

Feb. 28, 1967

P. J. WOOD

3,306,519

BOTTLE CARRIER

Filed July 25, 1966

2 Sheets-Sheet 1

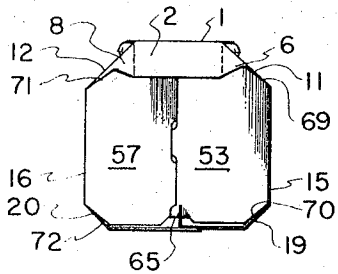


FIG. 2

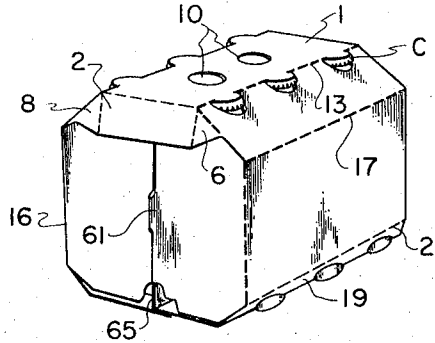


FIG. 1

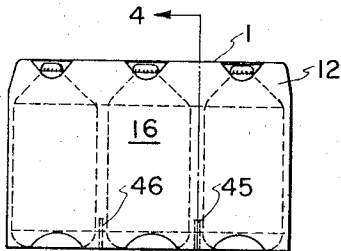


FIG. 3

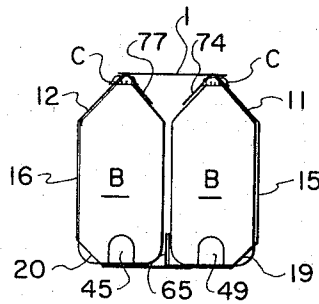


FIG. 4

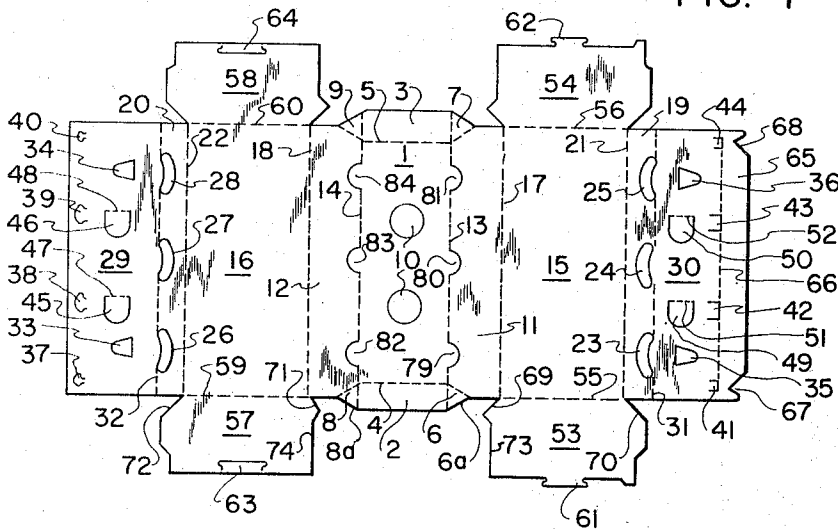


FIG. 5

INVENTOR.  
PRENTICE J. WOOD

BY *Walter M. Rodgers*

ATTORNEY

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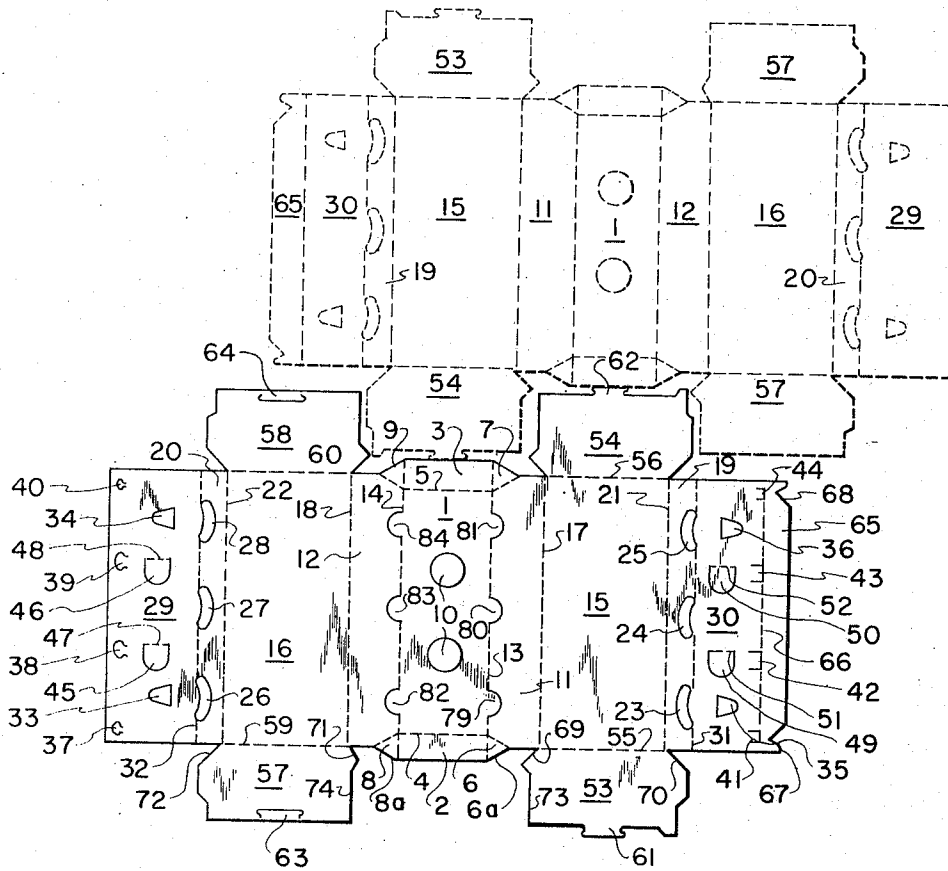


FIG. 6

INVENTOR,  
PRENTICE J. WOOD

BY *Walter M. Rodgers*

ATTORNEY

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3,306,519

**BOTTLE CARRIER**

Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio  
Filed July 25, 1966, Ser. No. 567,532  
6 Claims. (Cl. 229-40)

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This application is a continuation-in-part of U.S. patent application Serial Number 407,728, filed October 30, 1964.

This invention relates to bottle carrier of the wrap-around type having closure means provided at each end of the wrapper and more particularly is directed to an economical and efficient arrangement whereby the ends of a wrapper are closed by a transversely disposed end panel foldably joined to each end edge of the top panel and wherein a closure panel or door is foldably joined to each end edge of each side panel, the end panels and the door panels being inter-related with each other so as to provide a substantially complete closure for each end of the wrapper at minimum usage of material.

Wrapper type packages for use in conjunction with primary packages such as bottles may be provided with my end closure means in accordance with U.S. patent application Serial No. 407,779 filed October 30, 1964, wherein the entire closure structure comprises a pair of door-like end panels foldably joined to each end edge of each side panel. Such an arrangement is economically most feasible if the shape of the primary packages is appropriate for nesting the door panels of one blank with the door panels of an adjacent blank thereby to effect economy in the use of material. If the primary packages such as bottles are tall relative to the diameters thereof, nesting is impossible because the height of the doors is so great relative to the width of the top and bottom panels as to prevent nesting where the two doors at each end constitute the entire closure means for the ends of the carton.

