

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Bottle Carrier

We, THE MEAD CORPORATION, a corporation formed and existing under the laws of the State of Ohio, United States of America, of 118 West First Street, Dayton, State of Ohio, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to bottle carriers.

According to the invention there is provided a carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another; said carrier comprising a top panel and a bottom section interconnected by a pair of side sections, the bottom section comprising a pair of bottom panels, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, a pair of end panels at each end of the carrier, each end panel being foldably joined to an edge of a side section, interlocking means for securing the end panels at each end of the carrier together, and a locking notch formed adjacent each end of said keel panel for receiving and holding the respective adjacent pair of end panels.

The invention also provides a carton blank for a carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another, said carton blank comprising a sheet of material adapted to be wrapped about a group of bottles and arranged to have its edges adjoined to form an open ended tubular container having a top section and a bottom section interconnected by a pair of side sections, the bottom section comprising a pair of bottom panels, fastening means for securing said bottom panels together, four end panels, each end panel being foldably joined to an edge of a side section so that a pair of end panels is associated with each end of

the completed carrier, a medial keel panel foldably joined to one of said bottom panels and adapted to be disposed between the two rows of bottles in the completed carrier, interlocking means arranged for securing the end panels at each end of the completed carrier together, and a locking notch formed adjacent each end of said keel panel and adapted to receive and hold the respective adjacent pair of end panels of the completed carrier.

The invention is hereinafter more particularly described by way of example only with reference to the accompanying drawings, in which:—

Fig. 1 is a perspective view of an embodiment of bottle carrier constructed in accordance with the invention;

Fig. 2 is an end view of the embodiment of Fig. 1;

Fig. 3 is a side view of the embodiment of Fig. 1; and

Fig. 4 is a plan view of a blank from which the carrier shown in Figs. 1—3, inclusive, is formed.

With reference to the drawings, the numeral 1 generally designates the top panel of the carrier. A plurality of sunburst openings 2—7 inclusive are formed in the top panel 1 and are adapted for receiving the necks of bottles packaged in the carrier. These openings 2—7 are provided with radial slits such for example as are designated by the numeral 8. These radial slits provide a plurality of radially disposed bottle cap gripping elements designated in Figs. 1 and 4 by the numeral 9 and which are arranged to grip the caps of the packaged bottles from underneath. In this way the main panel 1 is securely anchored to the packaged bottles. Also formed in the top panel 1 is a pair of finger gripping apertures designated by the numeral 10.

Conforming with the shoulders of the packaged bottles, a pair of top sloping panels 11 and 12 are foldably joined along the weakened fold lines 13 and 14 to the side edges of

the top panel 1. A pair of side wall panels 15 and 16 are foldably joined to the top sloping panels 11 and 12, respectively, along the weakened 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. 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. 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 19 and 20 along the fold lines 31 and 32.

In order to tighten the carrier 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. 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 then arranged in overlapping relationship with the panel 30 disposed on the inside.

For separating the end bottles in one half of the carrier from the middle bottles, a pair of tabs 45 and 46 are struck from bottom panel 29 and foldably joined thereto along their respective fold lines 47 and 48. In like fashion, similar 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, and also 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. 2 and 3.

For the purpose of forming a closure for the ends of the carton, a pair of end closure panels 53 and 54 are foldably joined along fold lines 55 and 56 respectively to the ends of side wall panel 16. Similarly a pair of end closure panels 57 and 58 are foldably joined along fold lines 59 and 60 respectively to the end edges of side wall panel 15. A hooked interlocking tab 61 is formed on the inner edge of end panel 53 while a similar interlocking tab 62 is formed on the inner edge of end panel 54. For receiving the inter-

locking tabs 61 and 62 so as to form interlocking means for the end panels at the end of the carrier, a pair of slits 63 and 64 are formed respectively in the end 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 end panels 53 and 57 to each other.

In order to aid in holding the closure means comprising the end panels inwardly and in engagement with the adjacent end bottles, a pair of locking notches are formed in a 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. The keel panel 65 normally is disposed in perpendicular relationship to the bottom panels 29 and 30 as is best shown in Figs. 1 and 2.

Tabs 61 and 62 are provided with double shoulders 61a and 62a respectively. Thus when the tabs 61 and 62 are inserted into slots 63 and 64 a secure lock is formed which effectively prevents substantial relative movement between panels 53 and 57 particularly in a direction tending to increase the overlapping areas along the adjacent edges thereof. Since the notches 67 and 68 of necessity are spaced inwardly a short distance from the ends of keel panel 65, the effective width of the end closure panels 53 and 57, which is established when tab 61 is fully inserted through slot 63, is somewhat greater than the spacing between the end edges 55 and 59. In like fashion the spacing between hinge lines 56 and 60 is less than the effective width of end panels 54 and 58. Thus as the panels 53 and 57 are closed, an over-center toggle action is accomplished as the panels 53 and 57 ride into the notch 67. By this means the panels 53 and 57 are bowed somewhat inwardly of the carrier as is indicated by shade lines at 57a and at 53a. This bowing action tends to cause the panels 53 and 57 to conform generally with the curvature of the adjacent bottle and more importantly aids substantially in holding the panels 53 and 57 closed. Should the package tend to skew due to relative vertical movement between the rows of bottles C, the shoulders 61a and 62a effectively maintain the tabs 61 and 62 in the locked condition thereby enhancing the security of the package due at least in part to the fact that the slits 63 and 64 and the planes of panels 57 and 58 are generally parallel to the edges of articles "C" and the shoulders 61a and 62a are thus disposed to interlock with one or the other end of the slots 63 and 64.

