United States Patent

Forrer

[15] **3,674,136**

[45] **July 4, 1972**

[54] CARRIER FOR FLANGED ARTICLES

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[73] Assignee: **The Mead Corporation,** Dayton, Ohio

[22] Filed: **June 1, 1971**

[21] Appl. No.: **148,597**

[52] **U.S. Cl.** .....**206/65 S,** 206/65 E, 206/45.33, 224/45 AB, 294/87.22

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

[58] **Field of Search** .....294/87.22; 224/45 AB, 45 BA, 224/45 AC, 45 P, 45 A, 45 R; 206/65 E, 65 S

[56] **References Cited**

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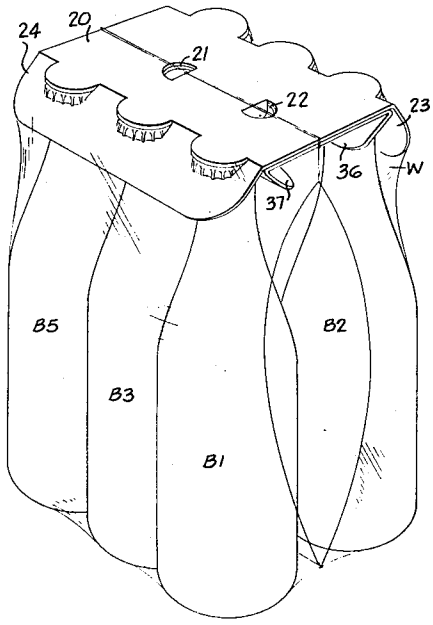
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Primary Examiner—Gerald M. Forlenza
Assistant Examiner—Jerold M. Forsberg
Attorney—Walter M. Rodgers

[57] **ABSTRACT**

A carrier for flanged articles comprises a pair of main panels arranged in face contacting relation and disposed in overlying relation with respect to the articles and a pair of auxiliary panels are foldably joined to each of the main panels along opposite side edges thereof and apertures are formed in each of the auxiliary panels in close proximity to the upper ends of the adjacent articles. The auxiliary panels of the lower main panel are folded inwardly through angles substantially in excess of 90° so that the apertures therein at least partially envelop the upper ends of the adjacent articles. The auxiliary panels associated with the top main panel are folded downwardly through angles of 90° or less to positions wherein portions of the upper ends of adjacent articles are enveloped within the apertures formed therein so that each article is gripped below its flange from opposite sides by the auxiliary panels.

