United States Patent

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[54] **WRAP-AROUND CARRIER, BLANK THEREFOR AND SHOULDER DIVIDER FOR USE THEREWITH**

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[52] **U.S. Cl.** .....**229/40,** 206/65 E

[51] **Int. Cl.** **B65d 5/04**

[58] **Field of Search** .....229/40; 206/65 B

[56] **References Cited**

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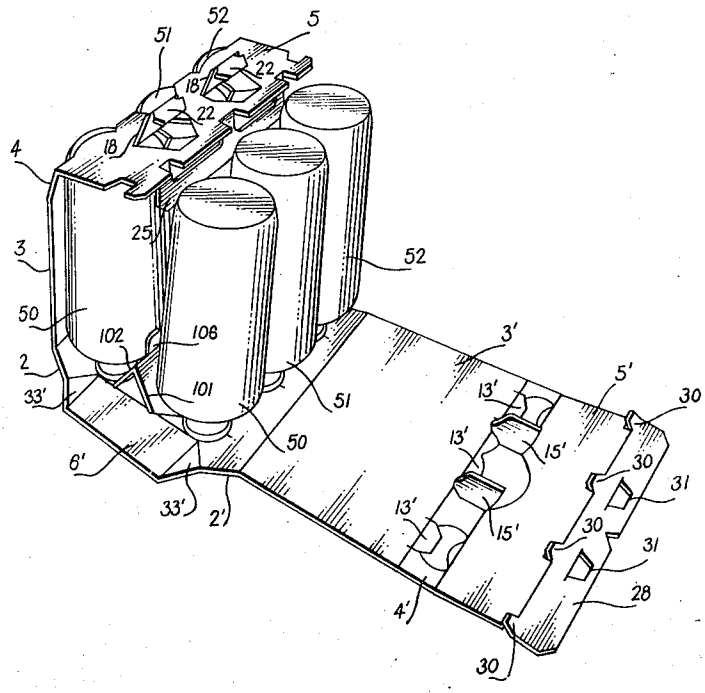
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[57] **ABSTRACT**

A wrap-around carrier and blank therefor wherein longitudinal separation in the heel area is provided with a horizontal separation bar or a plurality of tabs and lateral separation is provided in the heel area with the plurality of tabs cut from and pivotally attached to a sloping heel cutout panel. The carrier may be used with or without a shoulder partition, which partition provides both longitudinal and lateral separation in the shoulder area of the packaged articles. In a preferred embodiment, the shoulder partition comprises a V-shaped support with longitudinal partition tabs extending downwardly from the base thereof and lateral partition straps are rotated out of said support.

