United States Patent [19]

Wood

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[54] **ARTICLE CARRIER**

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[52] **U.S. Cl.** .....**206/65 E,** 229/42

[51] **Int. Cl.**.....**B65d 77/26,** B65d 5/48

[58] **Field of Search** .....206/65 E; 229/42, DIG. 9; D9/136; 217/32

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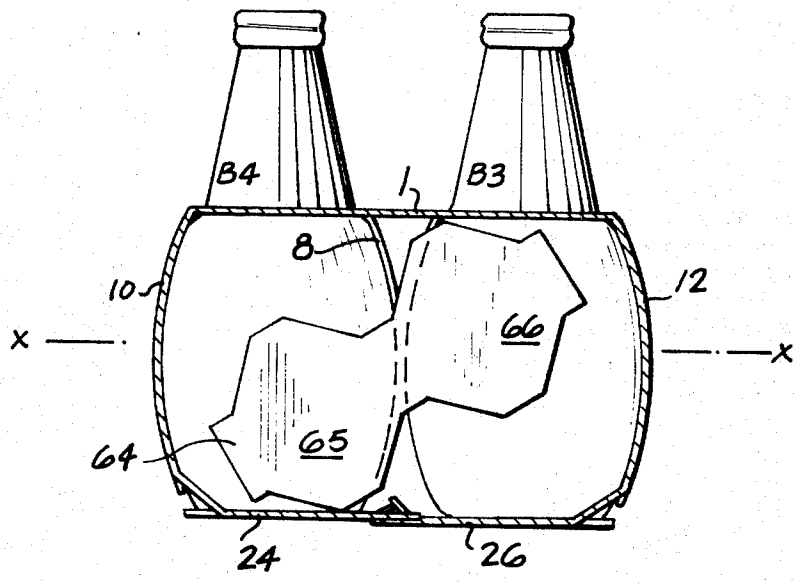
Attorney—Walter M. Rodgers

[57] **ABSTRACT**

An article carrier for primary packages having outwardly bowed sides of barrel-like configuration includes spaced top, bottom and side walls interconnected to form a tubular structure adapted for disposition about the primary packages arranged in rows in rectilinear relationship. An insert is provided with a pair of article separating elements interconnected with each other and disposed transversely within the carrier between pairs of adjacent primary packages disposed in different rows. The insert is configured so as to be formable from a minimum of material and is configured so that adequate article separation is afforded between adjacent articles in the same row of articles irrespective of the angular disposition of the insert with respect to a transverse axis of the carrier.