A principal object of this invention is to provide for nesting the end closure door panels of a wrap-around type carrier by effectively shortening the height thereof and by providing supplemental closing means which cooperate with the door-like end panels.

Another object of the invention is to provide complete closure means for the ends of a wrapper type package which is economical because of the efficient use of material and which is applicable to wrappers whose top panels overlie the tops of the packaged bottles or which are used in conjunction with primary packages such as bottles wherein the height thereof is substantial in relation to the diameter thereof.

The invention in one form as applied to a wrapper type carrier having top, bottom and side walls comprises a horizontally disposed end panel foldably joined to each end edge of the top central panel of the carrier top wall and disposed at an angle with respect thereto and forming a closure means for the top portion of each end of the wrapper, and a pair of door-like panels foldably joined to each end edge of each side wall panel and inter-related with each other and with the end panel. According to one facet of the invention, the end panel is of sufficient height so as to fill the space between the top central panel of the carton and the top edges of the door panels and thereby to establish a height for the door panels which enables nesting of the door panels of one blank with the corresponding panels of an adjacent blank and at the same time provide a substantially complete closure means for each end of the carrier. According to one feature of the invention, each end panel is held in its proper position by web structure at the ends thereof, and the upper edges of the adjacent door panels are configured so as to complement the configuration of the lower edge of the

end panel and the bottom edges of the web panels thereby to provide a complete closure for each end of the carrier. A carrier embodying the essential features of this invention is disclosed in U.S. application Serial Number 407,728.

