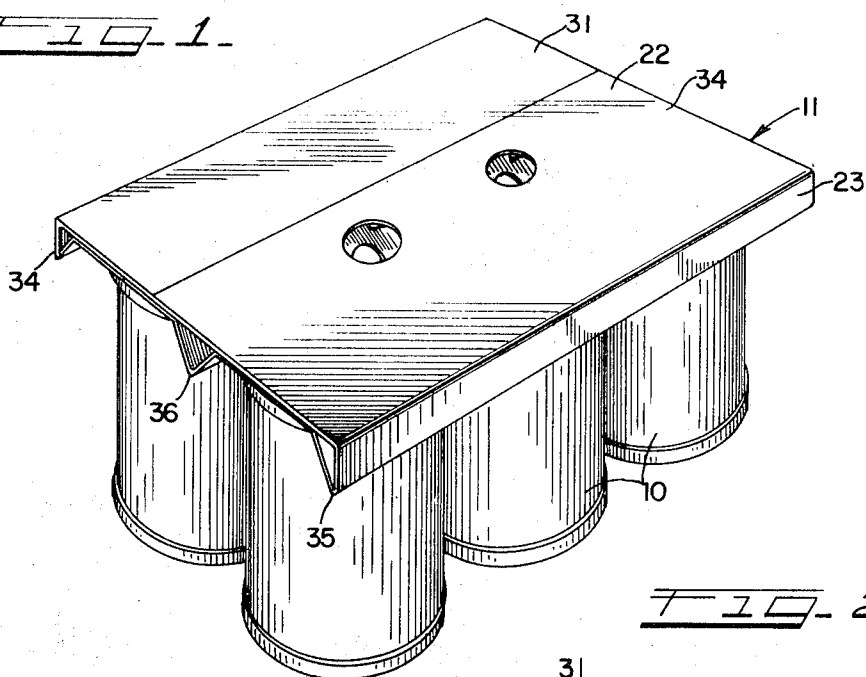
11 Claims, 19 Drawing Figures



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5 Sheets-Sheet 1



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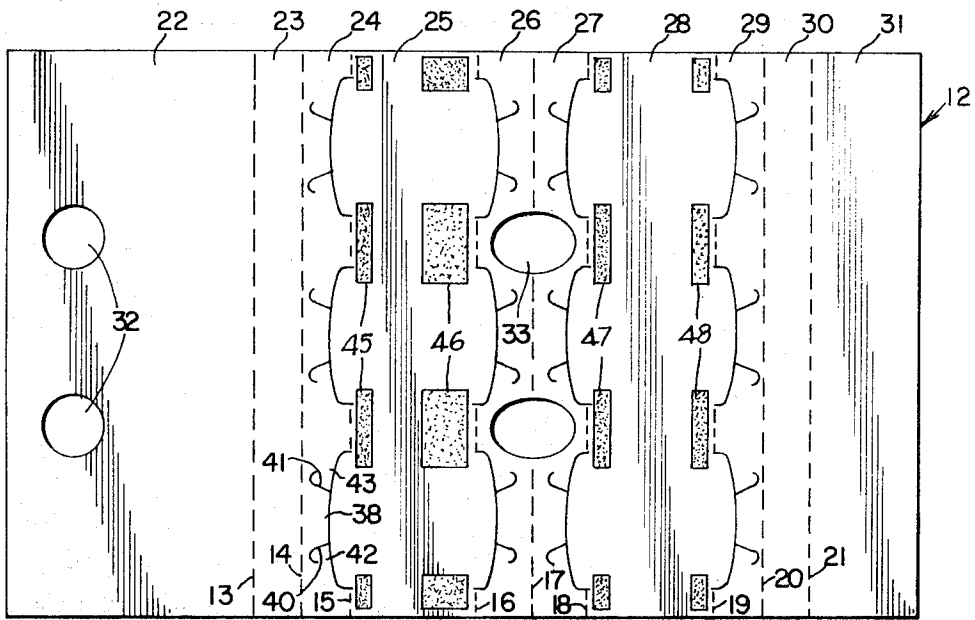