9 Claims, 6 Drawing Figures



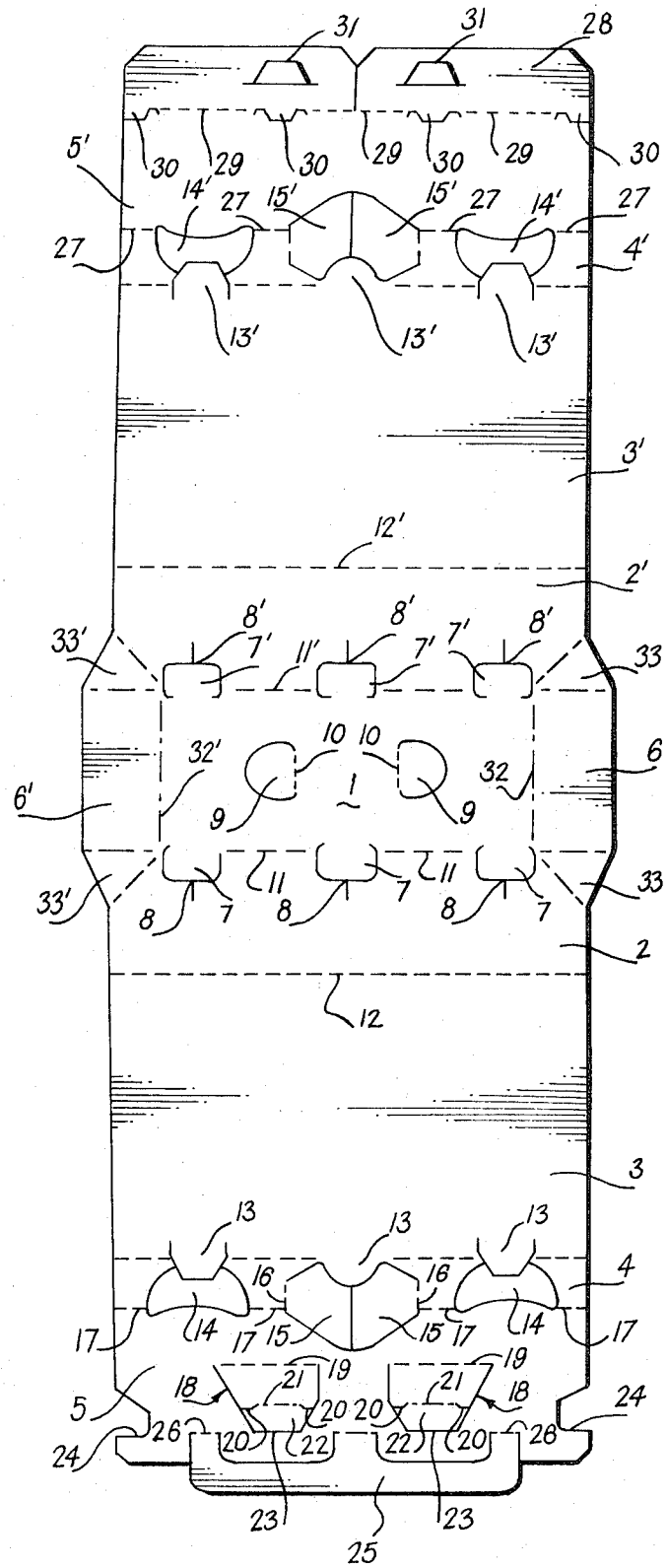


FIG. 1

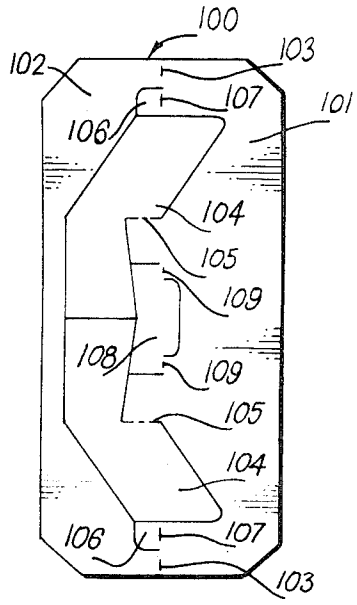


FIG. 2

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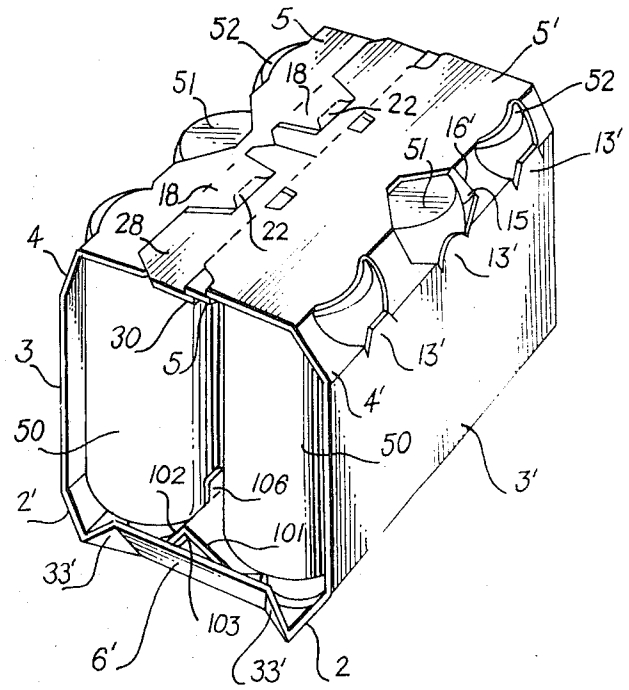