4 Claims, 7 Drawing Figures



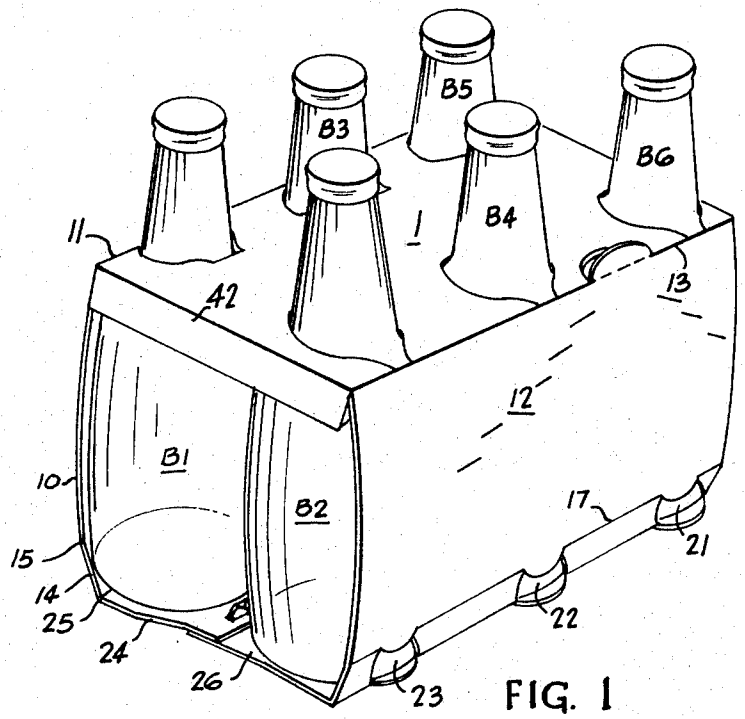


FIG. 1

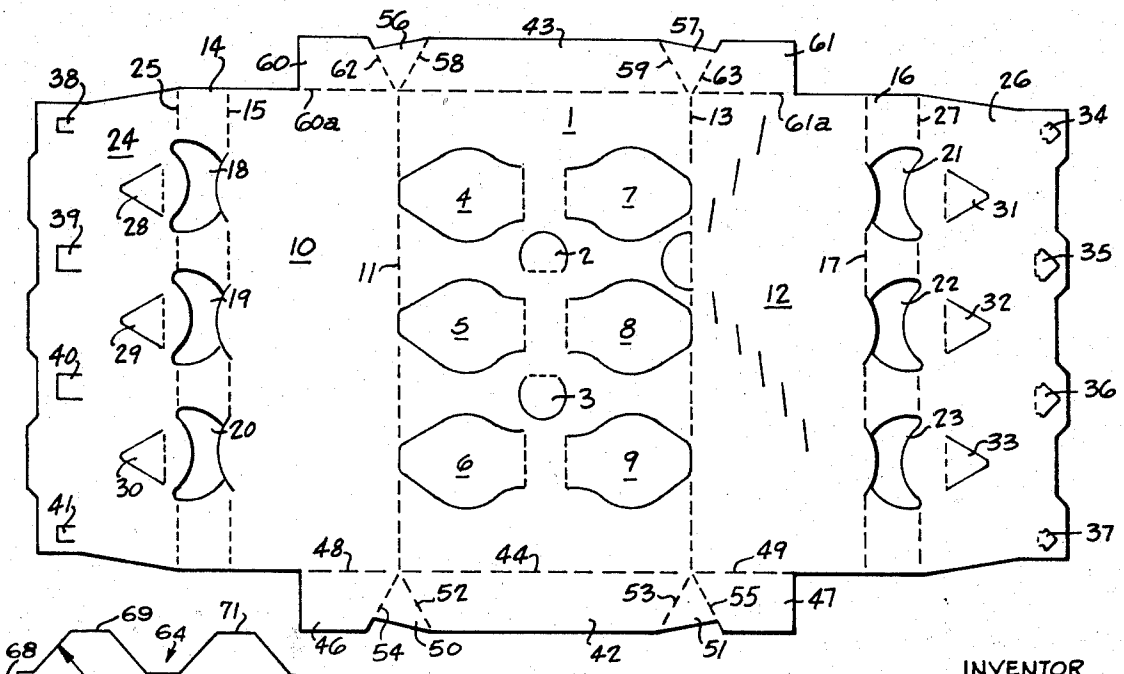


FIG. 2

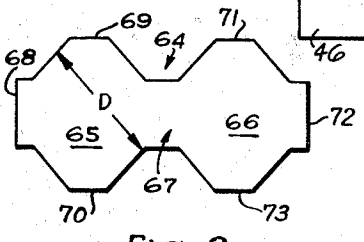


FIG. 3

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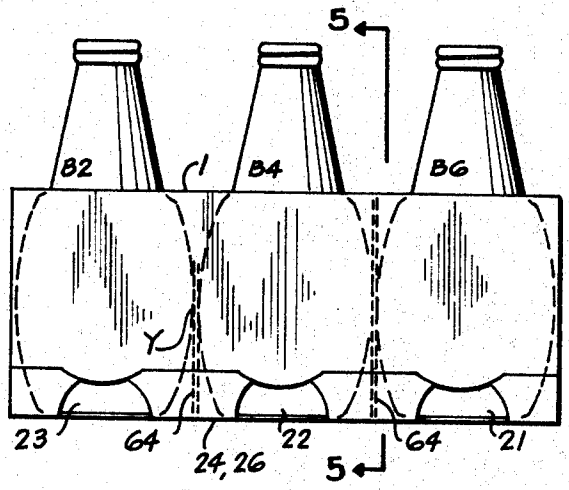