8 Claims, 14 Drawing Figures



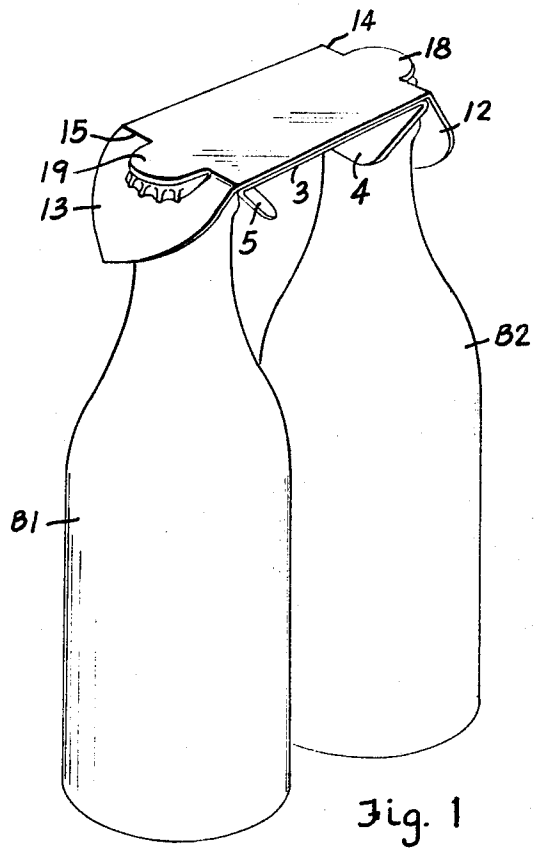


Fig. 1

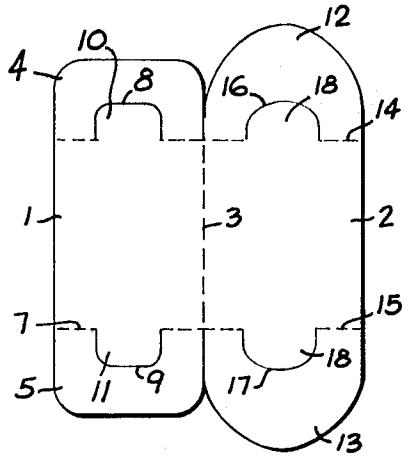


Fig. 2

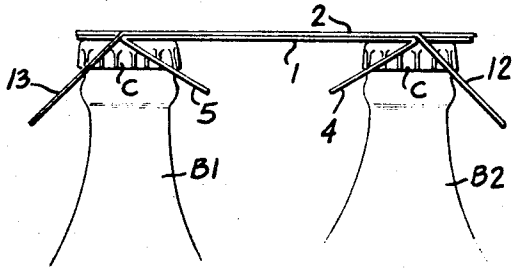


Fig. 3

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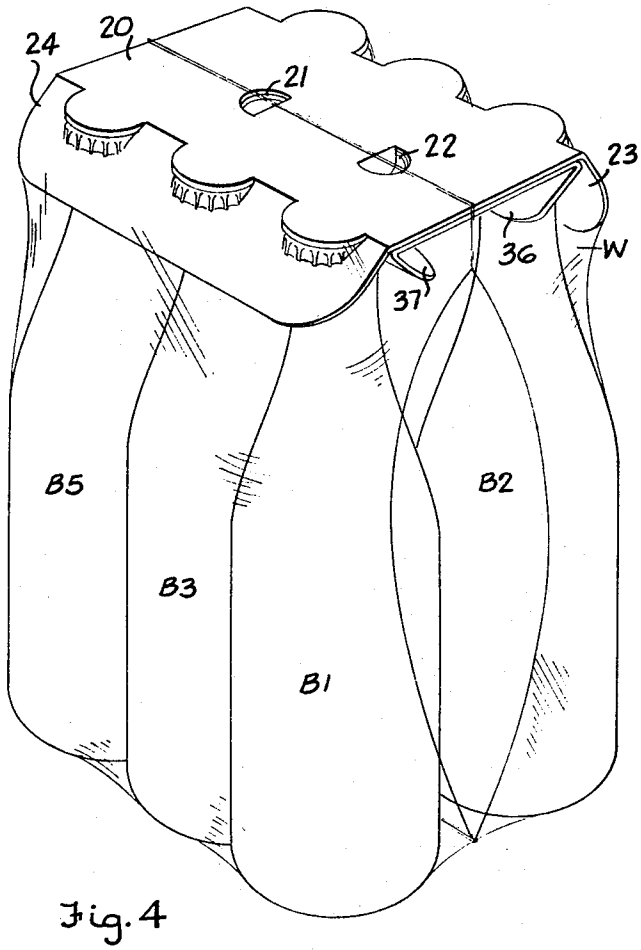