FIG. 3

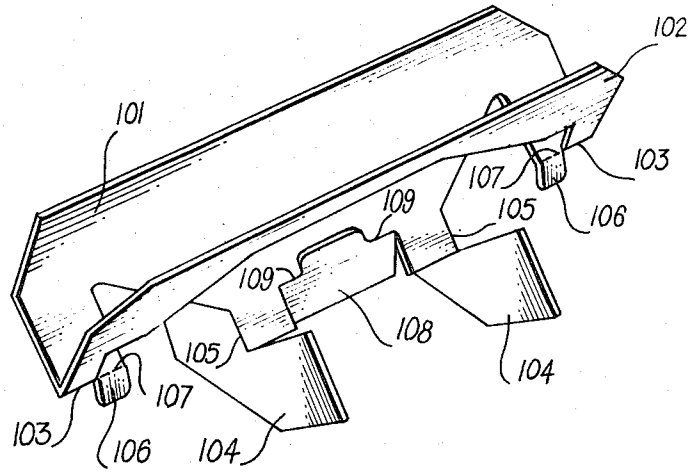


FIG. 4

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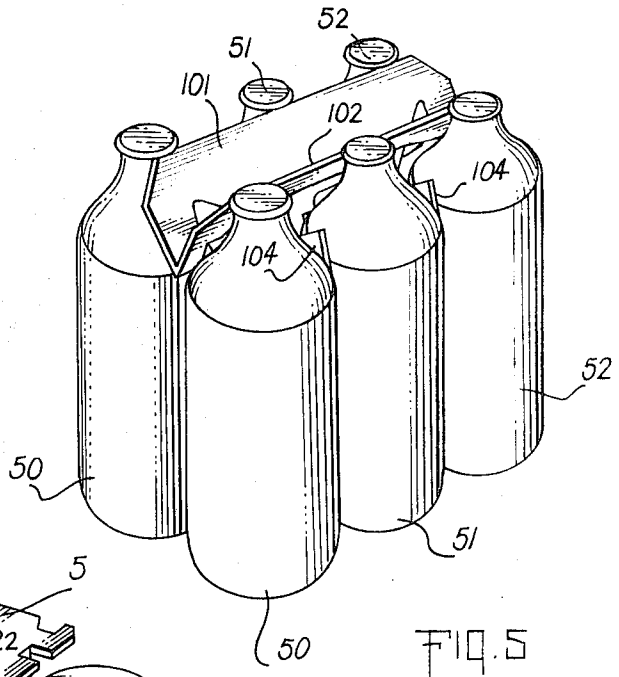