FIG. 4

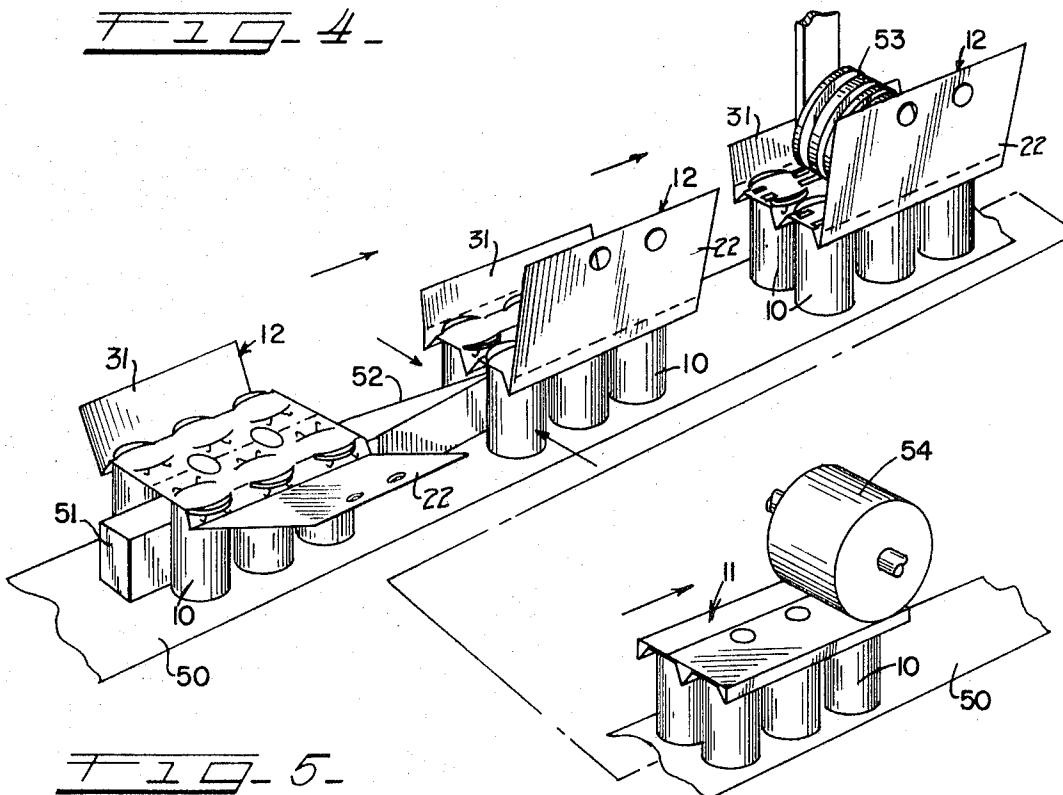
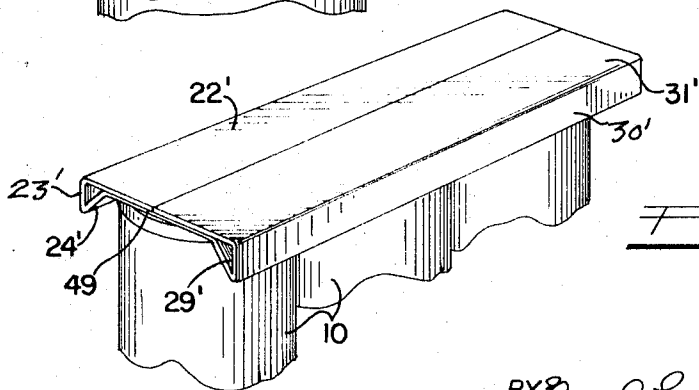
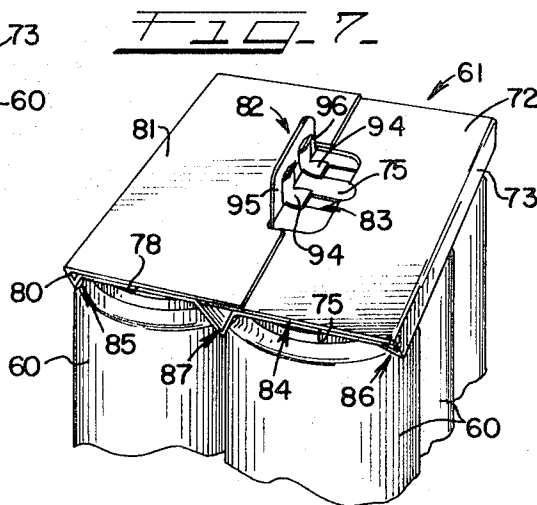
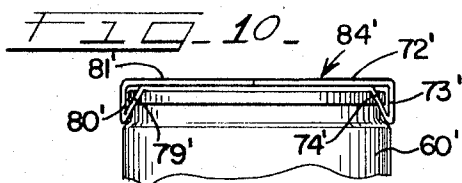
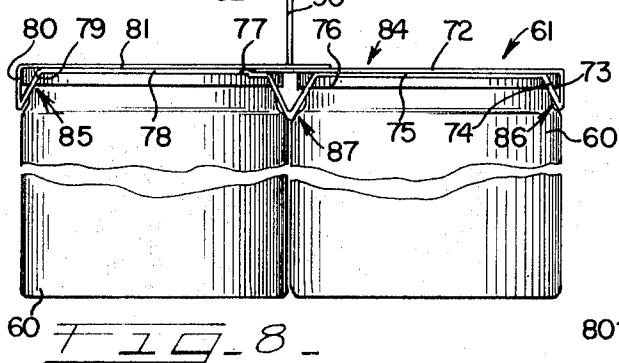
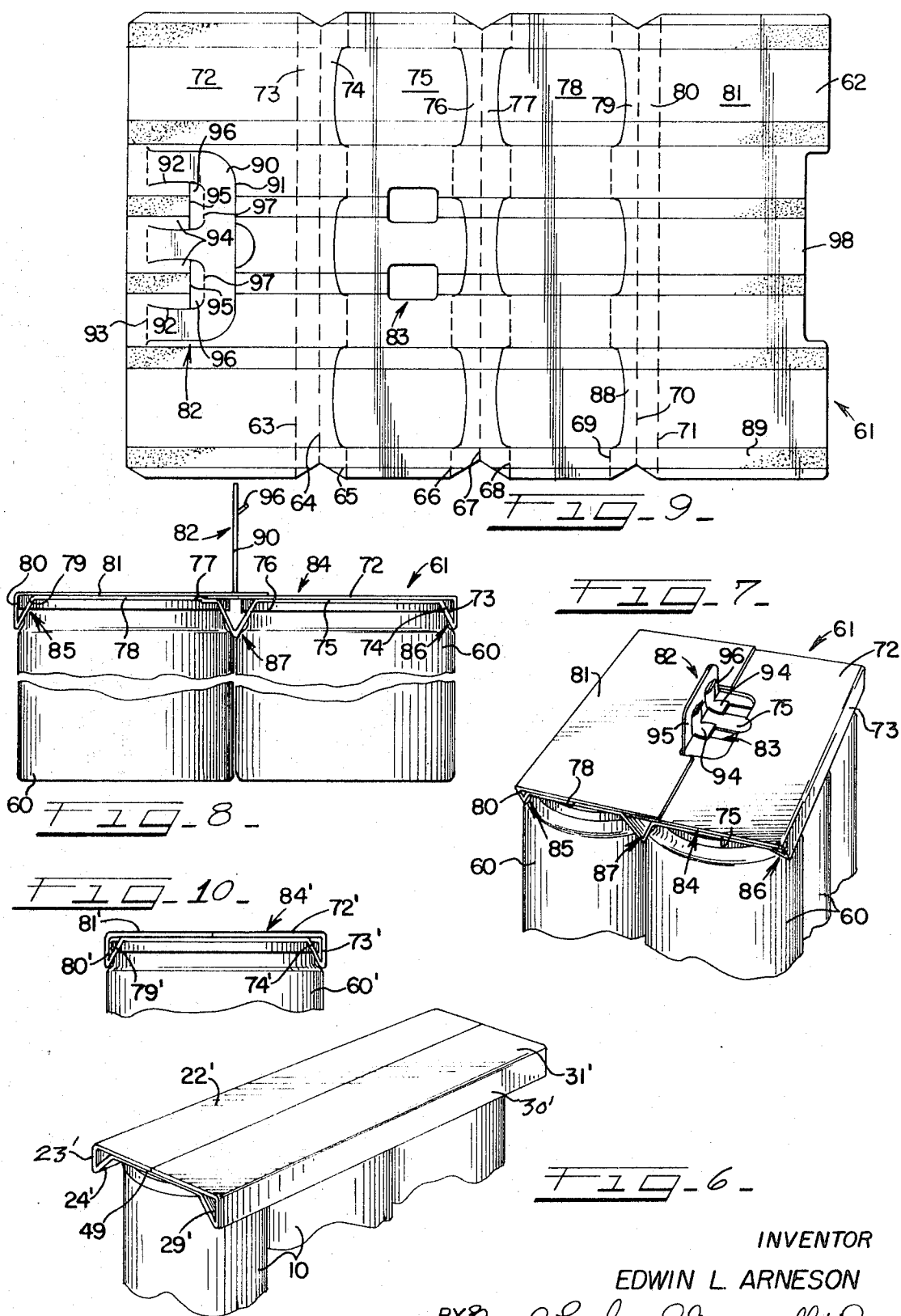


