June 4, 1968 J. H. LOCK 3,386,570

ARTICLE CONTAINER HAVING INTEGRAL ARTICLE PROTECTING MEANS

Filed May 11, 1966 2 Sheets-Sheet 1

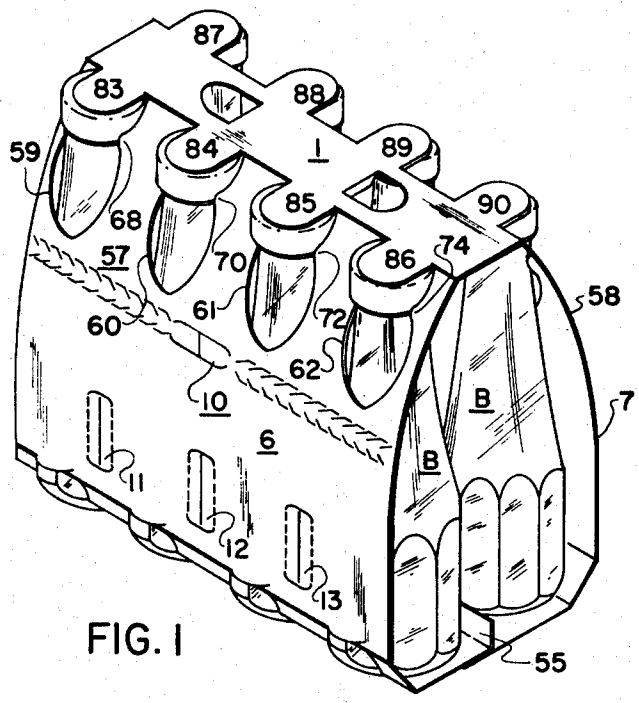

FIG. 1

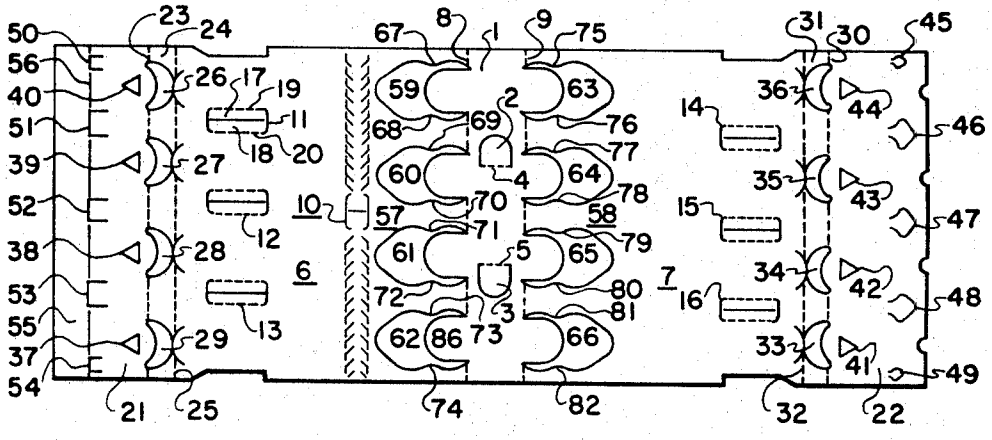

FIG. 2

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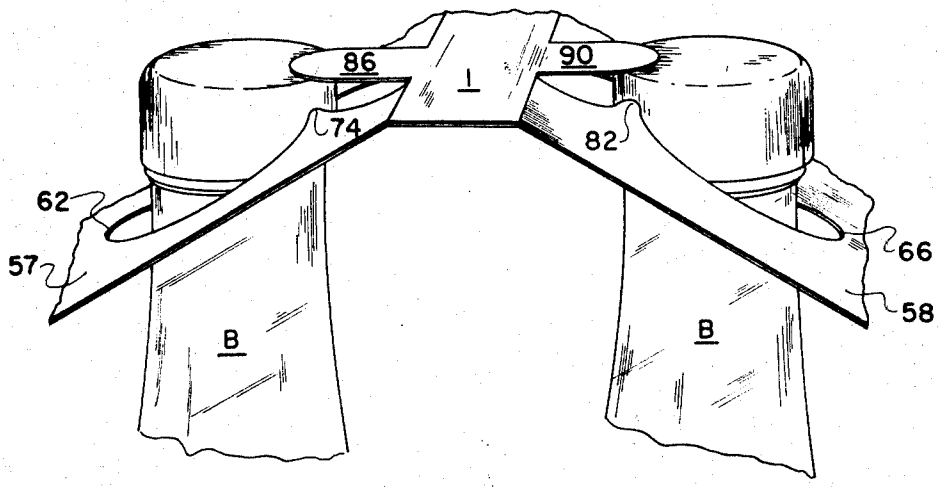