FIG. 5

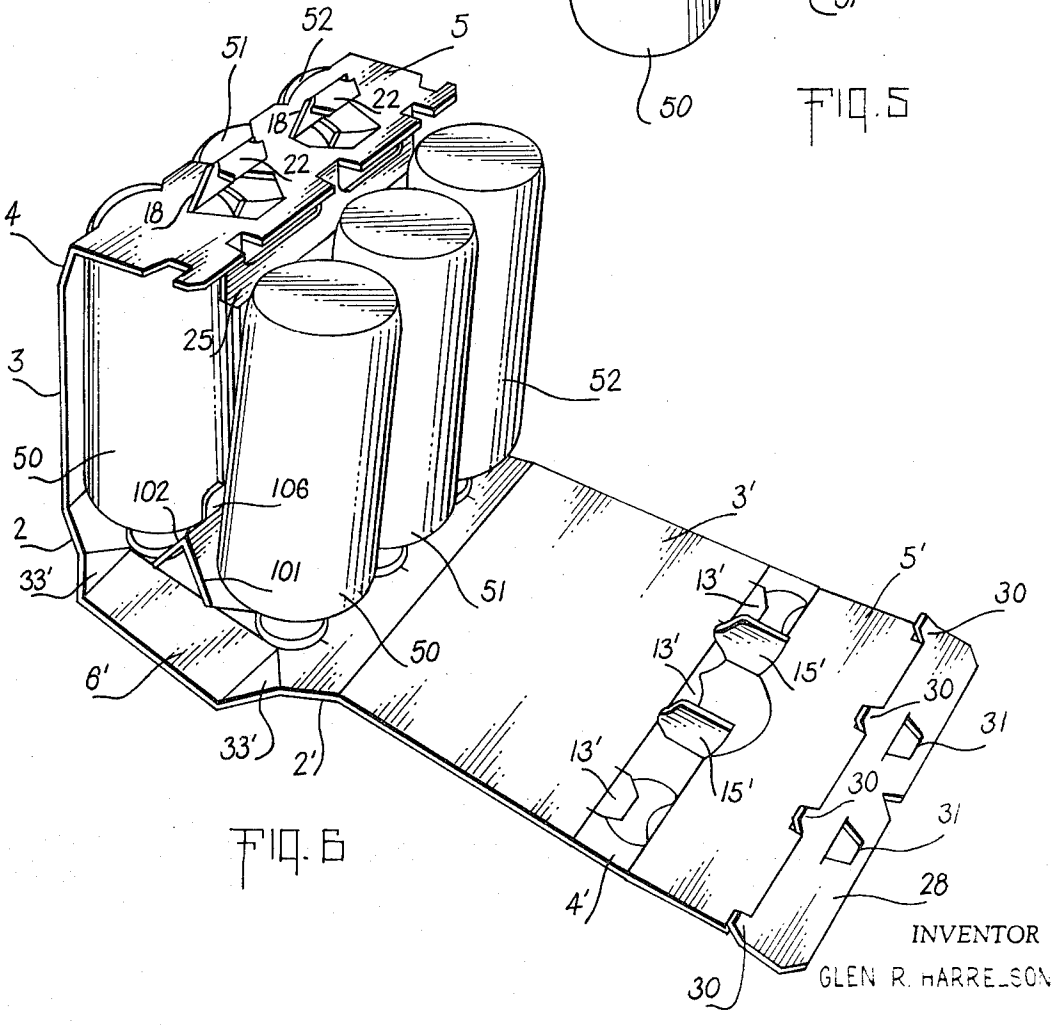


FIG. 6

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WRAP-AROUND CARRIER, BLANK THEREFOR AND SHOULDER DIVIDER FOR USE THEREWITH

BACKGROUND

This invention relates to an improved wrap-around carrier, a blank therefor and a shoulder divider for use in combination therewith. More particularly, this invention relates to an improved wrap-around carrier which is fashioned so as to afford adequate protection to the articles packaged therein at the heels of said articles and to a blank therefor and to a shoulder divider or partition which is used in combination with such a carrier so as to afford adequate separation between the packaged articles over the entire height thereof.

Heretofore, several wrap-around carriers which have been fashioned so as to provide both lateral and longitudinal separation between the packaged articles at or near the bottom thereof have been proposed. Moreover, several partitions have been proposed for use with conventional wrap-around carriers which provide both lateral and longitudinal protection to the packaged articles over the full height of said articles. Those carriers which are fashioned so as to provide at least partial separation without the use of a separate partition do not, however, lend themselves to high-speed packaging operations due principally to the relatively difficult manipulations required to erect such carriers. The use of separate partitions to effect the requisite separation, on the other hand, has met with reasonable success in high-speed packaging operations but has not been completely acceptable due principally to the high cost of such partitions.