FIG. 5

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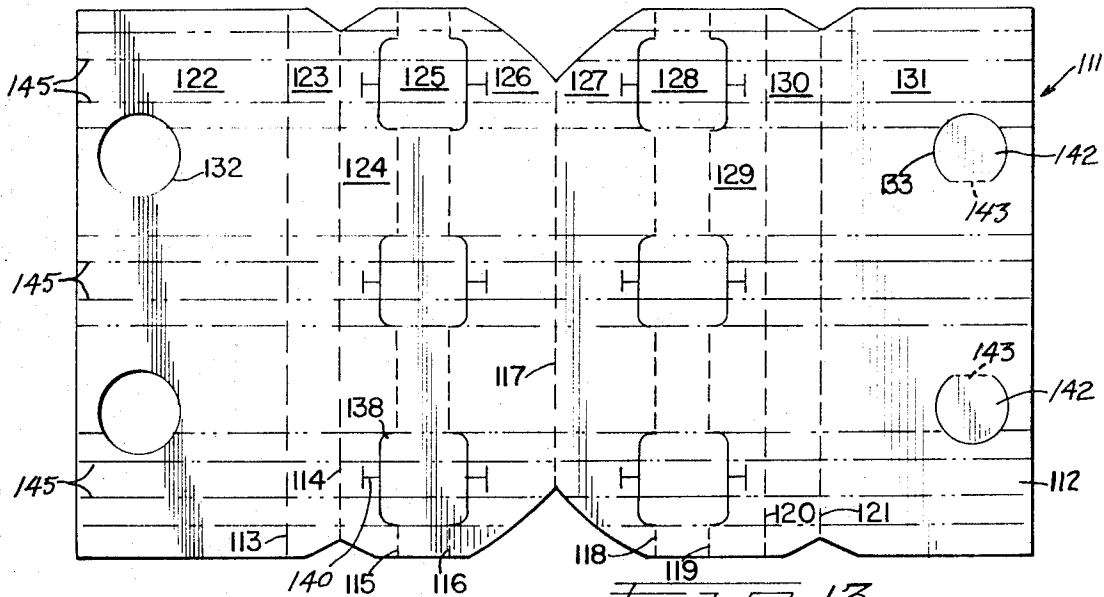