FIG. 4

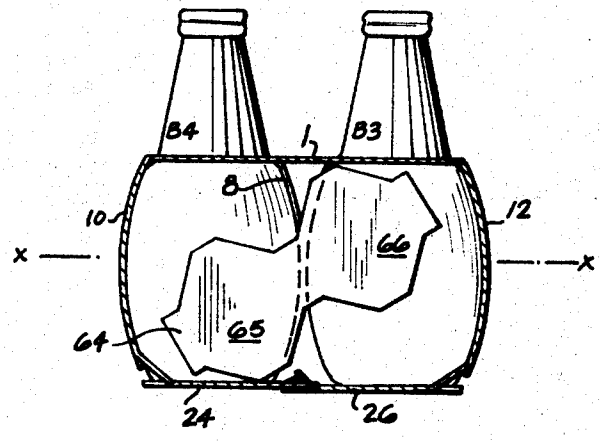

FIG. 5

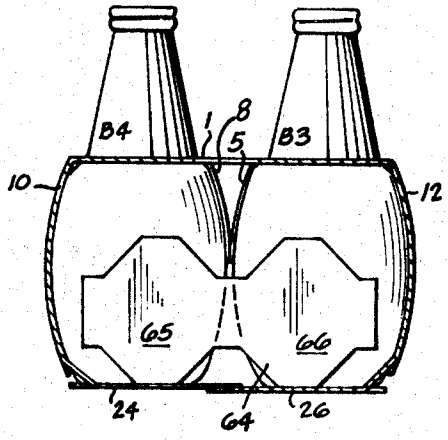

FIG. 6

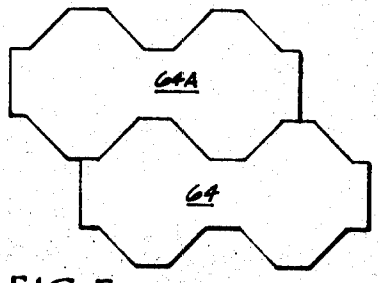

FIG. 7

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ARTICLE CARRIER

Known article carriers of the open-ended tubular type are provided with article separating inserts which extend from the bottom wall to the top wall and which extend the full distance between the side walls. While such inserts provide adequate article separation, they are particularly wasteful in the use of material.

Where primary packages are of the barrel type wherein the side walls bow outwardly, it is possible to provide adequate separation by simply preventing collision of the articles at their tangent points. In connection with such primary packages, it is not necessary to utilize inserts which extend completely from the bottom to the top wall of the carrier and which extend transversely between the side walls for the full distance by which these walls are spaced apart.

According to this invention an improved economical insert is provided for use in an article carrier for barrel-type primary packages arranged in two rows in rectilinear relationship with respect to each other. An insert constructed according to this invention may be placed in a transverse disposition within the carrier between adjacent pairs of packaged articles disposed in different rows and, when constructed according to the invention, the insert may be shifted about within the package by a substantial angular shift without impairing its efficacy as an article separating device. Furthermore inserts constructed according to the invention may be formed of an absolute minimum of material. In its broadest sense the insert must be formed so that irrespective of its angular disposition about a transverse axis of the package, adequate article separation is always provided at the point of contact between adjacent articles in the same row 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 an article carrier of the type to which the invention is particularly applicable;

FIG. 2 is a plan view of the main blank used to form the package shown in FIG. 1;

FIG. 3 is a plan view of an insert constructed according to this invention and incorporated within the package depicted in FIG. 1;

FIG. 4 is a side view of the package depicted in FIG. 1;

FIG. 5 is a cross-sectional view taken along the line 5—5 as indicated in FIG. 4 and showing the insert disposed in one extreme angular position;

FIG. 6 is a view similar to FIG. 5 but which shows the insert disposed in a horizontal position and in which

FIG. 7 is a plan view of two insert blanks which shows the nesting thereof.