Fig. 4

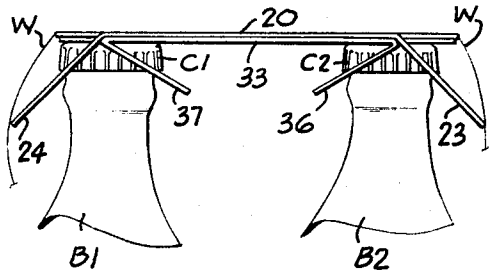


Fig. 7

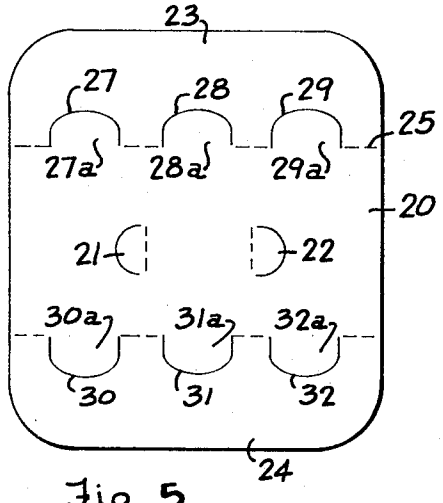


Fig. 5

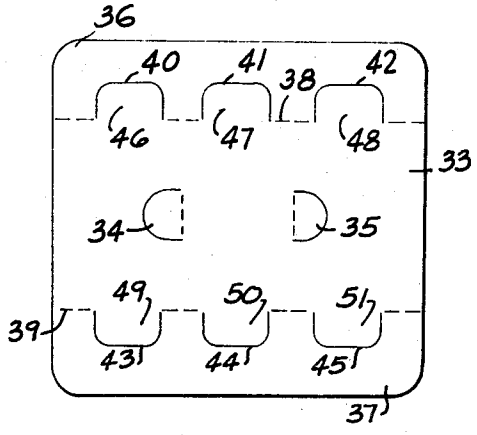


Fig. 6

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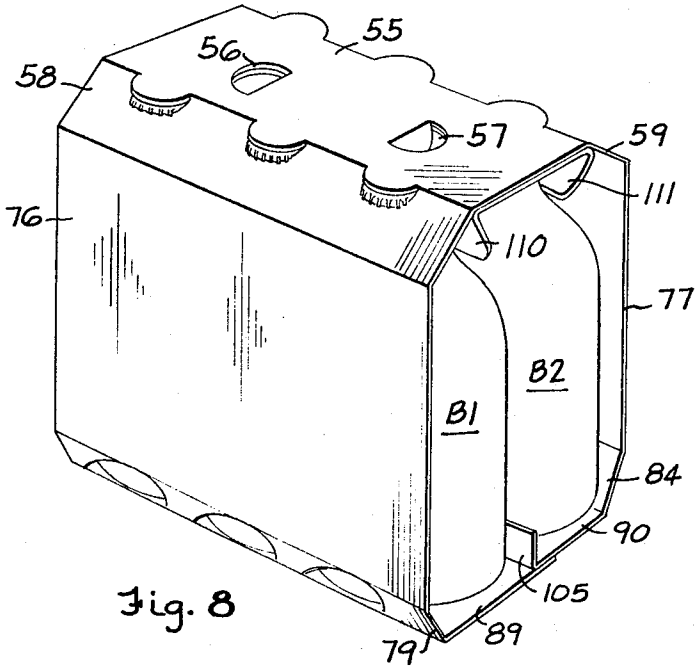