FIG. 3

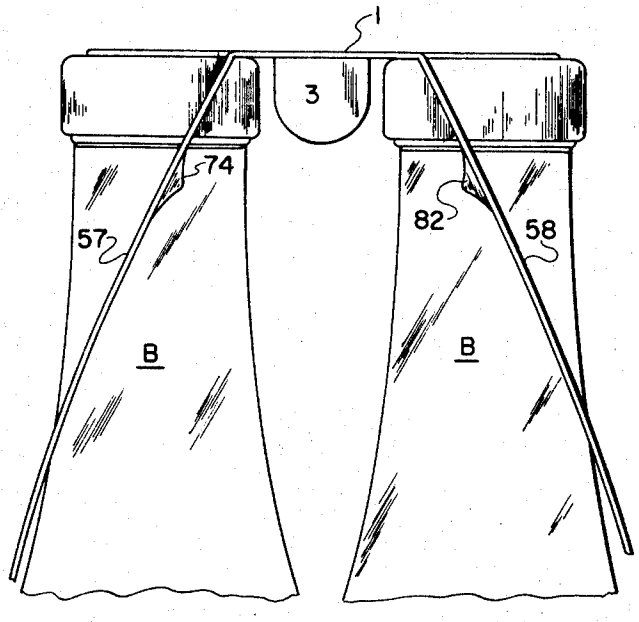

FIG. 4

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ARTICLE CONTAINER HAVING INTEGRAL ARTICLE PROTECTING MEANS

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ABSTRACT OF THE DISCLOSURE

A sleeve type open ended wrapper is adapted for packaging tubular articles which are tapered and in which the top panel overlies the upper ends of the packaged items. Sloping shoulder panels are interrelated with the top panel in such a way that a part of the top panel overlies the upper ends of the packaged articles and elongated apertures are formed in the sloping panel and provided with inwardly projecting protrusions disposed in such a way as to prevent inward movement of the upper ends of the packaged items. In order to form the package, the items to be packaged are spaced apart and their upper ends inserted through the apertures following which the items are moved toward each other as the sloping panels and side walls are folded downwardly following which the bottom lap panels are secured together.

This invention relates to an article container having integral article protecting means and more particularly to a tubular type open ended container for articles arranged in two rows and is concerned with integral means for preventing an article in one row from colliding with an adjacent article in the other row and to a method of forming such a container.

In certain known arrangemnets, inserts are incorporated in article carriers and such inserts are provided with cushioning panels interposed between adjacent articles so as to prevent undesired collision therebetween. An example of such an arrangement is the separate insert disclosed and claimed in U.S. Patent 3,064,871 issued Nov. 20, 1962, on an application filed by Prentice J. Wood.

Other containers have been provided wherein abutment surfaces affixed to the container are disposed so as to prevent undesired collision between adjacent articles and U.S. Patent 3,006,530 issued Oct. 31, 1961, on an application filed by Homer W. Forrer discloses an example of such structure.

In still another arrangement, adjacent articles such as bottles, are protected against collision with each other by means of apertures formed in the top panel of the carrier or container and such apertures are arranged to receive the necks of the bottles. By this means the bottles are positioned in fixed spaced relation to each other and collisions are thus prevented.

Where the articles to be packaged are bottles having gently tapering neck portions, the provision of apertures in the top panel for receiving the necks of the bottles is not feasible because the top panel is not provided with well defined bottle shoulder portions on which to rest so that the tension of the container or carrier is critical to the point of undesirability. Of course where bottles having tapering necks are the articles to be packaged, cushioning structure in the form of a separate insert or integrally formed with the main portion of the container

is obviously undesirable because of the substantial space between adjacent bottles at the neck portions thereof.

