March 19, 1968 P. J. WOOD 3,373,867

ARTICLE CARRIER

Filed May 22, 1967

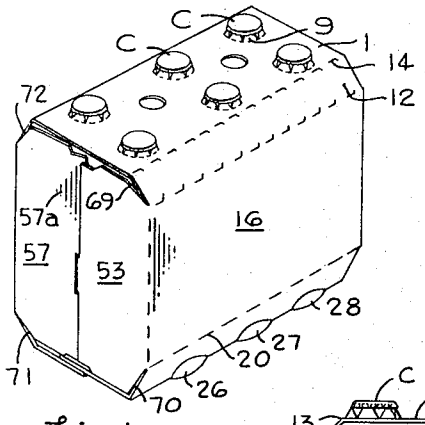


Fig. 1

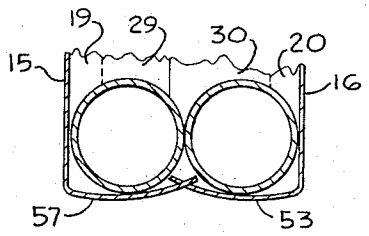


Fig. 5

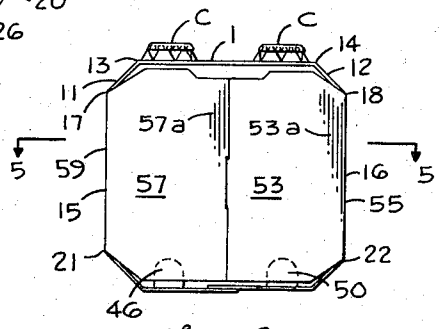


Fig. 2

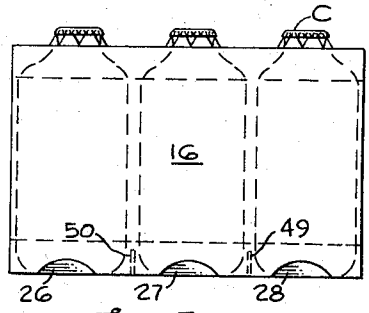


Fig. 3

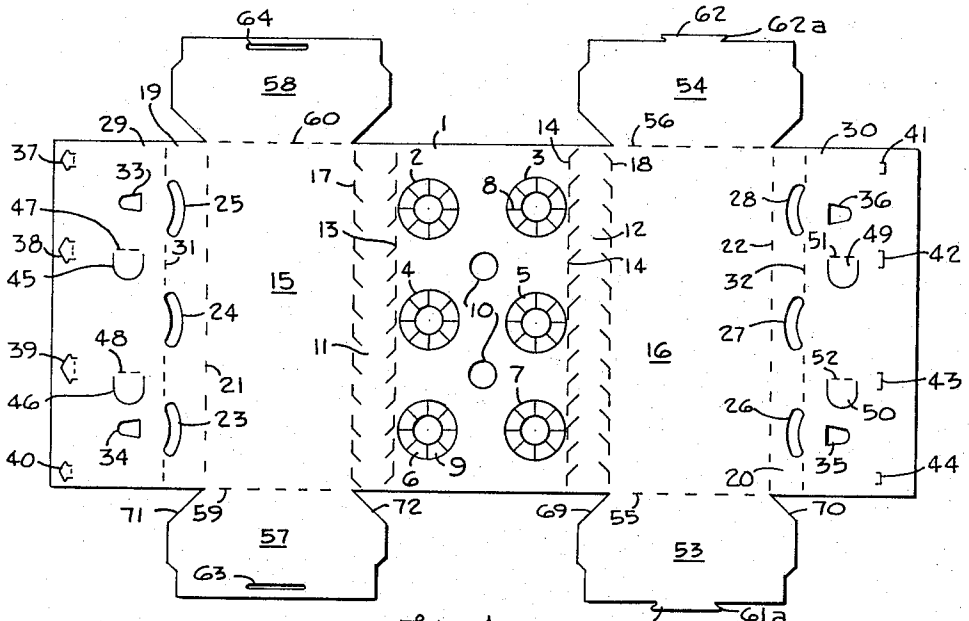


Fig. 4

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ARTICLE CARRIER

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4 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

An article carrier of the wrap-around type having top, bottom and side panels interconnected to form a tubular structure is provided with end panels which are foldably joined to each end edge of each side wall and which are interlocked along their inner edges. The overall effective width of each pair of end panels at each end of the carrier is somewhat greater than the spacing between the end edges of the side walls so that, when the panels are interlocked and closed, an over-center toggle action is effected which serves to bias and hold the end panels closed.