FIG. 13

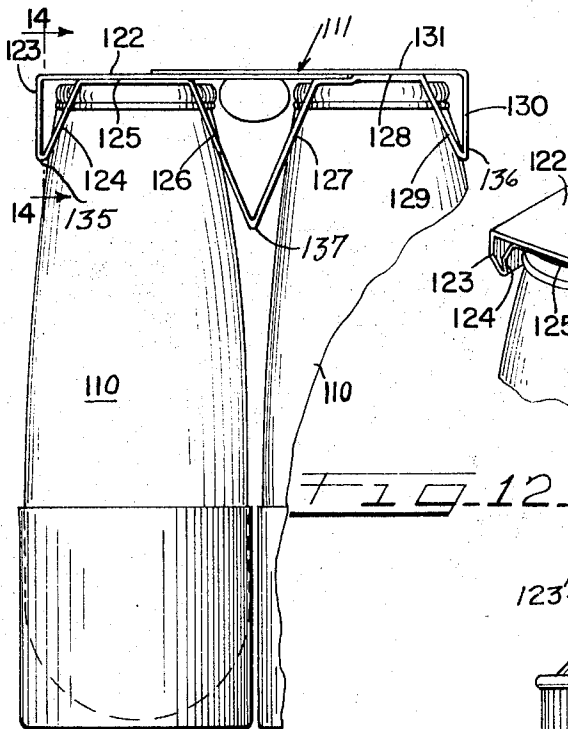


FIG. 12

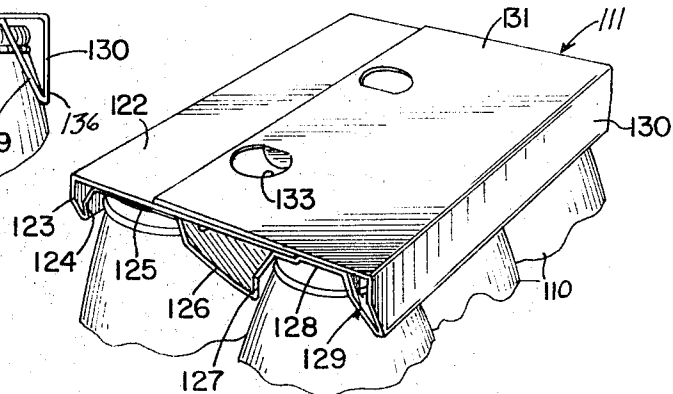


FIG. 11

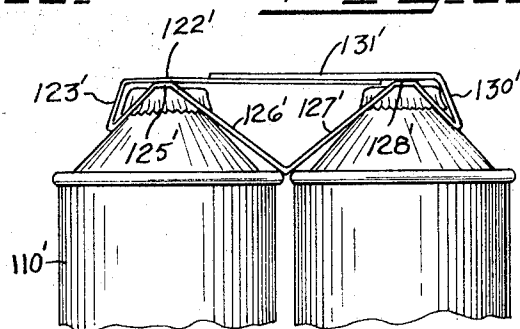


FIG. 15

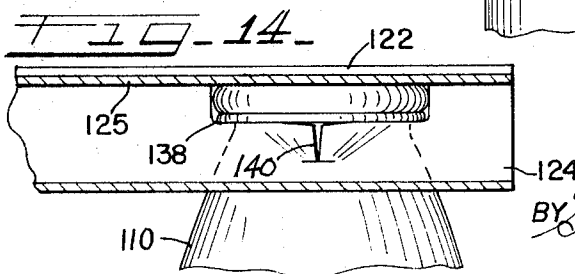


FIG. 14

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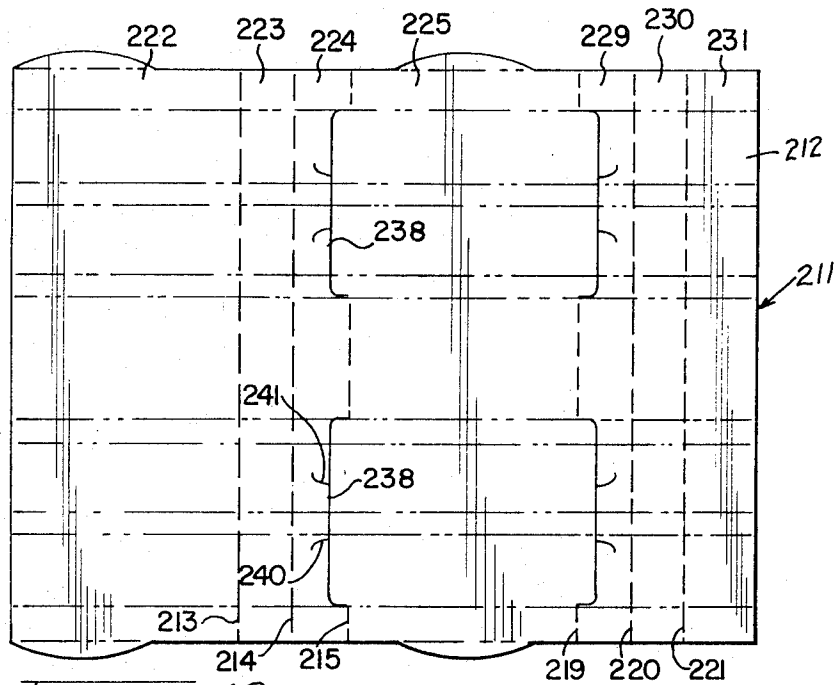


FIG. 19

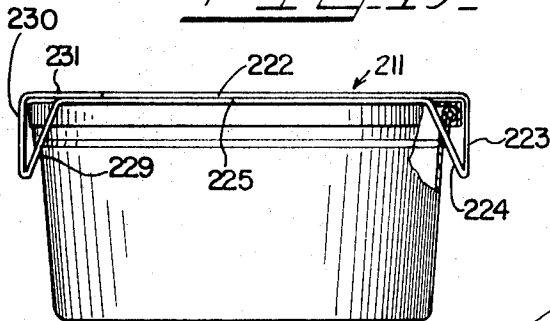


FIG. 18

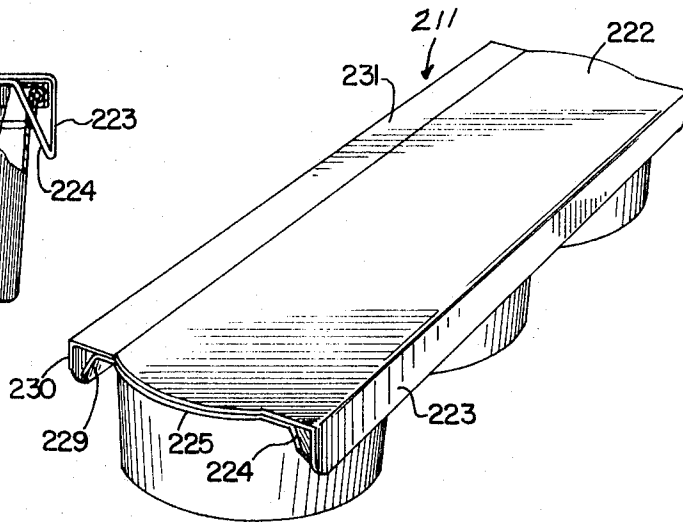


FIG. 17

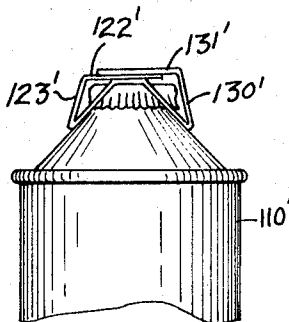


FIG. 16

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CARRIER PACKAGE

This application is a continuation-in-part of my application Ser. No. 815,264, filed Apr. 7, 1969 now abandoned.

This invention relates to packaging and is more particularly concerned with improvements in paperboard carriers designed for holding in assembled relation a plurality of beverage cans, bottles or other containers so that they may be conveniently handled and carried as a single package unit.

Many different carrier arrangements have been provided for use in marketing canned beverages, such as beer and soft drinks, and other products packaged in similar containers, the carrier being designed, generally, to support a single row of the containers, or in the case of beverages, more often, a double row of three cans each, arranged in paired relation, and commonly referred to as a "six-pack" package. In one form of carrier for this purpose provision is made for gripping top portions of the containers to hold them in assembled relation. Such so-called top gripper carriers have been produced in both paperboard and plastic with various arrangements for attaching the carrier to the tops of the containers. Most of these prior arrangements have not proven satisfactory, however, generally because the package does not have sufficient rigidity or the containers are not gripped in such a manner as to prevent accidental release of the same while they are being carried. It is a general object, therefore, of the present invention to provide a top gripper type carrier for an assembly of canned beverages or the like which may be fabricated of paperboard or similar sheet material and which has improved features, resulting in a more satisfactory package assembly, and particularly when applied to the conventional "six-pack" canned product assembly.

A more particular object of the invention is to provide an improved package assembly wherein one or more rows of cans or similar containers, filled with a beverage or other product, are locked in suspended relation to the bottom wall of a top gripping carrier member which may be readily fabricated from paperboard or similar foldable or bendable sheet material and which is characterized by a double ply main panel structure having substantial rigidity and with longitudinally extending, relatively narrow wall formations disposed in depending relation to said panel structure along the outer sides of the top end forming portions of the containers and along the inner sides thereof when there is a double row of the containers, which wall formations have spaced apertures for locking the containers therein.

Another object of the invention is to provide a package arrangement for products in cans or similar containers employing a carrier forming blank which may be readily fabricated from paperboard or similar foldable or bendable sheet material wherein two rows of the containers are locked to the inner wall of the carrier blank which is folded so as to form a double ply panel structure with longitudinally extending side and center rib formations disposed along the outer and inner sides of end forming portions of the containers and having spaced apertures for receiving bead or flange formations on the containers or closures thereon so as to lock the containers therein.

A further and more specific object of the invention is to provide a package in which an assembly of containers, for example, two rows of three containers each are disposed in oppositely paired relation, with the containers having chime or bead formations on the ends which are locked in suspended relation to the bottom forming face of a double ply carrier body structure having longitudinally extending side and center rib-like formations comprising panels of relatively narrow width which are inclined upwardly, which are integral with the bottom forming ply of the body structure and which are provided with apertures adapted to receive the chime or bead formations on opposite sides of the ends of the containers and having tab portions adapted to engage beneath the edges of the chime or bead formations so as to grip the containers with the side and center rib formations also forming rigidifying elements for the carrier.