Fig. 8

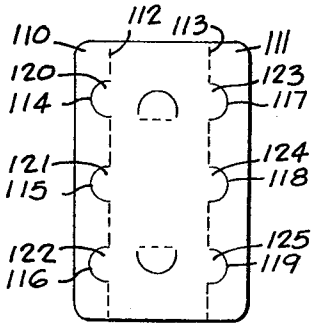


Fig. 10

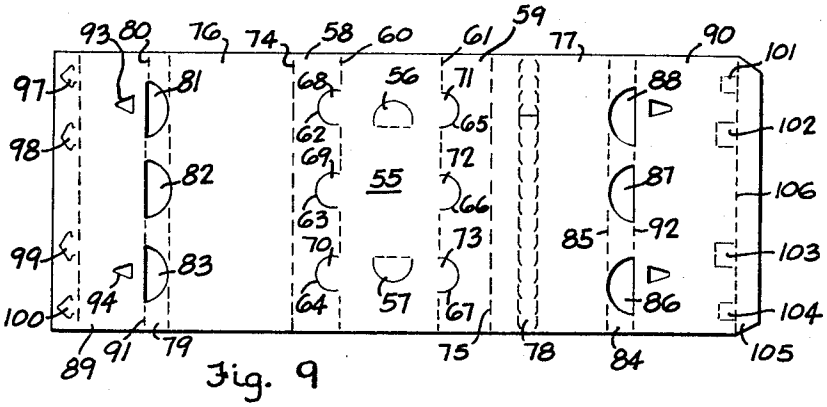


Fig. 9

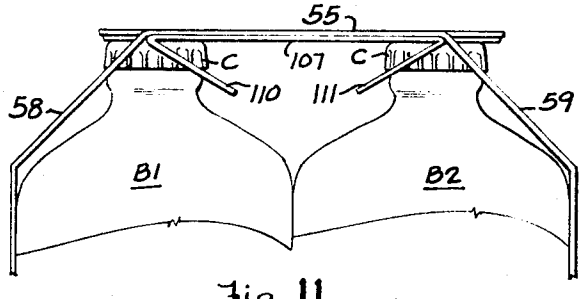


Fig. 11

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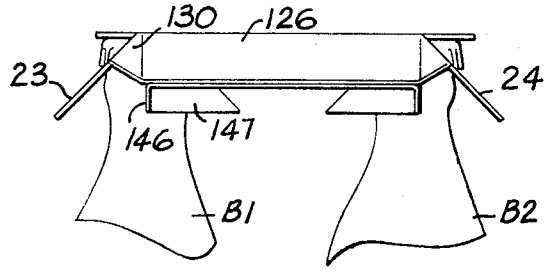


Fig. 14

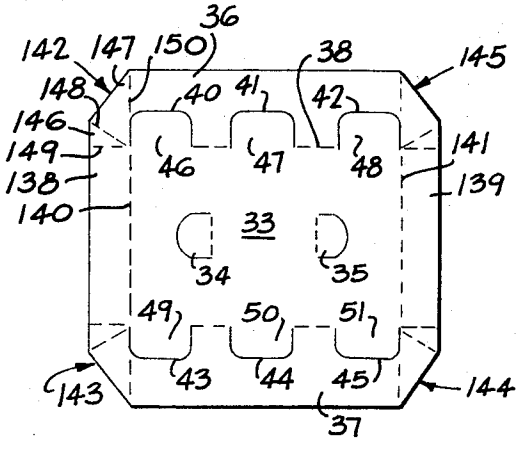


Fig. 13

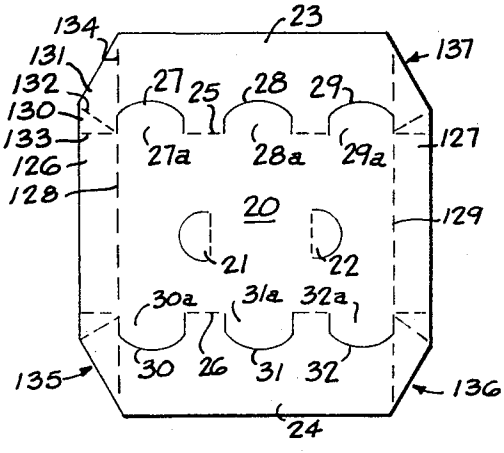


Fig. 12

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CARRIER FOR FLANGED ARTICLES

Carriers for flanged articles are well known in which means are provided for gripping the articles immediately below their flanges. Some conventional flange gripping carriers are well suited for use in conjunction with wraparound type carriers made of paperboard. Other known flange engaging carriers are well suited for use in conjunction with shrink film packages while still other carriers for flanged articles are best suited for packaging articles in a single row only.

According to this invention a double-gripping action is provided which is well suited for use in conjunction with wraparound type carriers constructed of paperboard as well as for use in conjunction with article carriers wherein the overwrap is formed of shrink film material. Furthermore carriers may be constructed according to this invention for use in conjunction with a pair only of flanged articles or may be used to package a group of articles of a substantial number of articles.