This application is a continuation-in-part of application Ser. No. 407,779, filed Oct. 30, 1964 and is related in some respects to United States Patent 3,306,519 issued Feb. 28, 1967.

The invention in one form comprises a pair of end panels foldably joined to the end edges of the side walls at each end of a wrapper together with interlocking means for securing the adjacent edges of the end panels together, the effective width of each pair of end panels being somewhat greater than the spacing between the side walls when interlocked so that the end panels are toggled over-center during closing and are thus biased closed by this means.

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 wrap-around type of carrier to which this invention is applicable and which shows closure means constructed according to this invention; FIG. 2, is an end view of the arrangement depicted in FIG. 1; FIG. 3 is a side view of the arrangement depicted in FIG. 1; FIG. 4 is a plan view of a blank from which the wrapper shown in FIGS. 1–3 inclusive, is formed; and in which FIG. 5 is a fragmentary cross-sectional view taken on line 5—5 in FIG. 2.

With reference to the drawings, the numeral **1** designates the top panel of the wrapper. A plurality of sunburst openings **2–7** inclusive are formed in the top panel **1** and are for receiving the necks of bottles packaged in the wrapper. 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 articles. The apertured top panel for receiving the bottle necks is optional. If desired the panel **1** could overlie the 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 slopping 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**. As is well known, bottom portions 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 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 then 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, 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, 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. 2 and 3.

For the purpose of forming a closure for the ends of the wrapper as described above and in accordance with this invention, 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 interlocking 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.

Tabs **61** and **62** are provided with double shoulders **61***a* and **62***a* 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. 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. By this means the panels **53** and **57** are bowed somewhat inwardly of the carrier as is indicated by shade lines at **57***a* and **53***a*. This bowing action

tends to cause the panels **53** and **57** to conform generally with the curvature of the adjacent bottle and more importantly serves to hold the panels **53** and **57** closed. Should the package tend to skew due to relative vertical movement between the rows of articles C, the shoulders **61***a* and **62***a* 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 **61***a* and **62***a* are thus disposed to interlock with one or the other end of the slots **63** and **64**.

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 **13**. Likewise end panel **53** is bevelled as indicated at **70** so as to cause the panel **53** to conform generally with the 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.

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. A carrier for packaging two rows of articles whose axes are disposed in substantially parallel relation to one another, said carrier comprising a tubular structure disposed about the two rows and having top, side, and bottom sections disposed in close contact with the articles

and having a cross sectional configuration determined at least in part by the shape of the articles, end panels foldably joined to the end edges of said side sections at at least one end of the carrier, interlocking means adjacent the inner edges of said end panels for securing said end panels together in partially overlapping relation, said interlocking means being effective when interlocked to limit relative movement between said end panels in the direction increasing their overlapping relation and thereby to establish the effective width of said end panels and said effective width being sufficiently greater than the spacing between the end edges of said side sections so as to establish an over-center toggle action when said end panels are interlocked and closed whereby said end panels are biased inwardly of said carrier toward closed position.

2. A carrier according to claim **1** wherein the articles are so configured in cross section that said end panels tend to conform to the outer surfaces of the adjacent articles when toggled over-center and into closed position.

3. A carrier according to claim **1** wherein an interlocking tab having oppositely disposed shoulders is formed on one of said end panels and a slot is formed in the other of said end panels for receiving said interlocking tab.

4. A carrier according to claim **3** wherein said slot and the plane of said interlocking tab are disposed in generally parallel relationship with the axes of the articles whereby said shoulders on said tab are effective to aid in holding said end panels closed when the articles in one row move in a direction parallel to the axes thereof and relative to the articles in the other row.

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