Security of the interlocking action between the end panels is further enhanced by the holding tabs 53a and 54a on panels 53 and 54 which positively hold the bottom edges of the associated panels securely in locking notches 67 and 68. This action also aids in holding panels 57 and 58 closed because such panels



are behind the panels 53 and 54 and the tabs 53a and 54a. Weakened lines 53b and 54b facilitate movement of tabs 53a and 54a into locking position without impairing the security of the locking section.

As can best be seen in Figs. 1 and 2, the end panel 53 is configured to conform with the adjacent portions of the wrapper as is the end panel 57. For example, end panel 53 is bevelled as indicated at 69 so as to conform generally with the disposition of top sloping panel 12. Likewise end panel 53 is bevelled as indicated at 70 so as to cause the end panel 53 to conform generally with the disposition of bottom sloping panel 20. Similarly, the end panel 57 is bevelled at 71 and 72. End panels 54 and 58 are constructed in a manner to cause those panels to conform to the opposite end of the carrier.

From the above description it will be understood that protection for the packaged items is afforded at the ends of the carrier by the end panels 53, 54 and 57, 58 and the structure associated therewith. Since the sunburst configuration disposed about the openings 2-7 in the top panel 1 serve to anchor the top panel securely in position relative to the packaged items, the end panels 53, 54, 57 and 58 are all securely affixed in position and hence afford a reliable and sturdy end closure for the ends of the wrapper.

WHAT WE CLAIM IS:—

1. A carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another; said carrier comprising a top panel and a bottom section interconnected by a pair of side sections, the bottom section comprising a pair of bottom panels, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, a pair of end panels at each end of the carrier, each end panel being foldably joined to an edge of a side section, interlocking means for securing the end panels at each end of the carrier together, and a locking notch formed adjacent each end of said keel panel for receiving and holding the respective adjacent pair of end panels.

2. A carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another; said carrier comprising a top panel, a pair of top sloping panels foldably joined to opposite sides of said top panel, a pair of side wall panels foldably joined respectively along the edges of said top sloping panels remote from said top panel, a pair of bottom sloping panels foldably joined respectively to the bottom edges of said side wall panels, a pair of bottom panels foldably joined respectively along the edges of said bottom sloping panels opposite from the edges thereof which are joined to said side wall pan-

els, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, and end panel foldably joined to each end edge of each side wall panel, interlocking means for securing the end panels at each end of the carrier together, and a locking notch formed adjacent each end of said keel panel for receiving and holding the respective adjacent pair of end panels.

3. A carrier according to Claim 1 or 2, wherein the end panels are shaped to conform generally with the cross-sectional configuration of the carrier so that each pair of end panels provides a complete closure at an end of the carrier.

4. A carrier according to any one of Claims 1, 2 or 3, wherein the top panel is provided with openings arranged rectilinearly to receive the necks of the packaged bottles and wherein the peripheral edges of the openings are constructed with radial cut lines to form sunbursts for engaging the caps of the packaged bottles from underneath thereby to anchor the top panel to the group of packaged bottles.

5. A carrier according to any preceding claim wherein said interlocking means are formed adjacent the inner edges of the end panels, and the end panels are so arranged that they are secured together in partially overlapping relation, said interlocking means being effective to limit relative movement between said end panels in the direction increasing their overlapping relation and thereby establishing the effective width of said end panels, said effective width being sufficiently greater than the spacing between the end edges of said side sections so as to establish an over-centre toggle action when said end panels are interlocked and closed, whereby said end panels are biased inwardly of the carrier in the closed position into said locking notch.

6. A carrier according to Claim 5, wherein the end panels are arranged to conform to the outer surface of the adjacent bottles when toggled over centre and into the closed position.

7. A carrier according to Claim 5 or 6, wherein the interlocking means comprise an interlocking tab having oppositely disposed shoulders and formed on one of said end panels and a slot is formed in the other of said end panels for receiving said interlocking tab.

8. A carrier according to Claim 7, wherein said slot and the plane of said interlocking tab are disposed in generally parallel relationship with the axes of the bottles whereby said shoulders on said tab are effective to aid in holding said end panels closed when the bottles in one row tend to move in a direction parallel to the axes thereof and relative to the bottles in the other row.

9. A carrier according to any preceding claim, wherein a holding tab is formed on

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are behind the panels 53 and 54 and the tabs 53a and 54a. Weakened lines 53b and 54b facilitate movement of tabs 53a and 54a into locking position without impairing the security of the locking section.

