United States Patent

Wood

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[54] BOTTLE CARRIER

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[73] Assignee: **The Mead Corporation**

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[52] **U.S. Cl.** .....**229/40,** 220/117, 206/65 E

[51] **Int. Cl.** **B65d 5/02,** B65d 71/00

[58] **Field of Search** .....229/40, 28 BC, 112; 220/114, 220/115; 206/65 E

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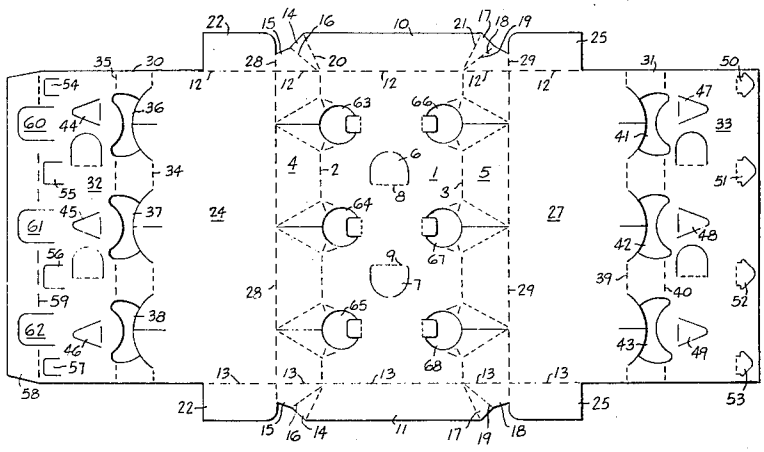
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[57] **ABSTRACT**

A blank for forming a wraparound-type bottle carrier is provided with apertures for receiving the necks of packaged bottles, the apertures being disposed so as to hold the bottles in spaced-apart relationship and the apertures being constructed so as to facilitate entry of the bottle necks therein so as to grip the bottle necks after insertion into the apertures. In order to insert the bottle necks and subsequently to form the package, the bottles are arranged in two rows to form a group and the blank is placed thereabove with its ends in transverse disposition with respect to the rows of bottles. The ends are then bowed upwardly to facilitate inserting the bottle necks into the apertures. Thereafter the bottle carrier blank ends are folded downwardly and secured together underneath the bottles, the downward folding of the ends of the blank being effective to force web structures defining a part of the edge of each aperture into snug gripping relationship with the associated bottle neck.