In the drawing the numeral 1 designates the top panel of the carrier while the numerals 2 and 3 designate finger-gripping knockout tabs of conventional construction. The numerals 4, 5, 6, 7, 8 and 9 depict downwardly foldable article separating tabs which provide separation between adjacent articles in different rows and which afford apertures through which the necks of the bottles B protrude.

Side wall 10 is foldably joined to top wall 1 along a foldline 11 while side wall 12 is foldably joined to top wall 1 along foldline 13. Bottom sloping panel 14 is foldably joined to side wall 10 along foldline 15 and bottom sloping panel 16 is foldably joined to side wall 12 along foldline 17.

For receiving the bottom portions of the bottles B, a plurality of apertures are formed in sloping panels 14 and these are designated by the numerals 18, 19 and 20. In like fashion similar apertures 21, 22 and 23 are formed within sloping panel 16. The bottom of the carrier is a composite panel made up of a lap panel 24 which is foldably joined to sloping panel 14 along foldline 25 and a lap panel 26 which is foldably joined to sloping panel 16 along foldline 27.

In order to tighten the blank of FIG. 2 about a group of articles, suitable machine elements not shown are arranged to enter the tightening apertures formed in lap panel 24 and designated by the numerals 28, 29 and 30. These machine elements draw lap panel 24 toward lap panel 26 and in opposition to machine elements disposed within tightening apertures 31, 32 and 33 formed within lap panel 26.

After the blank is tightened about the article group, it is secured by means of locking tabs 34, 35, 36 and 37 which are driven through apertures defined by retaining tabs 38, 39, 40 and 41 to secure the package about an article group as shown for example in FIG. 1.

The arrangement of FIG. 1 utilizes end panels designated in the drawings by the numerals 42 and 43. These panels are foldably joined to the end edges of top panel 1 along foldlines 44 and 45. End panel 42 is held in a vertical position by means of a pair of anchoring panels 46 and 47 which are foldably joined to the end edges B2 side walls 10 and 12 along foldlines 48 and 49 in cooperation with web panels 50 and 51 which are foldably joined to end panel 42 along foldlines 52 and 53 respectively and to anchoring panels 46 and 47 respectively along foldlines 54 and 55.

In like fashion end panel 43 is adjoined to web panels 56 and 57 along foldlines 58 and 59 respectively. Anchoring panels 60 and 61 are interconnected with web panels 56 and 57 by foldlines 62 and 63 respectively. Anchoring panels 60 and 61 are foldably joined to side walls 10 and 12 respectively along foldlines 60a and 61a. When the carrier is assembled about the article group as shown in FIG. 1, the anchoring panels 46, 47, 60 and 61 are folded into flat face contacting relationship with their associated side walls 10 and 12. By virtue of the web panels 50, 51, 56 and 57 the end panels 42 and 43 are held in a vertical position as is well known.

For the purpose of separating pairs of articles such as B1 and B2 from adjacent articles such as B3 and B4 disposed in different rows, the insert shown in FIG. 3 is provided according to this invention. This insert is generally designated by the numeral 64 and comprises a pair of article separating elements designated generally by the numerals 65 and 66 which are interconnected as indicated generally at 67 at adjacent corners thereof. These article separating elements are generally square and the maximum transverse dimension thereof as represented by the letter D is at least as great as the distance from the point of tangency as designated by the letter Y in FIG. 4 to either the top wall 1 or the bottom wall 24, 26 so that article separation is always afforded by the insert.

From FIGS. 4, 5 and 6, it is apparent that the insert such as 64 is disposed in a transverse relationship with respect to the carrier. Furthermore from FIG. 5 it is apparent that the insert 64 may be shifted about in a counter-clockwise direction about its center point to occupy the position depicted in FIG. 5 and when so shifted, the insert affords adequate bottle separation. This fact is because the transverse dimension D of each article separating element is sufficiently great to extend from the top or bottom of the carrier to the point of tangency designated by the numeral Y in FIG. 4.

In FIG. 6 the insert 64 is shown in a horizontal position in which adequate article separation is provided due to the fact that the insert extends above the point of tangency between adjacent articles in different rows such as between articles B1 and B3 and bottles B2 and B4.