For a better understanding of the invention reference may be had to the following detailed description taken in conjunction with the accompanying drawings in which

FIG. **1** is a perspective view of a carrier for a pair of flanged articles wherein no overwrap is utilized;

FIG. **2** is a plan view of the blank from which the carrier of FIG. **1** is formed;

FIG. **3** is an end view of the carrier shown in FIG. **1**;

FIG. **4** is a perspective view of a package utilizing a stabilizing device formed according to the present invention and wherein an overwrap of shrink film material is disposed about the article group;

FIG. **5** is a plan view of one of the two blanks used to form the stabilizing device of FIG. **4**;

FIG. **6** is a plan view of the other of the two blanks utilized to form the stabilizing device shown in FIG. **4**;

FIG. **7** is an end view of the arrangement depicted in FIG. **4**;

FIG. **8** is a perspective view of a wraparound type carrier formed for example of paperboard and wherein means are provided for gripping the tops of the packaged articles according to a modification of the invention;

FIG. **9** is a plan view of the main blank used to form the carrier in FIG. **8**;

FIG. **10** is a plan view of the inner blank incorporated within the package shown in FIG. **8**;

FIG. **11** is an end view of the package depicted in FIG. **8**;

FIG. **12** is a plan view similar to FIG. **5** but which includes an end panel;

FIG. **13** is a plan view similar to FIG. **6** but which includes an end panel; and in which

FIG. **14** is an end view of a package formed from the blanks of FIGS. **12** and **13**.

With reference to FIGS. **1**, **2** and **3**, a pair of main blanks **1** and **2** are foldably adjoined along their end edges at the fold line designated by the numeral **3**. A pair of auxiliary panels **4** and **5** are foldably joined to main panel **1** along the side edges **6** and **7** thereof respectively. U-shaped slits **8** and **9** are formed in auxiliary panels **4** and **5** respectively and define apertures in auxiliary panels **4** and **5** and also form tabs **10** and **11** which overlie the tops of the packaged bottles "B."

Auxiliary panels **12** and **13** are foldably joined to main panel **2** along fold lines **14** and **15** respectively. Generally U-shaped cuts **16** and **17** are formed in auxiliary panels **12** and **13** respectively and define apertures in the auxiliary panels and also form tabs **18** and **19** which overlie the tops of the packaged articles.

The package shown in FIGS. **1** and **3** is formed by folding main panel **2** along fold line **3** into overlying relation with respect to main panel **1**. Thereafter auxiliary panels **4** and **5** are folded downwardly out of the plane of main panel **1** through angles substantially in excess of **90°**. Auxiliary panels **12** and **13** are folded downwardly out of the plane of main panel **2** through angles of **90** degrees or less and the entire structure is placed atop the two bottles "B" to occupy the position depicted in FIGS. **1** and **3** wherein the apertures in all the auxiliary panels envelope the upper portions of the bottles "B." If the packaged articles are chimed cans, the auxiliary

panels **12** and **13** would preferably lie flat against the sides of the cans and at ninety (90°) to the main panel **2**. With chimed cans the acute angle between main panel **1** and auxiliary panels **4** and **5** normally is smaller than that indicated in FIG. **3**. If bottles are packaged the angle through which each auxiliary panel **12**, **13** is folded ordinarily is less than ninety (90°). As is obvious from the drawings the lower edge of each of the apertures is engaged underneath the cap "C" of the associated bottle "B" thereby affording a double gripping action for securely engaging the bottle.

In order to carry the package as shown in FIGS. **1** and **3**, it is necessary simply to apply lifting force underneath the main panels **1** and **2** whereupon a lifting force is imparted to the bottles "B." Since the auxiliary panels **5** and **13** provide a double action opposed gripping force to the associated bottle such as "**B1**," a balanced lifting force is applied thereto. In like fashion auxiliary panels **4** and **12** provide a double action opposed gripping force to the bottle "**B2**" underneath its cap "C" so as to impart a balanced lifting force to the bottle "**B2**."

While the arrangement shown in FIGS. **1**, **2** and **3** is depicted in conjunction with bottles, it will be understood that the invention is also applicable to chimed cans and the like. In such event the upper chimes of the cans are simply gripped in the manner in which the caps of the bottles are gripped as shown in FIGS. **1** and **3** as is obvious.