These and other objects and advantages of the invention will be apparent from a consideration of the several forms of

the package unit and the method of fabricating the same which are shown by way of illustration in the accompanying drawings wherein:

FIG. 1 is a perspective view of a package unit comprising two rows of three flat top cans each assembled in depending relation with a top gripping type carrier structure which incorporates therein the principal features of the invention;

FIG. 2 is an end elevation of the package unit of FIG. 1, to a larger scale and with portions broken away;

FIG. 3 is a fragmentary section taken on the line 3—3 of FIG. 2;

FIG. 4 is a plan view of one side face of a paperboard blank which is cut and scored preparatory to forming the carrier for the package unit of FIG. 1;

FIG. 5 is a schematic perspective view illustrating the manner in which the carrier blank is applied to the can assembly and secured thereon;

FIG. 6 is a perspective view with portions broken away, showing a package unit comprising a single row of flat top cans assembled in depending relation with a top gripping carrier structure which is a modified form of the carrier of FIGS. 1 to 3;

FIG. 7 is a perspective view, with portions broken away, of a package unit comprising two rows of three cans each having necked-in top margins which are assembled in depending relation with a modified form of the carrier of FIGS. 1 to 3;

FIG. 8 is an end elevation of the package unit of FIG. 7, to a larger scale and with portions broken away;

FIG. 9 is a plan view of one side face of a paperboard blank which is cut and scored preparatory to forming the carrier for the package unit of FIG. 7;

FIG. 10 is an end elevation, with portions broken away, of a single row package unit employing a carrier blank which is a modified form of the blank of FIG. 9;

FIG. 11 is a perspective view, with portions broken away, showing a package unit comprising two rows of three composite bottle-like containers having the tops thereof assembled in depending relation with a further modified form of the carrier of FIGS. 1 to 3;

FIG. 12 is an end view, to a larger scale and with portions broken away, of the package unit of FIG. 11;

FIG. 13 is a plan view of one side face of a paperboard blank which is cut and scored preparatory to forming the carrier for the package unit of FIGS. 11 and 12;

FIG. 14 is a partial section taken on the line 14—14 of FIG. 12, to a larger scale;

FIG. 15 is an end elevation, with portions broken away, illustrating a package unit comprising two rows of cone topped cans depending from a carrier of FIG. 12;

FIG. 16 is an end elevation, with portions broken away, of a package unit comprising a single row of cone topped cans depending from a carrier which is a modified form of the carrier of FIG. 15;

FIG. 17 is a perspective view showing a package unit comprising a single row of tub-like containers depending from a carrier which is another modified form of the carrier of FIGS. 1 to 3;

FIG. 18 is an end elevation; with portions broken away, of the package unit of FIG. 17; and

FIG. 19 is a plan view of one side face of a paperboard blank which is cut and scored preparatory to forming the carrier for the packaging unit of FIGS. 17 and 18.

Referring first to FIGS. 1 to 3, there is illustrated a carrier packaging unit which embodies the principal features of the invention as applied to the packaging of six beverage cans of the type which have chimes at the ends of the cans which are adapted for engagement with a carrier device. The packaging unit comprises an assembly or group of cans 10 arranged in two rows of three cans each, in side-by-side relation, and attached in depending relation to a carrier device 11 formed from a single blank of paperboard, or other sheet material which is relatively flexible and bendable, which is capable of being cut and scored or creased to provide the form shown

and which has sufficient strength and rigidity to support the assembly of cans which it is designed to receive.

The carrier 11 in the package unit illustrated in FIGS. 1 to 3 is formed from a paperboard blank 12 which is cut and creased or scored as illustrated in FIG. 4. The blank 12 is of elongate generally rectangular form and is divided by parallel, longitudinally spaced, transverse score lines 13, 14, 15, 16, 17, 18, 19, 20 and 21 into panels 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31. The blank 12, as finally scored and cut, is symmetrical about the score line 17 except for the width of the end panel structures 22 and 31 and the presence of pairs of finger holes or apertures 32 and 33 in the one end panel 31 and the adjoining panels 26 and 27 on opposite sides of the score line 17, respectively.

The two end panels 22 and 31 are adapted to form the top ply of the double ply main section or body 34 (FIGS. 1 to 3) of the carrier. The next two panels 23 and 30, which are of relatively narrow width, are adapted to form narrow outside walls of rib-like can retaining and carrier reinforcing structures 35 and 36 (FIGS. 1 and 2). The narrow panels 26 and 27 which extend on opposite sides of the score line 17 are adapted to form a can locking or can retaining center rib structure 37 of V-shaped cross section extending between the two rows of cans 10. The panel sections 25 and 28 which extend between the score lines 15, 16 and 18, 19, respectively, have a width between the respective pairs of score lines which is less than the cross sectional diameter of the cans. These panels, 25 and 28, are adapted to be seated on the tops of the cans 10 and they constitute the bottom forming ply of the main body 34 of the carrier, the top ply thereof being formed by the end panels 22 and 31 which are secured to the bottom forming panels 25 and 28 by an adhesive, as hereinafter described, so as to form a relatively stiff or relatively rigid carrier body.

The panels 23 and 30 depend in generally vertical and parallel planes from the outer edges of the top panels 22 and 31 with the lower edges connected to the bottom ply forming panels 25 and 28 by upwardly slanted or diagonal chime locking panels 24 and 29 while the center chime locking panels 26 and 27 depend in converging diagonal relation from the bottom ply forming panels 25 and 28. Each of these can retaining or chime locking panels 24, 26, 27 and 29 is cut in the same manner to provide pocket-like recesses in oppositely disposed pairs of which diagonally opposite top portions of the cans are seated when the carrier is assembled with the cans. To provide the can retaining recesses three generally C-shaped cuts or slits 38 are made in each of the panels, as shown in FIG. 4, which interrupt the score lines 15, 16, 18 and 19, as shown, and which extend outwardly of the score lines, or relative to the panels 25 and 28, in each instance, the cuts being in paired, oppositely facing or opposed relation, so that the panel material between each pair of cuts 38 has a maximum dimension in the direction transverse of the score lines 15, 16, 18 and 19, which is somewhat less than the diameter of the can top. Also, each can retaining panel is provided with two spaced, oppositely inclined, J-shaped cuts 40 and 41 extending in diverging relation from a middle portion of each C-shaped cutting line and defining therewith two generally triangular tabs 42 and 43 (FIG. 3) which are adapted to bend as the material in the diagonal panel between the cutting line 38 and the adjacent hinge forming score line bends about the curved surface of the can so as to be against the outside surface of the can wall with the uppermost upwardly facing edge engaging beneath the can chime as illustrated in FIG. 3. The C-shaped cuts are spaced in the direction transversely of the blank 12 according to the spacing of the cans 10 in the assembly.

The blank 12 may be provided with a glue pattern as shown in FIG. 4, where four lines of glue spots 45, 46, 47 and 48 are shown, with the areas 46 having extra width to insure adequate adhesion of the margins of the top forming end panels 22 and 31 which are folded to bring their free edges adjacent each other as shown in FIG. 2. The glue employed may be heat activatable or pressure sensitive or the blank may have an adhesive coating of a suitable character for forming a seal.