BRIEF DESCRIPTION OF THE INVENTION

It is therefore an object of this invention to provide an improved wrap-around carrier and blank therefor which will provide complete internal separation in the base area of the articles packaged in said carrier. It is a further object of this invention to provide such a carrier which will lend itself to high-speed packaging operations. It is a still further object of the present invention to provide a separate, shoulder divider, which divider may be fashioned from a minimum amount of divider material. It is yet another object of this invention to provide such a divider which can be used in high-speed packaging operations and in combination with the carrier of this invention to provide article separation in both the shoulder and heel areas of the articles packaged in said carrier. These and other objects and advantages will be apparent from the description hereinafter set forth and the accompanying drawings.

In accordance with the present invention, the foregoing and other objects are accomplished with a wrap-around carrier and a blank therefor wherein the requisite longitudinal separation at the heel of the articles packaged in said carrier may be provided with a separation panel, a plurality of separation tabs or a similar structure pivotally attached to one of the end margins of said carrier and the lateral separation is provided with panels cut from and rotated out of the side wall panels of said carrier. The carrier may be used either alone or in combination with a shoulder partition, which partition is cut from a single sheet of partition material and fashioned so as to assume a V-shape configuration when set up for insertion into the packaged articles. The longitudinal separation at the

shoulders is provided with a plurality of tabs or similar structure which extend downwardly from the base of the V and the lateral separation is provided with lateral partition panels which are rotated out of the plane of the basic partition.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a blank from which a carrier within the scope of the present invention may e formed;

FIG. 2 is a plan view of a blank from which a partition within the scope of the present invention may be formed;

FIG. 3 is a perspective view of a package comprising a carrier within the scope of the present invention in combination with a partition within the scope of the present invention and both having been formed from the blanks as shown in FIGS. 1 and 2;

FIG. 4 is a perspective view of a partition formed from the blank shown in FIG. 2;

FIG. 5 is a perspective view of a group of articles having a shoulder partition within the scope of the present invention inserted therein; and

FIG. 6 is a perspective view of a partially completed package comprising both the carrier and the partition of the present invention.

PREFERRED EMBODIMENT OF THE INVENTION

The essence of the present invention resides in the means employed in combination with a conventional wrap-around carrier to provide separation of the articles packaged in said carrier around the heel portions of said articles. As will be more apparent from the disclosure set forth hereinafter, the carrier of this invention may be used alone in the formation of a package or it may be combined with the novel shoulder partition of the present invention to thereby provide a carrier in which the articles packaged will be separated at both the base and shoulder thereof. As will be readily apparent, the carrier and partition of the present invention will be most useful for the packaging of bottles and the like, which articles have a narrower dimension at their top than at their bottom. For this reason, the present invention will be described and illustrated by reference to a preferred embodiment thereof wherein a group of six bottles are packaged in the carrier of the present invention.

Referring then to FIG. 1, there is shown a plan view of a blank from which a carrier within the scope of the present invention may be formed. As is well known in the prior art, such blanks may be fashioned from paper, paperboard, fiberboard, polymeric and related materials. As can be seen in FIG. 1, the blank comprises: a top panel 1; sloping side panels 2 and 2'; side panels 3 and 3'; heel cutout panels 4 and 4'; overlapping bottom panels 5 and 5'; and flip down end panels 6 and 6'.

The top panel 1 comprises projection tabs 7—7 and 7'—7', which tabs are cut from sloping side panels 2 and 2', respectively, so as to provide crown locking edges 8—8 and 8'—8'. The top panel also comprises finger cutout panels 9—9, which panels are pivotally attached to said top panel along scored fold lines 10—10. It will, of course, be apparent that the finger cutout panels 9-9 may be rotated downwardly about scored fold lines 10—10 to provide means for lifting the carrier formed from the blank.