As is disclosed and claimed in U.S. application Serial No. 407,779, end door panels, when interlocked, form a composite structure which is slightly wider than the spacing between the end edges of the side walls of the carrier so that when forced into closed position, the end panel structure comprising the door panels toggles over center and hence is biased into closed position. In addition, a medial keel panel is formed at the bottom of the carrier and is provided with a notch near each end thereof which is engaged by the door panels and which further aids in holding these panels closed, the notch being disposed to maintain the end closure structure in substantially normal position relative to the bottom and top walls of the carrier when the end closure structure is closed.

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 embodying the invention; FIG. 2 is an end view of the carrier depicted in FIG. 1; FIG. 3 is a side view of the carrier depicted in FIGS. 1 and 2; FIG. 4 is a cross-sectional view taken along the line designated 4-4 in FIG. 3; FIG. 5 is a plan view of the blank from which the carrier depicted in FIGS. 1-4 is formed; and in which FIG. 6 is a plan view of two blanks shown in nested relation to each other according to a feature of the invention.

With reference to the drawings, the numeral 1 designates a main central panel to the end edges of which a pair of end panels 2 and 3 are foldably joined along fold lines 4 and 5 respectively. Web panels 6 and 7 are foldably joined to the end edges of the end panels 2 and 3 respectively along lines which constitute extensions of the side edge 13 of the central top panel 1. Likewise, web panels 8 and 9 are foldably joined to the opposite ends of the end panels 2 and 3 respectively along extensions of fold line 14.

When the carton blank of FIG. 5 is manipulated so as to form a completed package as shown for example in FIG. 1, the end panels 2 and 3 are disposed at an angle to the main central panel 1 and are held in that position by the web panels 6-9, inclusive.

For the purpose of rendering the carrier readily portable, a pair of finger gripping apertures 10 are formed in the central top panel 1 in known manner.

Conforming with the shoulders of the packaged bottles, a pair of top sloping panels 11 and 12 are foldably joined along the fold lines 13 and 14 to the side edges of the main central top panel 1. As is obvious from the drawings, the web panels 6-9 inclusive are foldably joined both to the ends of the end panels 2 and 3 and to the ends of the sloping panels 11 and 12. A pair of side wall panels 15 and 16 are foldably joined to the top sloping panels 11 and 12, respectively, along the fold lines 17 and 18. Similarly, bottom sloping panels 19 and 20 are foldably joined to the bottom edges of side wall panels 15 and 16 along the fold lines 21 and 22, respectively. Formed in bottom sloping panel 19 are the bottle receiving openings 23, 24 and 25. As is well known, the bottom portion of the bottles protrude through the openings 23, 24 and 25 which serve to hold the bottles in place within the carrier and thereby aid in preventing bottle damage. In like fashion, the openings 26, 27 and 28 are formed in the bottom sloping panel 20 and correspond to the openings 23, 24, and 25.

For forming the bottom of the carrier, a pair of bottom panels 29 and 30 are foldably joined respectively to

the bottom sloping panels 20 and 19 along the fold lines 32 and 31.

In order to tighten the wrapper about a group of bottles to be packaged, a pair of tightening apertures 33 and 34 are formed within the bottom panel 29 and a pair of similar tightening apertures 35 and 36 are formed within the bottom panel 30. As is understood in the art, suitable machine elements enter the tightening apertures 33 and 34 and move underneath the group of articles toward the bottom panel 30. Similar machine elements enter the tightening apertures 35 and 36 and draw the panel 30 toward the bottom panel 29. After the wrapper is suitably tightened, the locking tabs 37-40 formed in the bottom panel 29 are driven through the locking openings defined by the retaining tabs 41-44 formed in the bottom panel 30. Of course the panels 29 and 30 are arranged in overlapping relationship with the panel 30 disposed on the inside.

For separating the end bottles on one side of the wrapper from the middle bottles, transverse tabs 45 and 46 are struck from bottom panel 29 and are foldably joined thereto along their respective transverse fold lines 47 and 48. In like fashion, transverse tabs 49 and 50 are struck from bottom panel 30 and are foldably joined thereto along fold lines 51 and 52 respectively. Tabs 45 and 46 as well as the tabs 49 and 50 are folded into a position generally normal to the bottom panels 29 and 30 as is shown for example in FIGS. 3 and 4.