A method of assembling the blanks with the cans in a continuous packaging operation is illustrated in FIG. 5. The cut and scored blanks 12 are fed by a suitable blank feeder to successive can assemblies advancing on a conveyor belt 50, or other suitable supporting surface, along which they are advanced in groups of two rows of three cans each, being moved along in any suitable manner by pushers, or the like, with the two rows separated by a bar 51, the side walls of which converge at 52 at the leading edge, so as to permit the two rows of cans to be moved adjacent each other by plows or the like. Each successive blank 12 is laid down in properly centered relation on the top of an assembly of cans 10 while the latter are spaced by the bar 51 and the panels 24 and 29 are plowed down to force the can chimes into the apertures therein. The center panels 26 and 27 are plowed down as the assembly reaches the end 52 of the separating bar 51 and the two rows of cans are moved toward each other so as to engage the can chimes in the recesses in these panels. As the partially assembled carrier and cans advance glue may be applied by applicator rollers 53 or the like, or pre-applied adhesive areas may be activated by a suitable activating means after which the end panels 22 and 31 are folded over into engagement with the panels 25 and 28 and the completed assembly is passed beneath a pressure roller 54 to complete the package.

The carrier which is illustrated in FIGS. 1 to 3 may be adapted for the packaging of a single line or row of flat top chimed containers as illustrated in FIG. 6. In this form of the invention the blank is reduced in length and cut and scored to provide end panels indicated at 22' and 31' (FIG. 6) which correspond to the panels numbered 22 and 31 of FIG. 4 except for the dimensions lengthwise of the blank and omission of the finger holes 32, and side wall and chime gripping panels 24' and 29' which correspond to the panels 24 and 29 of FIG. 4 and which are cut to form chime receiving apertures of the same character as shown in FIG. 4. The bottom or inner wall forming panel, indicated at 49, which is integrally hinged to the chime gripping panels 24' and 29' may be imperforate and is glued or otherwise secured to the two top forming panels 22' and 31' in the same manner as in the double row carrier of FIGS. 1 to 3 so as to form a relatively rigid double ply cover extending over the major portion of the container end walls. The number of containers in the row may, of course, be varied, each container being locked to the carrier by engagement of the chimes in the apertures in the oppositely disposed diagonal panels 24' and 29'.

In FIGS. 7 to 9 there is illustrated a carrier packaging unit embodying the invention as applied to the packaging of an assembly of beverage containers or cans 60 of the type which are currently produced of aluminum and which have "necked-in" top margins with a top end closure or cap of the same structure as employed on the more common tin cans so that a chime formation protrudes beyond the adjoining side wall portions and provides an abutment forming rib or flange for locking the tops of the cans 60 to the bottom face of the carrier 61.

The blank 62 for the carrier of FIG. 7 is cut and scored as illustrated in FIG. 9. It is of generally rectangular form and is divided by parallel, longitudinally spaced, transverse score lines 63, 64, 65, 66, 67, 68, 69, 70 and 71 into panels 72, 73, 74, 75, 76, 77, 78, 79, 80 and 81. The blank as scored and cut is generally symmetrical about the transverse score line 67 except for the width of the endmost panels 72 and 81 and the provision of a handle structure 82 in panel 72 and a pair of cutouts or apertures 83 in panel 75.

The two end panels 62 and 71 are adapted to form the top ply of the double ply main section or body 84 (FIGS. 7 and 8) of the carrier. The next two panels 73 and 80, which are of relatively narrow width, are adapted to form narrow outside walls of rib-like can retaining and carrier reinforcing structures 85 and 86 (FIGS. 1 and 2). The narrow panels 76 and 77 which extend on opposite sides of the score line 67 are adapted to form a can locking or can retaining center rib structure 87 of V-shaped cross section extending between the

two rows of cans 60. The panel sections 75 and 78 which extend between the score lines 65, 66 and 68, 69, respectively, have a width between the respective pairs of score lines which is less than the cross sectional diameter at the tops of the cans. These panels, 75 and 78, are adapted to be seated on the tops of the cans 60 and they constitute the bottom forming ply of the main body 84 of the carrier being secured to the bottom forming panels 75 and 78 by lines of adhesive, as indicated at 89 (FIG. 9) so as to form a relatively stiff or relatively rigid carrier body. The panels 73 and 80 depend in generally vertical and parallel planes from the outer edges of the top panels 72 and 81 with the lower edges connected to the bottom ply forming panels 75 and 78 by upwardly slanted or diagonal chime locking panels 74 and 79 while the center chime locking panels 76 and 77 depend in converging diagonal relation from the bottom ply forming panels 75 and 78 with each of these can retaining or chime locking panels 74, 76, 77 and 79 being cut in the same manner to provide pocket-like recesses in oppositely disposed pairs of which diagonally opposite top portions of the cans are seated when the carrier is assembled with the cans. To provide the can retaining recesses three generally C-shaped cuts or slits 88 are made in each of the panels, as shown in FIG. 9, which interrupt the score lines 65, 66, 68 and 69, as shown, and which extend outwardly of the score lines, or relative to the panels 75 and 78, in each instance, the cuts being in paired, oppositely facing or opposed relation, so that the panel material between each pair of cuts 88 has a maximum dimension in the direction transverse of the score lines 65, 66, 68 and 69, which is somewhat less than the diameter of the can top. The C-shaped cutting lines are located so that the chime portions seat in the resulting apertures and the material in the diagonal panel between the cutting line 88 and the adjacent hinge forming score line bends about the curved and inwardly slanted surface of the can immediately below the chime so that the uppermost upwardly facing edge engages beneath the can chime. The C-shaped cuts 88 are spaced in the direction transversely of the blank 62 according to the spacing of the cans 60 in the assembly.

The handle structure 82 formed in end panel 72 comprises a hand or finger gripping member 90 formed by the generally C-shaped outer cut 91 and a pair of smaller, generally U-shaped cuts 92, the legs of which terminate at a hinge forming score line 93 which is parallel with the terminal edge of the blank and which is interrupted between the legs of the cutting lines 93. Glue tabs 94 are formed by cross cuts 95 which leave small finger hole reinforcing flaps 96 adapted to be folded back about the short score lines 97 which interrupt the cross bar portion of the U-shaped cuts 92. The end edge of the end panel 81 is cut away at 98 and the width of the panels 72 and 81 is sufficient to provide a small overlapping of the panel margins. In assembling the carrier blank with the containers 60 the glue tabs 94 are secured to the panel 75 when the panels 72 and 81 are overlapped and these tabs 94 reinforce the anchoring portion of the handle structure as shown in FIG. 7.