As can best be seen in Figs. 1 and 2, the end panel 53 is configured to conform with the adjacent portions of the wrapper as is the end panel 57. For example, end panel 53 is bevelled as indicated at 69 so as to conform generally with the disposition of top sloping panel 12. Likewise end panel 53 is bevelled as indicated at 70 so as to cause the end panel 53 to conform generally with the disposition of bottom sloping panel 20. Similarly, the end panel 57 is bevelled at 71 and 72. End panels 54 and 58 are constructed in a manner to cause those panels to conform to the opposite end of the carrier.

From the above description it will be understood that protection for the packaged items is afforded at the ends of the carrier by the end panels 53, 54 and 57, 58 and the structure associated therewith. Since the sunburst configuration disposed about the openings 2-7 in the top panel 1 serve to anchor the top panel securely in position relative to the packaged items, the end panels 53, 54, 57 and 58 are all securely affixed in position and hence afford a reliable and sturdy end closure for the ends of the wrapper.

WHAT WE CLAIM IS:—

1. A carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another; said carrier comprising a top panel and a bottom section interconnected by a pair of side sections, the bottom section comprising a pair of bottom panels, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, a pair of end panels at each end of the carrier, each end panel being foldably joined to an edge of a side section, interlocking means for securing the end panels at each end of the carrier together, and a locking notch formed adjacent each end of said keel panel for receiving and holding the respective adjacent pair of end panels.

2. A carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another; said carrier comprising a top panel, a pair of top sloping panels foldably joined to opposite sides of said top panel, a pair of side wall panels foldably joined respectively along the edges of said top sloping panels remote from said top panel, a pair of bottom sloping panels foldably joined respectively to the bottom edges of said side wall panels, a pair of bottom panels foldably joined respectively along the edges of said bottom sloping panels opposite from the edges thereof which are joined to said side wall pan-

els, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, and end panel foldably joined to each end edge of each side wall panel, interlocking means for securing the end panels at each end of the carrier together, and a locking notch formed adjacent each end of said keel panel for receiving and holding the respective adjacent pair of end panels.

3. A carrier according to Claim 1 or 2, wherein the end panels are shaped to conform generally with the cross-sectional configuration of the carrier so that each pair of end panels provides a complete closure at an end of the carrier.

4. A carrier according to any one of Claims 1, 2 or 3, wherein the top panel is provided with openings arranged rectilinearly to receive the necks of the packaged bottles and wherein the peripheral edges of the openings are constructed with radial cut lines to form sunbursts for engaging the caps of the packaged bottles from underneath thereby to anchor the top panel to the group of packaged bottles.

5. A carrier according to any preceding claim wherein said interlocking means are formed adjacent the inner edges of the end panels, and the end panels are so arranged that they are secured together in partially overlapping relation, said interlocking means being effective to limit relative movement between said end panels in the direction increasing their overlapping relation and thereby establishing the effective width of said end panels, said effective width being sufficiently greater than the spacing between the end edges of said side sections so as to establish an over-centre toggle action when said end panels are interlocked and closed, whereby said end panels are biased inwardly of the carrier in the closed position into said locking notch.

6. A carrier according to Claim 5, wherein the end panels are arranged to conform to the outer surface of the adjacent bottles when toggled over centre and into the closed position.

7. A carrier according to Claim 5 or 6, wherein the interlocking means comprise an interlocking tab having oppositely disposed shoulders and formed on one of said end panels and a slot is formed in the other of said end panels for receiving said interlocking tab.

8. A carrier according to Claim 7, wherein said slot and the plane of said interlocking tab are disposed in generally parallel relationship with the axes of the bottles whereby said shoulders on said tab are effective to aid in holding said end panels closed when the bottles in one row tend to move in a direction parallel to the axes thereof and relative to the bottles in the other row.

9. A carrier according to any preceding claim, wherein a holding tab is formed on

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the outer one of each of said pair of end panels and disposed in said locking notch.

- 5 10. A carrier according to Claim 9, wherein a weakened fold line is formed in said holding tab to facilitate movement thereof into said locking notch.

- 10 11. A carton blank for a carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another, said carton blank comprising a sheet of material adapted to be wrapped about a group of bottles and arranged to have its edges adjoined to form an open ended tubular container having a top section and a bottom section interconnected by a pair of side sections, the bottom section comprising a pair of bottom panels, fastening means for securing said bottom panels together, four end panels, each end panel being foldably joined to an edge of a side section so that a pair of end panels is associated with each end of the completed carrier, a medial keel panel foldably joined

to one of said bottom panels and adapted to be disposed between the two rows of bottles in the completed carrier, interlocking means arranged for securing the end panels at each end of the completed carrier together, and a locking notch formed adjacent each end of said keel panel and adapted to receive and hold the respective adjacent pair of end panels of the completed carrier.

12. A bottle carrier substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

13. A carton blank for a bottle carrier substantially as hereinbefore described with reference to and as shown in Figure 4 of the accompanying drawings.

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