9 Claims, 5 Drawing Figures



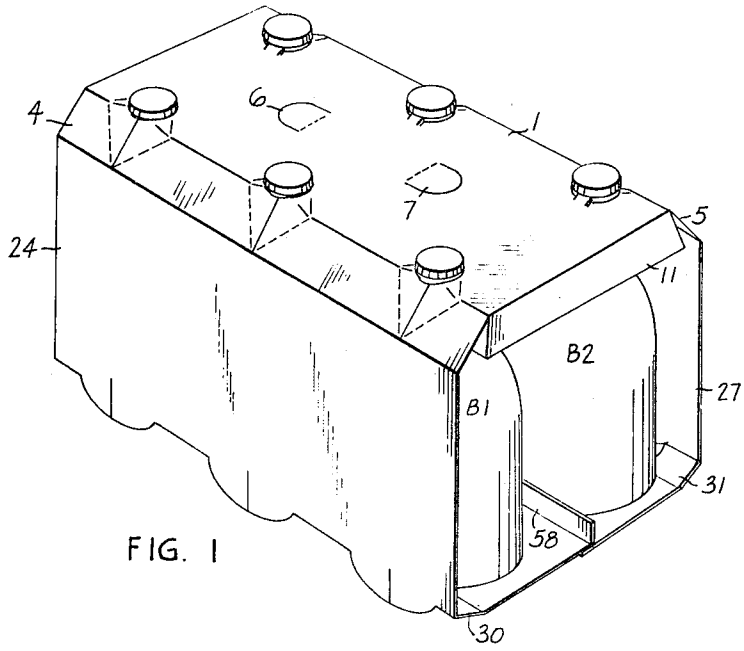


FIG. 1

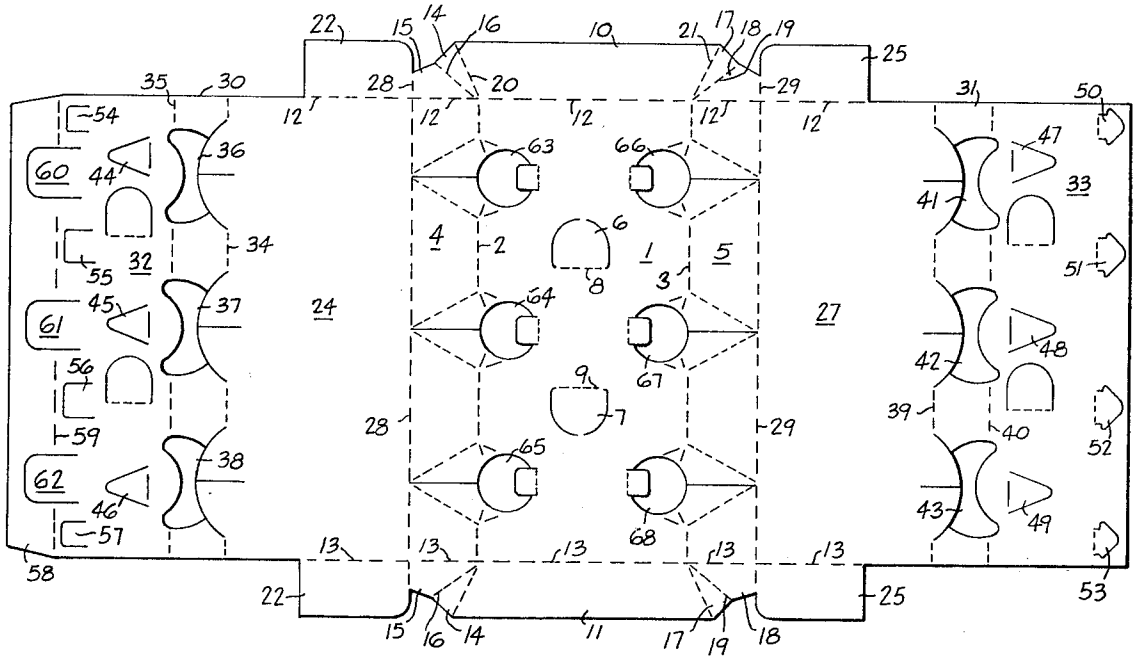


FIG. 2

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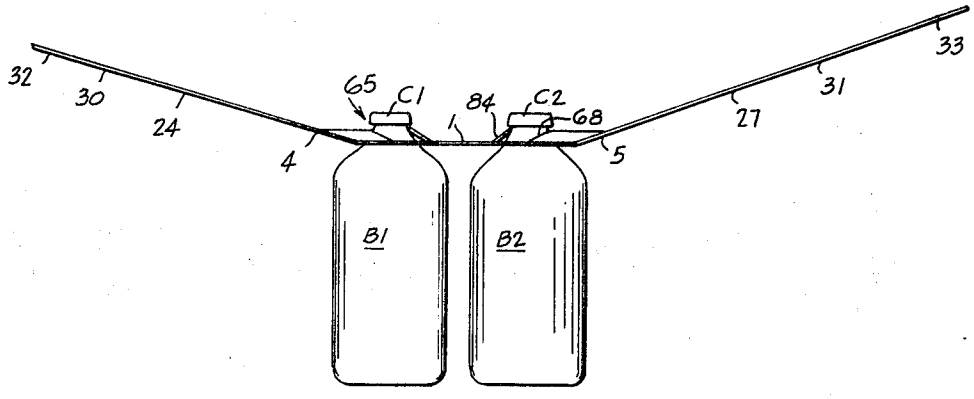