The invention is not limited to use in conjunction with a pair of articles but may be used to carry a greater number as is apparent from the modification of the invention as shown in FIGS. **4–7** inclusive. The arrangement of FIG. **4** includes a stabilizing device formed of the blanks depicted in FIGS. **5** and **6** together with a wrapper "W" of shrink film material. Furthermore, as is apparent from FIGS. **5** and **6**, the stabilizing device may be formed of separate blanks rather than from an integral blank as shown in FIG. **2**. In FIG. **5**, main panel **20** is provided with a pair of finger-gripping apertures **21** and **22** and a pair of auxiliary panels **23** and **24** are foldably joined to main panel **20** along fold lines **25** and **26** respectively. A plurality of generally U-shaped slits **27**, **28** and **29** are formed in auxiliary panel **23** and similar slits **30**, **31** and **32** are formed in auxiliary panel **24**. Slits **27–32** define apertures in auxiliary panels **23** and **24** and also form article overlying tabs **27*a*–32*a*** which are disposed within the plane of main panel **20** as is well understood in the art.

The blank of FIG. **6** is disposed in generally coincidental relationship with respect to the blank of FIG. **5** and is thus similar to the blank of FIG. **5**. More specifically the blank of FIG. **6** includes a main panel **33** in which a pair of finger-gripping apertures **34** and **35** are formed. Auxiliary panels **36** and **37** are foldably joined to main panel **33** along fold lines **38** and **39** respectively. U-shaped slits **40**, **41** and **42** are formed in auxiliary panel **36** and similar U-shaped slits **43**, **44** and **45** are formed in auxiliary panel **37**. Slits **40–45** define apertures in auxiliary panels **36** and **37** and also form tabs **46–51** which are disposed in overlying relationship with respect to the caps of the associated bottles disposed within the corresponding apertures formed in the auxiliary panels as is obvious from the drawing.

In order to form the package depicted in FIG. **4**, the blank of FIG. **6** is placed underneath the blank of FIG. **5**. The auxiliary panels **36** and **37** are folded downwardly and inwardly through angles substantially in excess of ninety (90°) and the auxiliary panels **23** and **24** are folded downwardly through angles of 90° or less to occupy the positions depicted in FIGS. **4** and **7** and the stabilizing device is then placed atop the group of articles and appears as shown in FIGS. **4** and **7**. As is obvious from the drawings, the apertures defined, for example, by slits **30**, **31** and **32** partially envelope the upper ends of articles **B5**, **B3** and **B1**. In like fashion the apertures formed in auxiliary panel **37** by the slits **43**, **44** and **45** are disposed on the opposite sides of the bottles "**B5**," "**B3**" and "**B1**" and partially envelope the upper ends thereof. It is apparent particularly from FIG. **7** that the lower edges of the caps such as "**C1**" and "**C2**" are engaged by the lower edges of the apertures formed

by U-shaped slits **32**, **45**, **29** and **42**. Thus a double gripping action is provided according to the invention. The overwrap "W" preferably is of shrink film material and is disposed about the package group in any suitable manner. It will be understood that the manner by which the overwrap "W" is placed about the article group is not significant insofar as this invention is concerned so long as the articles are partially or fully enclosed therein. Furthermore it is apparent that the wrapper "W" could be disposed about the package such as is shown in FIGS. **1** and **3** and that the number of articles disposed within the wrapper "W" is not significant. Furthermore the shrink film "W" could be wrapped about the group of articles in any desired wrapping orientation or, if desired, the shrink film wrapper "W" could be preformed and the articles inserted therein from openings at the ends thereof, at the sides thereof or at the tops thereof and such orientation of the article inserting operation is not significant insofar as the present invention is concerned.

The invention is also applicable to wraparound type carriers such as are formed of paperboard and such as that depicted in FIGS. **8–11** wherein a second modification of the invention is shown. FIG. **9** depicts a main conventional blank which is adapted to be wrapped about a group of articles to form a package such as is shown in FIG. **8**. In FIG. **9** main panel **55** is provided with a pair of finger-gripping apertures **56** and **57** and a pair of auxiliary panels **58** and **59** are foldably joined to the side edges of main panel **55** along fold line **60** and **61** respectively. U-shaped cuts **62**, **63** and **64** are formed in auxiliary panel **58** and similar cuts **65**, **66** and **67** are formed in auxiliary panel **59**. These U-shaped cuts of course form apertures within the auxiliary panels **58** and **59** and also form tabs **68-73** which overlie portions of the caps "C" of the associated bottles "B."