For the purpose of forming a closure for the ends of the wrapper, a pair of end closure door panels 53 and 54 are foldably joined along fold lines 55 and 56 respectively to the ends of the side wall panel 15. Similarly, a pair of end closure door panels 57 and 58 are foldably joined along fold lines 59 and 60 respectively to the end edges of side wall panel 16. A hooked interlocking tab 61 is formed on the inner edge of door panel 53 while a similar interlocking tab 62 is formed on the inner edge of door panel 54. For receiving the interlocking tabs 61 and 62 so as to form interlocking means for the door panels at the end of the carrier, a pair of slits 63 and 64 are formed respectively in the door panels 57 and 58. As can best be seen in FIGS. 1 and 2, the tab 61 simply slips through the slit 63 from outside so as to secure the door panels 53 and 57 to each other.

In order to hold the closure means comprising the door panels 53 and 57 inwardly and in engagement with the adjacent end bottles, a pair of locking notches are formed in the medial keel panel designated by the numeral 65 and foldably joined along fold line 66 to one edge of the bottom panel 30. The notches are designated at 67 and 68. As is understood in the art, the keel panel 65 normally is disposed in perpendicular relationship to the bottom panels 29 and 30 as is best shown in FIGS. 1, 2 and 4 and separates the rows of bottles to aid in protecting the bottles against breakage.

As will be understood from the drawing, the outer door panel 53 is simply inwardly toward the end bottles until the lower portion thereof rides into the locking notch 67. This arrangement serves to hold both door panels 53 and 57 securely closed. Likewise, door panels 54 and 58 are held in the closed position by locking notch 68 at the other end of medial keel panel 65.

As can best be seen in FIGS. 1 and 2, the door panel 53 is configured to conform with the adjacent portions of the assembled wrapper of the door panel 57. For example, door panel 53 has a generally triangular peak portion 69 which conforms generally with and thus closes the triangular area defined by the opposed edges of top sloping panel 11 and web panel 6. Likewise, end door panel 53 is beveled as indicated at 70 so as to conform generally with the disposition of bottom sloping panel 19. Similarly the door panel 57 has a peak portion 71 and is beveled at 72, while the straight upper edge portions 73 and 74 of panels 53 and 57 are essentially parallel with the lower edge of end panel 2. Door panels

54 and 58 are constructed in a similar manner to conform to the opposite end of the carrier.

From the description thus far, it will be understood that protection for the packaged items is afforded at the ends of the wrapper in the form of the door panels 53, 54 and 57, 58 and the structure associated therewith.

In accordance with one feature of this invention and as depicted in FIG. 6, one blank may be nested with an adjacent blank. For example, the blank shown in solid lines is arranged so that the space between the door-like end panels 58 and 54 is filled substantially by the panel door 54 of a reversed adjacent blank shown in dotted lines. In like fashion the space between the door panels 54 and 58 of the blank shown in dotted lines is substantially filled by the door panel 54 of the blank shown in solid lines. As explained, if the bottles are tall compared to their diameters, the height of the door panels such as 53, 57, 54 and 58 relative to the width of the top central panels such as 1, is such that nesting would be impossible due to the narrowness of the top panel. From FIG. 1 it is apparent that the end panels such as 2, for example, effectively reduce the required height of the end door panels such as 53 and 57. Thus even though the height of the primary packages such as the bottles B may be great compared to the diameters, the door panels need not be so tall as to preclude nesting because of the fact that the end panels 2 and 3 serve to close the upper portions of the ends of the wrapper. Thus by the combination of panels such as 2, 57 and 53 an effective closure means is provided and at the same time nesting is achieved affording substantial economy.

In terms of the relative dimensions of the various panels of the carrier, it is apparent that according to the invention the combined linear width of the central top panel 1, the two top sloping panels 11 and 12, the two side panels 15 and 16, and the vertical component of the two bottom sloping panels 19 and 20 is about three times the height of each door panel 53, 57, 54 and 58. It is also apparent that the vertical component of the width of the end panels is slightly greater than the difference between the height of the door panels and the spacing between the top central panel and the bottom lap panels.

Furthermore, the top edges of the door panels 53 and 57, for example, comprising the peak portions 69 and 71 and the straight portions 73 and 74, generally coincide with the end edges of the sloping panels 11 and 12 and with the bottom edges 6a and 8a of the web panels 6 and 8 and the lower edge of the end panel 2. Thus each pair of door panels cooperates with the associated end panel to provide effective and complete closure of the end of the carrier without requiring any holding action by the end panel on the door panels since the latter are held firmly in position by their interlocking action with each other and with the associated locking notch in the keel panel as described.