Sloping side panels 2 and 2' are pivotally attached to said top panel along scored fold lines 11—11 and 11'—11', respectively. The sloping side panels 2 and 2' are, in turn, pivotally attached to side panels 3 and 3', respectively, along scored fold lines 12 and 12'. Side panels 3 and 3' comprise heel protection tabs 13—13 and 13'—13', respectively, which tabs have been cut from heel cutout panels 4 and 4', respectively.

Heel cutout panels 4 and 4' comprise heel cutout apertures 14—14 and 14'—14'. In addition, heel cutout panels 4 and 4' comprise lateral partition tabs 15—15 and 15'—15', which tabs are cut principally from said heel cutout panels and pivotally attached thereto along scored fold lines 16—16 and 16'—16', which fold lines are, conveniently, located such that partition tabs 15—15 and 15'—15' will pivot about a point generally aligned between the articles separated by the respective tabs. It should be noted, that in the embodiment illustrated in FIG. 1, the lateral partition tabs 15—15 and 15'—15' have been cut partly from overlapping bottom panels 5 and 5'. Formation in this manner is, of course, preferred since greater tab width may be achieved in this manner. Such formation is not, however, essential to the present invention and adequate separation will, in most cases, be attained when the separating tabs 15—15 and 15'—15' are cut solely from the heel cutout panels 4 and 4'. Moreover, it is not essential that all lateral partition tabs be cut from the same heel cutout or that the fold lines, along which said tabs are pivoted, be aligned such that the rotation of said tabs occurs between adjacent articles. Formation in this manner is, however, advantageous since the number of "oversized" heel cutouts is minimized and positioning of the tabs will be facilitated. As will be apparent, when light articles are packaged in a two-by-four arrangement, it will not be possible to cut all tabs from the same heel cutout. It should also be noted, at this point, that when the separation panels 15—15 and 15'—15' are rotated inwardly when a carrier is erected from the blank heel cutout apertures for the central articles will be provided thereby.

Bottom panel 5, which panel is pivotally attached to heel cutout panel 4 along scored fold lines 17—17 comprises secondary locking tabs 18—18 which tabs are cut from said bottom panel and pivotally connected thereto along scored fold lines 19—19. The leading edge of locking tabs 18—18 is cut from the remaining portion of said tab along cut lines 20—20 and pivoted to said remaining portion along scored fold lines 21—21 so as to provide secondary locking elements 22—22. The bottom panel 5 also comprises locking bars 23—23, which bars are provided by rotating secondary locking tabs 18—18 outwardly about scored fold lines 19—19 and locking bars 24—24, which bars are provided by cutting a portion of the panel margin. This type of carton lock is, of course, not novel, and hence, forms no part of this invention. In fact, such a lock is more fully described in U. S. Pat. No. 3,098,583 which issued July 23, 1963. The bottom panel 5 also carries longitudinal separation partition 25, which partition is pivotally attached to said bottom panel along scored fold lines 26—26.

Bottom panel 5' is pivotally attached to heel cutout panel 4' along scored fold lines 27—27 and comprises locking panel 28, which panel is pivotally attached to said bottom panel along scored fold lines 29—29. Locking panel 28 carries primary locking tabs 30—30, which tabs are cut from bottom panel 5' and also comprises secondary locking bars 31—31. The manner in which primary locking tabs 30—30 and secondary locking bars 31—31 cooperate with primary locking bars 23—23 and 24—24 and secondary locking tabs 18—18 to secure the carrier formed from said blank in an erected condition is fully described in the aforementioned U. S. Patent; i.e., No. 3,098,583.

Flip down end panels 6 and 6' are pivotally attached to top panel 1 along scored fold lines 32 and 32' and to sloping side panels 2 and 2' through V-shaped folding panels 33—33 and 33'—33'.