FIG. 3

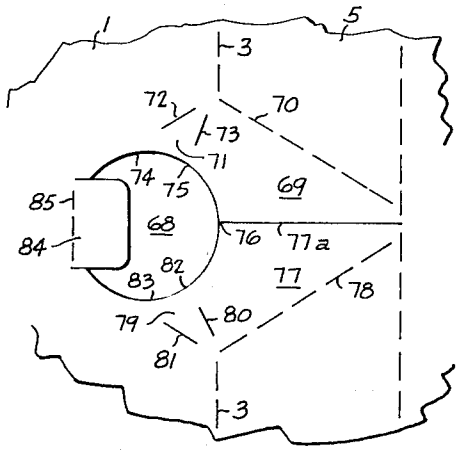


FIG. 4

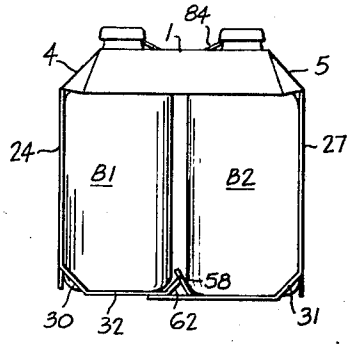


FIG. 5

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BOTTLE CARRIER

In order to protect packaged bottles from undesired collision with each other and possible breakage, it has been the practice to place cushioning panels between the bottles. Such panels may be integrally formed with the main blank or may constitute separate elements inserted into the package during the formation thereof.

According to this invention, bottles packaged in a group are prevented from colliding with each other by holding the bottles in spaced relationship to each other. The holding action is facilitated by forming apertures in the blank disposed about the bottle group and locating the apertures so as to receive the bottle necks and hold the bottles in slightly spaced-apart relationship. Entry of the bottle necks into the apertures is facilitated by forming web structures in the wrapper in such manner that an edge of each web structure defines a part of an aperture for receiving a bottle neck. When the blank is disposed above a bottle group and bowed upwardly, the web structures thereof are relaxed accommodating easy entry of the bottle necks. Thereafter downward folding of the ends of the blank causes the web structures to grip the bottle necks securely and thereby to insure a stable and secure package wherein substantial movement of the bottles relative to the tubular wrapper and to each other is prevented.

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 bottle carrier formed according to the invention;

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

FIG. 3 is an end view of a package such as is shown in FIG. 1 during an initial stage of a package forming operation;

FIG. 4 is an enlarged fragmentary view of one bottle neck receiving aperture and its associated web structures and biasing tab constructed according to the invention and in which:

FIG. 5 is an end view of the package shown in FIG. 1.

The top wall of the carrier comprises a main central panel 1 to the side edges 2 and 3 of which a pair of sloping panels 4 and 5 are foldably joined respectively. Finger gripping tabs 6 and 7 are struck from the main central panel 1 and are foldably joined thereto along fold lines 8 and 9 respectively.

At the ends of main central panel 1 a pair of end panels 10 and 11 are foldably joined along fold lines 12 and 13 respectively. A pair of holding web panels 14 and 15 are foldably joined to each other along fold line 16 and panel 14 is foldably joined to end panel 10 along fold line 20 while at the other end of the panel 10 a pair of holding web panels 17 and 18 are foldably joined to each other along fold line 19 and to end panel 10 along fold line 21. Web panels 15 and 18 and adjoined by fold line 12 to sloping panels 4 and 5 respectively. Anchoring tab 22 is foldably joined along fold line 12 to sidewall 24 while anchoring tab 25 is foldably joined along fold line 12 to sidewall 27. The end panel 10 and associated structure preferably is constructed as disclosed in detail and claimed in U.S. Pat. No. 3,128,010 issued Apr. 7, 1964 and assigned to the assignee of this invention. End panels 10 and 11 simply provide an advertising panel at each end of the carrier and in addition aid in stabilizing the structure and in securing the articles therein. Since end panels 10 and 11 are identical in construction and since the web structure and anchoring panels associated with each end panel are identical, these elements are identified in the drawings by the same reference numerals. When the carton is assembled as shown in FIG. 1 the end panel such as 11 is disposed substantially vertically and anchoring panel 22 is folded into flat face contacting relationship with the inside surface of sidewall 24 and anchoring panel 25 is similarly disposed with respect to the inside surface of sidewall 27. Web panels 14 and 15, 17 and 18 are partially collapsed and interconnect the ends of the end panels 11 with the anchoring panels 22 and 25 along fold lines 28 and 29 as is obvious.

The term top wall of the carrier as used herein denotes both the main central panel 1 and the top sloping shoulder panels 4 and 5. Sloping panel 4 is foldably joined along fold line 28 to sidewall 24 while sloping panel 5 is foldably joined to sidewall 27 along fold line 29.