While a particular embodiment of the invention has been shown and described, it will be understood that the invention is not limited thereto and it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

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

1. An article carrier comprising a central top panel, a pair of top sloping panels foldably joined to the side edges of said central top panel, a pair of spaced side wall panels foldably joined respectively to the edges of said top sloping panels remote from said central top panel, a pair of bottom sloping panels foldably joined respectively to the edges of said side wall panels remote from said top sloping panels, a pair of lap panels foldably joined respectively to the edges of said bottom sloping panels remote from said side wall panels, means for securing said lap panels together, a door panel foldably joined to each end edge of

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each of said side wall panels, said door panels being somewhat wider than one-half the spacing between said side wall panels and having their inner edges disposed in overlapping relation when closed and being of a height approximating one-third of the combined linear widths of said central top panel, of said pair of top sloping panels, said pair of side walls and the vertical component of said bottom sloping panels, and an end panel foldably joined to each end edge of said top central panel, a web panel foldably joined to each end of each end panel and to the adjacent end of one of said top sloping panels, said end panels being disposed at an angle to said top central panel and the vertical component of the width of said end panels being slightly greater than the difference between the height of said door panels and the distance by which said top central panel and said lap panels are spaced apart, said door panels and said end panels forming complete closure structure for the ends of the carrier.

2. A carrier according to claim 1 wherein the upper edges of said door panels are configured so as to complement the lower edges of the adjacent end panel and of the adjacent web panel.

3. A carrier formed from a unitary blank for packaging two rows of bottles having their axes disposed in substantially parallel relationship, said carrier comprising a top panel, a pair of top sloping panels foldably joined to opposite sides of said top panel, an upper end panel at each end of the carrier foldably joined to said top panel and having foldable connections with said top sloping panels whereby said upper end panel is disposed at a substantial angle to said top panel, a pair of side wall panels foldably joined respectively along the lower edges of said top sloping panels, a pair of bottom panels having foldable connections respectively with the bottom edges of said side wall panels, fastening means for securing said bottom panels together with said side wall panels in predetermined spaced relation, a pair of door panels at each end of the carrier having hinged connections with the end edges of said side wall panels respectively, each said pair of door panels having a combined width greater than said spaced relation of said side wall panels, the height of each said door panel being less than the height of said top panel above said bottom panels by a distance approximately equal to the vertical component of the width of one of said end panels, interlocking means for securing each said pair of door panels together to form a substantially complete closure for the ends of the carrier

except for the resulting space between said top panel and the tops of each said pair of door panels, and said foldable connection between said end panel and said top sloping panels including web panels proportioned to hold the associated end panel in generally vertical position in the assembled carrier such that each said end panel effectively closes the space between the associated said door panels and said top panel.

4. A carrier as defined in claim 3 further characterized in that said foldable connection between each of said top sloping panel and the adjacent said upper end panel includes a triangular web panel having its outer edge inclined in the opposite direction from the adjacent said sloping top panel to define therewith a triangular space, and each of said door panels including a peak portion on the upper edge thereof adjacent said hinge connection thereof and proportioned to fill in the adjacent said triangular space, the remainder of the upper edge of said door panels being at a level below said top panel to leave a space effectively closed by the adjacent said upper end panel.

5. A carrier as defined in claim 3 comprising a pair of bottom sloping panels each foldably joined to one of said side wall panels and to the adjacent said bottom panel, and each of said door panels having a beveled lower edge portion proportioned for alignment with the edge of the adjacent said bottom sloping panel in the fully assembled condition of the carrier.

6. A carrier as defined in claim 3 formed of paperboard and characterized in that in said unitary blank, the area between the opposed upper edges of each pair of said door panels on each side of the blank is proportioned to receive therein one of said door panels on a second of said blanks and thereby to provide for lateral nesting of multiple said blanks in the single sheet of paperboard to minimize waste thereof.

References Cited by the Examiner

UNITED STATES PATENTS

3,204,814	9/1965	Mahon	220-112
3,252,649	5/1966	Graser et al.	229-40
3,269,531	8/1966	Weiss	220-113 X

JOSEPH R. LECLAIR, *Primary Examiner.*

D. F. NORTON, *Assistant Examiner.*