As has already been noted, the essence of the present invention resides in the provision of lateral and longitudinal separation between carried articles in the bottom portion of a carrier through the use of means such as longitudinal separation bar 25 in combination with lateral partition tabs 15—15 and 15'—15'. It will, of course, be appreciated that bar 25 could be a plurality of tabs positioned so as to separate the articles. It will also be appreciated that these features could be used in combination with any wrap-around carrier for any number of articles and are described and illustrated herein with respect to a specific carrier in an effort only to clearly show how such features may be combined with such a carrier. As will become more apparent from the disclosure set forth hereinafter, maximum protection to packaged articles is afforded when the carrier of the present invention is used in combination with a shoulder partition such as illustrated in FIG. 2 to thereby afford complete article separation in both the heel and shoulder areas of the packaged articles.

Referring then to FIG. 2, there is shown a plan view of a partition blank from which a partition within the scope of the present invention may be formed. As can be seen in FIG. 2, the blank comprises a support panel 100 which is divided into substantially equal supporting segments 101 and 102 by scored fold lines 103—103. The blank also comprises lateral partitions 104—104, which partitions are cut from support panel 100 and pivotally attached thereto along scored fold lines 105—105. It will, of course, be appreciated that support segments 101 and 102 are separated from each other by cut lines defining lateral partitions 104—104 and that said lateral partitions are effectively pivotally connected to segment 101. The shoulder partition blank also comprises longitudinal partition tabs 106—106 which are cut from support segment 102 and which are pivotally connected to support segment 101 along scored fold lines 107—107 and longitudinal partition tab 108 which is cut from support segment 101 and pivotally attached thereto along scored fold lines 109—109.

A representative package formed from the blank shown in FIG. 1 in combination with the partition shown in FIG. 2 is shown in perspective in FIG. 3 wherein said carrier has been used to package six bottles. The package is shown inverted to more clearly show the novel features of the present invention. As can be seen then in FIG. 3, support segments 101 and 102 have been rotated about scored fold lines 103—103 to form a V-shaped support, which support rests on

the packaged articles. As can also be seen, longitudinal partition tab **106** is rotated about scored fold line **107** and extends between the shoulder portion of the forward articles **50—50**. Similarly, though not shown in FIG. **3**, longitudinal partition tab **106** extends between the shoulders of articles **52—52** on the opposite end of the package and longitudinal partition tab **108** rotates about scored fold lines **109—109** and extends between the shoulders of the central articles **51—51**. As can also be seen in FIG. **3**, lateral partition tab **15'** is rotated inwardly about scored fold line **16'** to separate the heel portion of adjacent articles **51** and **52**. Similarly, though not shown in FIG. **3**, lateral partition tab **15'** extends between bottles **50** and **51** on the one side and lateral partition tabs **15—15** extend inwardly on the opposite side to separate adjacent bottles **50** and **51** and **51** and **52**.

The package shown in FIG. **3** may be formed by first forming the shoulder partition as shown in FIG. **4** from the blank shown in FIG. **2**. As can be seen in FIG. **4** from the blank shown in FIG. **2**. As can be seen in FIG. **4**, support segments **101** and **102** are rotated about scored fold lines **103—103** to form a substantially V-shaped support for said partition. Lateral partition straps **104—104** may then be rotated about scored fold lines **105—105** such that said partitions extend laterally with respect to the support members **101** and **102**. At the same time or successively, longitudinal partition tabs **106—106** and **108** may be rotated about scored fold lines **107—107** and **109—109**, respectively, such that said longitudinal partition tabs extend downwardly from the V-shaped support formed by support elements **101** and **102**. With the shoulder partition shaped in the manner shown in FIG. **4**, it may then be inserted into a group of articles as shown in FIG. **5**. As can be seen in FIG. **5**, lateral partitions **104—104** extend between successive articles **50—51** and **51—52** on the one side and similarly extend between articles **50—51** and **51—52** on the opposite side, though not clearly shown. As can also be seen in FIG. **5**, the free edges of V-shaped support members **101** and **102** lock beneath the crowns of the packaged articles to thereby secure the divider in place. It will, of course, be appreciated that longitudinal partition tabs **106—106** and **108** extend downwardly between the shoulders of each article pair.