While not shown in the drawings, it is obvious that the insert 64 may be rotated in a clockwise direction about its center point to occupy a position opposite that depicted in FIG. 5 and when so shifted adequate bottle separation is provided according to the invention.

From FIGS. 3, 5 and 6 it is apparent that the insert 64 is formed of a pair of article separating elements 65 and 66 interconnected at adjacent corners in the region designated generally by the numeral 67.

It is also apparent that the corners of the article separation elements 65 and 66 are cut away as designated for example by the numerals 68, 69 and 70 to form a septenary configuration for article separating element 65. In like fashion corners 71, 72 and 73 of article separating element 66 are cut away to form a similar configuration for element 66. Thus it is apparent that the cutaway corners such as 68–73 inclusive facilitate the seating of the separation elements 65 and 66 at the various positions such as are shown in FIGS. 5 and 6 when dropped at random between adjacent articles.

While the particular nesting of the insert 64 with respect to a corresponding insert 64A is depicted in FIG. 7, this particular nesting relationship is not deemed to be broadly novel per se but is deemed to constitute a novel facet of the invention whereby a most economical configuration is provided for the insert 64 which virtually eliminates all waste. In FIG. 7 one insert is designated by the numeral 64 and an adjacent nesting insert is shown in solid lines and is designated by the numeral 64A.

From the above description it is apparent that according to the invention, an improved insert such as is designated in the drawings by the numeral 64 is provided which may be constructed from a minimum of material and which affords adequate bottle separation between pairs of bottles in different rows in a carrier for two rows of articles which are of barrel-shaped configuration.

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

1. A carrier for round articles arranged in two rows and each having an outwardly bowed arcuate barrel-like profile, said carrier comprising spaced top, bottom and side walls foldably adjoined to form a tubular structure, and an article separating insert transversely disposed within said tubular structure and interposed between adjacent pairs of articles in different rows of articles, said insert being sufficiently small in its transverse and vertical dimensions as to accommodate vertical movement of each end thereof relative to the other end and having two article separating elements interconnected with each other and each being constructed so that any transverse dimension thereof is at least slightly greater than the distance from the top or bottom wall of said tubular structure vertically to the nearest point of contact between the bowed side of adjacent articles whichever is greater and said insert being configured for side by side nesting with another similar insert whereby article separation is provided irrespective of the angular disposition of said insert relative to the transverse axis of the carrier and said insert being formed of a minimum quantity of material.

2. A carrier according to claim 1 wherein said article separating elements are of a generally square configuration with truncated corners and wherein the elements of each pair of associated article separating elements are interconnected at common corners with their imaginary diagonals alined with each other.

3. A carrier according to claim 2 wherein opposite side edges of each of said article separating elements are substantially horizontal when said insert is angularly disposed and with opposite edges thereof in close proximity to said top and bottom walls of said tubular structure.

4. A carrier for round articles arranged in two rows and each having an outwardly bowed arcuate barrel-like profile, said carrier comprising spaced top, bottom and side walls foldably adjoined to form a tubular structure, and an article separating insert transversely disposed within said tubular structure and interposed between adjacent pairs of articles in different rows of articles, said insert being sufficiently small in its transverse and vertical dimensions as to accommodate vertical movement of each end thereof relative to the other end and having two article separating elements interconnected with each other and each being constructed so that any transverse dimension thereof is at least slightly greater than the distance from the top or bottom wall of said tubular structure vertically to the nearest point of contact between the bowed side of adjacent articles whichever is greater and said insert being configured for side by side nesting with another similar insert whereby article separation is provided irrespective of the angular disposition of said insert relative to the transverse axis of the carrier and said insert being formed of a minimum quantity of material, said article separating elements being of a generally square configuration and the elements of each pair of associated article separating elements being interconnected at common corners with their imaginary diagonals alined with each other, and opposite side edges of each of said article separating elements being substantially horizontal when the insert is angularly disposed and with opposite edges thereof in close proximity to said top and bottom walls of said tubular structure.

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