Foldably joined to the lower edges **74** and **75** of the auxiliary panels **58** and **59** respectively are a pair of side walls **76** and **77**. A conventional tear strip **78** is formed in sidewall **77**.

Bottom sloping panel **79** is foldably joined along fold line **80** to side wall **76** and a plurality of apertures **81**, **82** and **83** are formed in sloping panel **79**. A similar sloping panel **84** is foldably joined along fold line **85** to the lower edge of side wall **77** and apertures **86**, **87** and **88** are formed in sloping panel **84**.

The bottom wall of the carrier is a composite panel comprising a pair of lap panels **89** and **90** which are foldably joined respectively along fold lines **91** and **92** to the lower edges of sloping panels **79** and **84** respectively. A pair of wrapper tightening apertures **93** and **94** are formed in lap panel **89** and similar tightening apertures **95** and **96** are formed in lap panel **90**. As is well known in the art, suitable machine elements enter the apertures **93** and **94** and draw lap panel **89** underneath the package and in opposition to tightening elements disposed within tightening apertures **95** and **96**. After the wrapper is tightened it is locked in position about the packaged articles by driving the locking tabs **97–100** into the openings defined by retaining tabs **101–104** respectively. When the package is completed, a keel panel **105** which is foldably joined to lap panel **90** along fold line **106** is disposed between the two rows of bottles as is apparent in FIG. **8**.

The blank as shown in FIG. **9** is of conventional construction but according to the invention, the main panel **55** and the auxiliary panels **58** and **59** cooperate with the blank depicted in FIG. **10** to achieve a secure and versatile packaging operation according to this invention. Toward this end the blank of FIG. **10** is disposed immediately below the main panel **55** and the auxiliary panels **58** and **59**. The blank of FIG. **10** may be affixed in some manner as by adhesive or otherwise to the blank of FIG. **9** but such securement is not necessary according to one feature of the invention. The dual gripping action provided according to the invention serves to hold the articles in place and greatly enhances package security and portability.

The blank of FIG. **10** includes a main panel **107** in which finger gripping apertures **108** and **109** are formed. Auxiliary panels **110** and **111** are foldably joined to main panel **107** along fold lines **112** and **113**. U-shaped cuts **114–116** are formed in auxiliary panel **110** and similar U-shaped cuts **117–119** are formed in auxiliary panel **111**. As is obvious the slits **114–119** define apertures within auxiliary panels **110** and **111** and also form tabs **120–125** which are integral with and lie in the plane of main panel **107** and overlie the caps "C" of the associated bottles "B."

In order to form the package as shown in FIGS. **8** and **11** from the blanks depicted in FIGS. **9** and **10** it is simply necessary to dispose the blank of FIG. **10** underneath the blank of FIG. **9** with the main panel **107** immediately below and in coincidental relationship with respect to the main panel **55**. Thereafter the auxiliary panels **110** and **111** are folded downwardly and inwardly through angles of ninety degrees or less to occupy the positions shown for example in FIG. **11**. Thereafter the package is completed by the downward folding of side walls **76** and **77** which of course is accompanied by downward folding of auxiliary panels **58** and **59** through angles substantially less than 90° to occupy the positions as shown in FIGS. **8** and **11**. The package is completed by securing the lap panels **89** and **90** together by way of a tightening and locking operation as is well known in the art. The articles are held by a double gripping action as is obvious.

The blanks depicted in FIGS. **12** and **13** are similar to the blanks of FIGS. **5** and **6** respectively except that FIGS. **12** and **13** incorporate end panels at each end of the blanks together with associated web structure for holding the end panels in assembled position as shown in FIG. **14**. The same numeral designations are used in FIGS. **12** and **13** as are used in FIGS. **5** and **6** respectively for elements which are common to these two sets of figures.

The blank of FIG. **12** includes end panels **126** and **127** foldably joined along fold lines **128** and **129** respectively to the end edges of main panel **20**.