With the shoulder partition positioned as shown in FIG. **5**, the carrier may then be formed from a blank such as illustrated in FIG. **1** by first rotating the lateral partition bar **25** about scored fold lines **26—26** and securing same between the heels of the articles to be packaged as illustrated in FIG. **6**. With the longitudinal partition bar thus secured, formation of the carrier can then be completed by progressively wrapping the various elements of the carrier about the articles to be packaged therein and then locking the overlapping bottom panels in a manner well known in the prior art. The final package will, of course, appear as that illustrated in FIG. **3**.

Although the present invention has been described and illustrated by reference to a particularly preferred embodiment thereof, it will be readily apparent that the present invention lends itself to additional variations and modifications which will be obvious to those skilled in the art. Accordingly, reference should be made solely to the appended claims to determine the scope of the present invention.

Having thus described and illustrated the invention, what is claimed is:

1. A rail compliance wrap-around carrier blank comprising: a top panel; a first side panel pivotally attached to each of the lateral edges of said top panel and fashioned such that said first side panel will slope downwardly when the blank is converted into a carrier; a second side panel pivotally attached to each of said side panels and fashioned such that said second side panel will extend vertically downwardly when the blank is converted into a carrier; a heel cut-out panel pivotally attached to each of said second side panels, each of said heel cut-out panels comprising at least one lateral partition tab capable of separating at least one pair of adjacent articles when the blank is converted to a carrier for such articles; overlapping bottom panels; and means for providing longitudinal separation pivotally attached to one of said overlapping bottom panels, said lateral partition tab and said longitudinal separation means being positioned between adjacent articles and physically separating the articles so that the wrap-around carrier is in compliance with railroad specifications for similar article carriers.

2. The wrap-around carrier blank of claim **1** wherein said means for providing longitudinal separation is a separation bar.

3. The wrap-around carrier blank of claim **1** wherein said means for providing longitudinal separation is a plurality of tabs.

4. A partition blank comprising: substantially equal V-shaped supporting segments, each segment being pivotally attached to each other; at least one lateral partition cut from one of said segments; and means for providing longitudinal separation, said means being pivotally connected to one of said segments.

5. The partition blank of claim **4** wherein a plurality of lateral partitions are cut from one of said segments.

6. The partition blank of claim **4** wherein said means for providing longitudinal separation is a plurality of separating tabs.

7. In a rail compliance wrap-around bottle package of the type having a top panel; a pair of side panels pivotally attached to the top panel, and a pair of heel cut-out panels pivotally attached to each of said pair of side panels and a pair of bottom panels pivotally attached to the heel cut-out panels and fixedly attached to each other when the respective panels are wrapped around a plurality of bottles contained within the package, the improvement comprising:

a. the heel cut-out panels having formed thereon at least one lateral separating partition tab capable of separating at least one pair of adjacent bottles; and

b. means, formed on one of said overlapping bottom panels, for providing longitudinal separation to adjacent rows of bottles contained within the package, said partition tab and said longitudinal separating means serving to physically separate the bottom portions of adjacent bottles thereby conforming the package to rail compliance standards.

8. The package as defined in claim **7** further comprising:

c. a generally V-shaped support panel being positioned within the package between the top panel and the upper portion of the bottles contained within the package, said support panel having formed thereon a plurality of longitudinal and

lateral support tabs for insertion between adjacent bottles in the package.

9. The package as defined in claim 8 further comprising said V-shaped support panel being positioned with its apex extending downwardly and the upper portions of the V extending upwardly and outwardly to contact the underside of the caps contained on the bottles in the package.

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