The carrier may be adapted to form a package of a single row of the "necked-in" top cans as illustrated in FIG. 10. In fabricating the blank for a single row of the cans 60' the double ply body panel 84' is reduced in width and the center can retaining rib structure (Panels 76, 77 in FIG. 9) is omitted. Also, the handle structure 82 and apertures 83 are omitted since a single row assembly can easily be grasped without the handle. The elements in the single row carrier which correspond to elements in the double row carrier are indicated by the same numerals primed. The widths of the various panels are, of course, dependent upon the dimensions of the cans.

In FIGS. 11 to 14, the carrier is shown adapted to the packaging of the newly designed composite containers which are in the form of bottles 110 of relatively thin glass having the bottom portion encased in a plastic reinforcing base.

The carrier 111 (FIG. 11) is formed from a blank 112 which is cut and scored as illustrated in FIG. 13. The blank is divided

by parallel, longitudinally spaced, transverse score lines 113, 114, 115, 116, 117, 118, 119, 120 and 121 into panels 122, 123, 124, 125, 126, 127, 128, 129, 130 and 131. The blank is symmetrical about the center score line 117 except for finger holes 132 and 133 in end panels 122 and 131. The panels 124, 126, 127 and 129 are provided with transversely spaced, generally C-shaped cuts 138, the ends of which terminate at the score lines 115, 116, 118 and 119 so as to form, when the blank is folded, pairs of oppositely disposed apertures for receiving portions of the protruding or radially projecting rib-like lip or rim at the mouth of the bottle 110 over which a closure cap is tightly fitted when the bottle is filled, with the flanged edge thereof constituting a downwardly facing abutment beneath which there is engaged the edge of the material in the associated retaining panel which results from the cut 138. T-shaped cuts 140 are provided in the retaining panel which serve to better enable the material to hug the surface of the bottle adjacent the bottle rim. The holes 133 of the blank 112 are formed by C-shaped cuts which leave reinforcing tabs 142 adapted to hinge on score lines 143 and the blank is provided with lines or strips of glue, as indicated at 145 in FIG. 13, for securing the panels to each other.

The carrier 111 is adapted to be folded and positioned on the tops of an assembly of the bottles 110 in the same manner as illustrated in FIG. 5. The panels 123, 124 and 129, 130 which adjoin the endmost panels 122 and 131 are of relatively narrow width and form depending outside retaining rib structures 135 and 136 while the panels 126 and 127 which adjoin the middle score line 117 are wider and form a depending center rib structure 137 between the two rows of bottles 110 with the panels 125 and 128 being of lesser width than the diameter of the bottle closures and being seated on the latter and locked thereto by the engagement beneath the closure skirts of the edges of the material in the retaining panels 124, 126, 127 and 129 which results from the cuts 138. The center rib 137 has a depth sufficient to position the retaining panels 126 and 127 at an angle relative to the plane of the panels 125 and 128 to efficiently lock the carrier onto the tops of the bottles 111 while holding the two rows disposed in properly spaced, vertical position in the assembly. The panels 122 and 131 overlap sufficiently to reinforce and stiffen the area over the depending central rib formation 137 as well as providing two plies at the finger holes 132, 133.

The blank of FIG. 13 may be adapted to the packaging of a single row of the bottles 110 by reducing the length of the blank and eliminating panels 126, 127 and 128. The finger holes 132 and 133 may be eliminated and the panels 122 and 131 reduced so that the free edges abut when these panels are folded and secured to the center panel to form the top face of the carrier.

The blank of FIG. 13 may be readily adapted to the packaging of an assembly of cone topped cans which have the mouths thereof closed by conventional caps as illustrated in FIGS. 15 and 16, where corresponding elements are identified by the same numerals as appear in FIG. 13 primed. In the single row form of the carrier (FIG. 16) the center panels in the blank, that is, panels 125', 126', 127' and 128' in FIG. 15 are, of course, replaced by a single panel and the dimensions of the panels are adjusted, in both the single and the double row carrier, according to the dimensions of the can top structure.

In FIGS. 17 to 19 the invention is illustrated as applied to the packaging of a single line of tub-like containers 210, such as, for example, the paperboard or plastic containers commonly employed in the packaging of cottage cheese and similar products.

The carrier 211 (FIG. 17) is formed from a blank 212 which is cut and scored as illustrated in FIG. 19. The blank 212 is divided by parallel, longitudinally spaced, transverse score lines 213, 214, 215, 219, 220 and 221 into panels 222, 223, 224, 225, 229, 230 and 231. The panels 224 and 220 are provided with transversely spaced, generally C-shaped or U-shaped cuts 238, the ends of which terminate at the score lines 215 and 219 so as to form, when the blank is folded, pairs of oppositely

disposed apertures for receiving portions of the protruding or radially projecting lip or rim at the mouth of the container. Each cut 238 has associated therewith a pair of J-shaped cuts 240 and 241 to provide locking tabs 242 and 243 of the same character as tabs 42 and 43 of FIGS. 3 and 4.

The number of containers or packages in a row may be varied in both the single row and the double row forms of the package. In conventional packaging operations, as now practiced, for canned or bottled beverages, for example, the assembly comprises, generally, either two rows of three each or two rows of four each. In all forms of the carrier the container tops are locked to the relatively rigid main body of the carrier by engaging top edge portions in oppositely disposed apertures provided in diagonal locking panels which are connected in rigid relation to the main body panel, with the outermost diagonal panels forming the inner panels or rib-like structures having, as a part thereof, narrow outer wall panels, each disposed in a plane substantially normal to the plane of the main body panel and having a width no greater than the width of the associated diagonal locking panel, which rib structures reinforce and rigidify the side edges of the carrier. In all of the illustrated forms of the double row packages rigidity of the carrier is increased by the three triangular rib structures which extend the length of the carrier.

I claim:

1. A carrier for an assembly of cylindrical containers which have chime-like formations on the ends thereof and which assembly comprises two rows of three containers each arranged in transversely aligned pairs, said carrier being formed of a single blank of relatively stiff bendable sheet material cut and scored to provide, when folded and assembled with the containers, a double ply coplanar body forming panel having the plies thereof rigidly connected which body forming panel is seated on the ends of the assembly of containers which have the chime-like formations and rib-like formations extending from the container engaging face of said body forming panel which include relatively narrow panels disposed along the opposite sides of the containers in each row thereof and inclined in a direction towards said body panel and the center of the container ends, each of said inclined panels being integrally connected to the innermost ply of said body forming panel and having apertures therein to receive portions of said chime-like formations, said apertures being spaced in accordance with the spacing of the containers in the rows thereof and each of said inclined panels having the edge thereof which is connected to the body forming panel spaced from the corresponding edge of the inclined panel on the opposite side of the associated row of containers a distance less than the diameter of the containers so that the ends of the containers are gripped between oppositely disposed inclined panels and held against the body forming panel, and the inclined panels which are disposed at the outboard sides of the rows of containers being integrally connected to narrow, vertically disposed side wall panels which are in turn integrally connected to the outboard edges of the outermost ply of the double ply body forming panel.