As used herein the term bottom wall of the carrier is deemed to comprise bottom corner sloping panels 30 and 31 as well as bottom lap panels 32 and 33. Sloping panel 30 is foldably joined to sidewall 24 along fold line 34 and to lap panel 32 along fold line 35 and a plurality of apertures 36, 37 and 38 are formed in the sloping panel 30 and serve to receive the bottom portions of bottles packaged within the wrapper in known manner.

In like fashion, sloping panel 31 is foldably joined to sidewall 27 along fold line 39 and to lap panel 33 along fold line 40 and a plurality of apertures 41, 42 and 43 are formed in sloping panel 31.

With the blank of FIG. 2 disposed about a group of articles, the blank is tightened before the lap panels 32 and 33 are secured together. Toward this end a plurality of tightening apertures 44, 45 and 46 and formed in lap panel 32 and similar tightening apertures 47, 48 and 49 are formed within lap panel 33. As is well-known machine elements enter these tightening apertures and move in an appropriate manner to draw the blank tightly about the packaged group before the lap panels are secured together.

For the purpose of securing the lap panels 32 and 33 together, a plurality of locking tabs 50–53 inclusive are formed in lap panel 33 and these tabs are driven through apertures defined by retaining tabs 54–57 respectively to secure the wrapper in a manner well known in the art.

In order to provide a center keel between the two rows of bottles, keel panel 58 is foldably joined along fold line 59 to an edge of lap panel 32 and a plurality of bracing tabs, 60, 61 and 62 are struck from the keel panel 58 and partially from lap panel 32. The bracing tabs such for example as 62 engage one side of keel panel 58 and effectively reinforce the keel, which as is apparent from FIG. 5, is disposed at an acute angle with respect to lap panel 32.

For receiving the necks of the packaged bottles and for holding the bottles in spaced relationship to each other, a plurality of apertures 63–68 inclusive are formed within the top wall of the carrier. These apertures are identical in construction and only one such aperture, as for example 68, is here described in detail, such aperture being depicted in enlarged fragmentary form in FIG. 4.

As in apparent from FIG. 4, a first web structure comprises a web panel 69 which is foldably joined to sloping panel 5 along a fold line 70 and a smaller web panel 71 which is foldably joined to main central panel 1 along fold line 72. Web panels 69 and 71 are foldably adjoined to each other along fold line 73. The arcuate edge portion of web panel 71 which extends from the point designated at 74 to the point designated 75 constitutes a part of an edge of the aperture 68. In like fashion, the arcuate portion of web panel 69 extending from the point designated 75 to the point designated 76 constitutes a portion of the edge of aperture 68. A slit line 77*a* separates web panel 69 from web panel 77 which is foldably joined to sloping panel 5 along fold line 78. Web panel 79 is foldably joined to web panel 77 along fold line 80 and to main central panel 1 along fold line 81. Arcuate edge portion of web panel 77 which extends from point 76 to point 82 constitutes a part of the edge of aperture 68 while arcuate portion of the edge of web panel 79 which extends from point 82 to point 83 also constitutes a portion of the edge of aperture 68. A bracing panel 84 is foldably joined along a fold line 85 to main central panel 1. Fold line 85 is generally disposed in a tangential relation to the adjacent portion of aperture 68 which adjacent portion is imaginary as is obvious from FIG. 4.

In order to insert the bottle necks through the apertures formed in the top wall of the carton, the two rows of bottles are moved apart a slight distance as is represented in FIG. 3 and a blank is disposed above the bottle group and with its ends arranged in transverse disposition with respect thereto as shown in FIG. 3. The blank ends are then bowed upwardly as