For the purpose of holding the end panels in place, web structure is provided at each end thereof and forms a connection with the end edge of the end panel and the adjacent end edge of the auxiliary panel. For example in FIG. **12**, web panel **130** is foldably joined to web panel **131** along fold line **132** and to the end edge of end panel **129** along fold line **133**. Web panel **131** is foldably joined to the end edge of auxiliary panel **23** along fold line **134**. Web structures generally designated in FIG. **12** by the numerals **135**, **136** and **137** are identical to the web structure comprising components designated by the numerals **130–134** and a detailed description thereof is not deemed necessary.

The inner blank of FIG. **13** is also provided with a pair of end panels **138** and **139** which are foldably joined to main panel **33** along fold lines **140** and **141** respectively. Web structure is formed in each corner of the blank shown in FIG. **13** and such structure is designated generally by the numerals **142**, **143**, **144** and **145**. As before structure **142** comprises a pair of web panels **146** and **147** which are foldably interconnected with each other along fold line **148**. Web panel **146** is foldably joined to end panel **138** along fold line **149** while web panel **147** is foldably joined to auxiliary panel **36** along fold line **150**.

The blank of FIG. **12** is placed atop the blank of FIG. **13** and these two face contacting blanks are manipulated as with the arrangements of FIGS. **5** and **6**. They then appear as shown in FIG. **14** after being applied to a group of bottles. As is apparent in FIG. **14**, the auxiliary panels **23** and **24** associated with the top blank occupy the same positions as do the corresponding panels in FIG. **7**. In addition the auxiliary panels **36** and **37** are folded inwardly but are not visible in FIG. **14** because they are disposed behind the end panel **126**. Web panel **146** is disposed vertically and web panel **147** is angularly disposed and the web structure associated with both end panels **126** and **138** serve to hold these end panels in the positions depicted in FIG. **14** with the end panel **138** disposed immediately behind and in face contacting relationship with the end panel **126**.

As is well known the end panels enhance the stability of the package and strengthen the package mechanically. Furthermore they afford advertising space which may be beneficially used.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A carrier for a group of at least two articles each having a laterally projecting flange at its upper end and the articles being arranged in side-by-side rectilinear relation with their axes generally parallel to each other, the carrier comprising a stabilizing device having a pair of main panels arranged in face contacting relation and disposed in overlying relation with respect to at least two of the articles, a pair of auxiliary panels foldably joined to each of said main panels along opposite side edges thereof, at least one aperture formed in each of said auxiliary panels and disposed immediately adjacent one of said articles, the auxiliary panels adjoined to one of said main panels being folded out of the plane thereof through angles in excess of 90° into positions underneath such main panel to form an acute angle with respect to such main panel and respectively to envelope at least portions of the upper ends of the articles within said apertures and the auxiliary panels adjoined to the other of said main panels being folded out of the plane thereof through angles of 90° or less and into positions wherein at least portions of the upper ends of the articles are enveloped by said apertures along the opposite sides thereof from said auxiliary panels which are adjoined to said one main panel.

2. A carrier according to claim 1 wherein an overwrap is disposed about said articles and said stabilizing device.

3. A carrier according to claim 1 wherein an edge of each of said apertures underlies the laterally projecting flange of the associated article.

4. A carrier according to claim 1 wherein said main panels are affixed to each other.

5. A carrier according to claim 1 wherein said main panels are foldably joined to each other along adjacent end edges at one end thereof.

6. A carrier according to claim 1 wherein a pair of side walls constitute downward extensions of the auxiliary panels which are adjoined to said other main panel and disposed alongside the articles, and a bottom wall structure foldably adjoined to the bottom edges of said side walls along opposite side edges thereof respectively to form a tubular structure about the articles.

7. A carrier according to claim 1 wherein said one main panel is disposed immediately below said other main panel.

8. A carrier according to claim 1 wherein an end panel is foldably joined to each end edge of each of said main panels and wherein web structure interconnects each end of each end panel and the adjacent end of the associated one of said auxiliary panels.

* * * * *