2. A carrier for an assembly of cylindrical containers which are characterized by having radially protruding, rib-like abutment formations on an end thereof and which are arranged in transversely aligned pairs, and in a double row, said carrier being formed of a single blank of foldable sheet material cut and scored to provide, when folded and assembled with the containers, a body forming panel of at least two rigidly connected plies for seating on the abutment bearing ends of the assembly of containers and having connected to the innermost face, which is engaged with said container ends, reinforcing and container locking rib formations extending along the outboard edges and between the rows of containers which reinforcing and locking rib formations include narrow panels inclined in a direction towards the center of the associated container ends, each of said inclined panels having apertures therein receiving portions of said container abutment formations which apertures are spaced in accordance with the spac-

ing of the containers in the rows thereof, each of said inclined panels being integrally connected to the innermost ply of said body forming panel on a line which is spaced from the line connecting the inclined panel on the opposite side of the associated row of containers to the same ply of said body forming panel a distance less than the diameter of the containers, so that the portion of the inclined panel adjacent each aperture is wrapped about the side wall of a container and the container ends are gripped between oppositely disposed inclined panels and held in engagement with the body forming panel, and said inclined panels which are disposed at the outboard sides of the containers being integrally connected to the outermost ply of said body forming panel by a narrow vertical side wall forming panel.

3. A carrier for an assembly of containers as set forth in claim 2 wherein said inclined panels are provided with spaced bendable tabs cut in the material adjacent each said aperture which are adapted to fold against the side wall of the container with free edges thereof engaging beneath said rib-like abutment formation so as to lock the ends of the container against the carrier body.

4. A carrier for an assembly of generally cylindrical containers which have radially protruding abutment forming, rib-like members on an end thereof, said containers being arranged in transversely aligned pairs and in a double row, said carrier being formed of a single foldable sheet of relatively stiff material cut and scored to provide, when folded and assembled with the containers, a main body forming panel with rigidly connected double plies of material for seating on the ends of the assembly of containers which containers are provided with said abutment forming members, said body forming panel having rib-like formations on the innermost face which engages the containers, which rib-like formations include relatively narrow panels extending along the opposite sides of the containers in each row thereof and which are inclined in a direction towards the center of the adjacent ends of the associated containers, the inclined panels which are disposed at the outboard sides of the rows of containers being integrally connected to narrow vertically disposed side wall panels which are in turn integrally connected to the outboard edges of the ply of the double ply main body forming panel which engages the containers, each of said inclined panels having apertures receiving therein portions of said abutment forming members, said apertures being spaced in accordance with the spacing of the containers in the rows thereof and each of said inclined panels having the edge thereof which is connected to the inner ply of said body forming panel spaced from the corresponding edge of the inclined panel on the opposite side of the associated row of containers a distance less than the diameter of the containers at the ends which are provided with said abutment forming members and said apertures being of size to cause adjoining portions of the inclined panels to bend about the adjacent side wall of the associated container whereby said container ends are gripped between oppositely disposed inclined panels.

5. A carrier for an assembly of containers as set forth in claim 4 and the inclined panels which are disposed between the rows of containers being connected to each other along the edges remote from the main body forming panel so as to provide a rib-like formation of triangular cross section.

6. A carrier for an assembly of containers as set forth in claim 4 and said inclined panels having tab formations cut in the material adjoining the apertures which tab formations have free edge portions facing in the direction of said abutment members and said free edges being adapted to engage beneath said abutment members so as to lock the end of the associated container in engagement with the main body forming panel.

7. A carrier for an assembly of containers as set forth in claim 6 and said tab formations being arranged in spaced pairs and being free to bend around the body of the associated container with the adjoining portions of the associated inclined panel.

8. A carrier for an assembly of generally cylindrical containers each of which has a radially protruding rib-like member on an end thereof forming an abutment facing toward the opposite end, said containers being arranged in a row, said carrier being formed of a single foldable sheet of relatively stiff material cut and scored to provide, when folded and assembled with the containers, a main body forming panel having double plies of material for seating on the ends of the assembly of containers which plies are adhesively secured in face-connected relation so as to form a rigid multi-ply panel structure, said body forming panel having rib-like formations on the face of the inner ply which engages the containers, which rib-like formations include relatively narrow container locking panels extending from the container end engaging ply of said body forming panel and along the opposite sides of the containers, which locking panels are inclined inwardly in a direction towards the center of the associated ends of the containers, the edge of each said container locking panel which is remote from said body forming panel being integrally connected to the outer ply of said body forming panel by a relatively narrow panel which is disposed in a plane generally normal to said body forming panel and which is of a width no greater than the width of said container locking panel, each of said container locking panels having apertures for receiving therein portions of said abutment forming members, said apertures being spaced in accordance with the spacing of the containers and each of said container locking panels having the edge thereof which is connected to the body forming panel spaced from the corresponding edge of the container locking panel on the opposite side of the associated containers a distance less than the end diameter of the containers and said apertures being of a size to cause portions of the container locking panels adjoining the apertures to bend about the adjacent side wall of the associated container whereby said con-

tainer ends are tightly gripped between oppositely disposed, container locking panels and locked to said rigid body forming panel.

9. A paperboard blank for use in packaging an assembly of containers which have chime-like rib or flange formations on an end thereof and which are arranged in paired, double row formation, said blank being generally rectangular, and having parallel transverse scores which divide the same into end panels adapted to form the top ply of a double ply supporting panel for seating on the ends of the assembly which have the rib or flange formations and a pair of bottom ply forming panels each of a width less than the diameter of the rib or flange formations, said top ply forming panels being separated from the outboard edges of the bottom ply panels by a pair of relatively narrow side wall and container retaining panels and said pair of bottom ply panels being separated from each other by a pair of relatively narrow center rib forming and container end retaining panels, said container retaining panels having aperture forming cuts therein which are in paired, oppositely disposed relation so that each pair thereof will receive therein portions of the rib or flange formation on the end of a container and the material at the margin of each aperture having one or more cuts extending in a direction away from said bottom ply forming panels which divide the same so as to provide locking tabs for engaging beneath said rib or flange formations on said containers.

10. A paperboard blank as set forth in claim 9 and the aperture forming cuts being generally C-shaped with the cuts of each pair thereof facing in opposite directions.

11. A paperboard blank as set forth in claim 10 and the cuts forming the locking tabs being generally J-shaped and in paired relation with each pair thereof diverging in the direction away from the bottom ply forming panels.

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