shown in FIG. 3 which action tends to cause the web structures each comprising the two web panels described above and shown in detail in FIG. 4 to bow upwardly thereby to relax the edge portions of the apertures such as 65 and 68. This tendency to enlarge and relax the apertures accommodates the ready insertion of the bottle necks within the apertures as is depicted in FIG. 3. Following this operation, the sidewalls 24 and 27 are folded downwardly in known manner and the lap panels 32 and 33 are folded underneath the article group and secured together. During the downward folding of the sidewalls, the bottles in one row such as that indicated as B1 are moved toward the bottles in the other row such as that indicated as B2 to occupy positions such as are shown in FIG. 5. This movement toward each other of the bottles in the two rows together with the downward folding of the blank from the position represented in FIG. 3 to that represented by FIG. 5 causes the web panels 69 and 71 forming one web structure and the web panels 77 and 79 forming the other web structure to grip securely the outer surface of the associated bottle neck. During the downward movement of the blank relative to the bottle group to the position represented in FIG. 3 bracing tabs such as 84 ride over the cap of the associated bottle such as C2 and the outer end thereof engages the neck of the bottle underneath the cap. The bracing tabs thus occupy the positions designated at 84 in FIGS. 3 and 5. These bracing tabs tend to hold the main central panel 1 in a horizontal position and aid in the gripping action described above which is performed by the web structures. Of course the folding operations of the blank are accompanied by proper folding of the end panels 10 and 11 and of the associated anchoring panels and web structures as more fully described in the above-mentioned U.S. Pat. No. 3,128,010.

From the above description it is apparent that the finished package appears as shown in FIG. 5 i.e. with the bottles such as B1 spaced slightly away from the bottles such as B2. Of course this position is securely maintained due to the structure of the apertures as is shown in FIG. 4 and to the keel 58 and its associated bracing tabs such as 60, 61, and 62 together with the associated apertures 36–38 and 41–43 inclusive. Furthermore, it is apparent that the secure gripping action and the disposition of the apertures together with the location of the corner apertures 36–38 and 41–43 effectively hold the bottles in one row in separated relationship from adjacent bottles in the same row.

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

I claim:

1. A bottle carrier for packaging two rows of bottles and comprising top, bottom and spaced sidewalls interconnected to form a tubular structure, said top wall including a main central panel and a pair of sloping shoulder panels foldably adjoined to opposite side edges of said main central panel, and a plurality of apertures formed in said top wall for respectively receiving therethrough the necks of packaged bottles, said apertures being configured to coincide generally with the exterior of the necks of the associated bottles and adjacent apertures in different rows being spaced apart sufficiently to prevent contact between the body portions of the associated bottles and an edge portion of each of said apertures being defined by two web structures each of which is formed partially in said adjacent sloping panel and partially in said main central panel, said web structures being separated by a slit in said adjacent sloping panel.

2. A bottle carrier according to claim 1 wherein each of said web structures comprises a pair of web panels adjoined to each other along a fold line.

3. A bottle carrier according to claim 2 wherein the fold line between each pair of web panels is disposed at an acute angle to the fold line between the associated sloping panel and the side edge of said main central panel.

4. A bottle carrier according to claim 2 wherein one web panel of each of said web structures is formed partially in the adjacent sidewall.

5. A bottle carrier according to claim 1 wherein a biasing tab is adjoined to said main central panel along a fold line adjacent the inner edge portion of each of said apertures and arranged to project outwardly toward the center thereof and wherein said apertures are substantially circular.

6. A bottle carrier according to claim 5 wherein the fold line for each of said biasing tabs is substantially tangent to the adjacent edge of the associated aperture.

7. A bottle carrier according to claim 1 wherein said web structures snugly engage the necks of the associated bottles due to the inherent bias imparted thereto by the angular disposition of said sloping panels relative to said main central panel.

8. A bottle carrier according to claim 5 wherein each of said biasing tabs is disposed at an angle to said main central panel and with its outer end in engagement with the neck of the associated bottle and underneath the cap thereof.

9. A bottle carrier blank comprising a top wall having a main central panel and a pair of shoulder panels foldably joined to opposite side edges of said main central panel, a pair of sidewalls foldably joined to said shoulder panels respectively along the edges thereof remote from said main central panel, a pair of corner panels foldably joined respectively to the edges of said sidewalls remote from said shoulder panels, a pair of lap panels foldably joined respectively to the edges of said corner panels remote from said sidewalls, and a plurality of apertures formed in said top wall an edge portion of each of said apertures being defined by two web structures each of which is formed partially in one of said shoulder panels and partially in said main central panel, said web structures being separated by a slit in said shoulder panel.

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