A principal object of this invention is to provide an arrangement for maintaining the articles in one row in spaced relation from the articles in another row and wherein the separating means is particularly well adapted for use in conjunction with bottles having tapered neck portions.

Another object of the invention is the provision of an improved open ended type container which is particularly well adapted for maintaining the packaged items in spaced relation and which is unusually simple in its construction and arrangement.

Still another object of the invention is to provide an open ended or wrap around container or carrier with improved article separating means which is adaptable for use in connection with articles having straight rather than tapered side walls.

A further object of the invention is the provision of an improved article carrier or container wherein means are provided for preventing the articles from becoming dislodged through article receiving apertures formed in the container and wherein the apertures are provided with means for maintaining the articles in spaced relation relative to each other.

A still further object of this invention is to provide an improved method of forming a container of the type disclosed and claimed herein.

The invention in one form as applied to an open ended container or wrapper for a plurality of tubular articles arranged in two rows in side by side rectilinear relation comprises a top panel arranged in overlying relation to the tops of the articles, a pair of side walls foldably joined to said top panel along opposite edges thereof respectively, a bottom panel foldably joined along the opposite edges thereof to the bottom edges of the side walls respectively, the upper portions of the side walls being disposed in outwardly sloping relation to said top panel with the top panel being substantially narrower than the bottom panel, a plurality of apertures formed in the sloping portion of the side walls and of inwardly converging configuration to prevent inward movement of the associated article. In one form of the invention inwardly extending protrusions are formed along the side edges of said apertures, the protrusions being disposed inwardly with respect to an article disposed in the associated aperture so as to form an abutment surface whereby inward movement of the articles is prevented and a spaced relationship maintained between the articles in one row and those in the other row.

The method of forming the container comprises spacing the articles in the two rows apart, placing the container blank over the articles with the necks thereof in the container apertures and thereafter moving the rows of articles toward each other as the container walls are folded downwardly and thereby to establish the desired relation between the articles and the container whereby the two rows of articles are spaced apart.

For a better understanding of the invention reference may be had to the following detailed description taken in conjunction with the accompanying drawing in which FIG. 1 is a perspective view of a container with a plurality of bottles packaged therein and which embodies the invention; FIG. 2 is a plan view of a blank from which the container depicted in FIG. 1 is formed; FIG. 3 is a perspective view of a pair of bottles together with a frag-

ment of the container structure shown in the position which the parts occupy during the formation of the package depicted in FIG. 1 but before the package is completely formed; and in which FIG. 4 is an end view of the package depicted in FIGS. 1 and 3 and showing the package in its completely formed condition.

With reference to the drawings the numeral 1 designates a top panel in which a pair of finger gripping tabs 2 and 3 are formed. Tab 2 is struck out of panel 1 and is foldably joined thereto along fold line 4 while tab 3 is struck out of top panel 1 and is foldably joined thereto along a fold line 5. The openings defined by tabs 2 and 3 simply constitute finger gripping apertures which are well known in the art.

Side walls 6 and 7 are foldably joined respectively to the side edges 8 and 9 of top panel 1. A conventional tear strip generally designated by the numeral 10 is formed in side wall 6 and a plurality of openings 11, 12 and 13 are formed in side wall 6 while similar apertures 14, 15 and 16 are formed in side wall 7. These apertures 11–16 simply provide openings whereby suitable machine elements may enter and extend in a transverse direction relative to the package thereby to separate an adjacent article in one row from an adjacent article in the same row. Preferably the openings are identical in construction, Opening 11 may comprise a pair of hingedly mounted flap elements 17 and 18 foldably joined along fold lines 19 and 20 to the side wall 6. Since the apertures 11–16 are identical in structure and since they form no part of this invention, a detailed description of each is omitted for the sake of simplicity and clarity.

The bottom structure of the package comprises a pair of lap panels 21 and 22 which are interconnected with each other to form a composite bottom panel. Lap panel 21 is foldably joined along fold line 23 to the bottom edge of the sloping panel 24 which in turn is foldably joined to the bottom edge of side wall 6 along fold line 25. Preferably a plurality of article receiving apertures 26, 27, 28 and 29 are formed in the sloping panel 24 and serve to receive the bottoms of the packaged items in a manner well known in the art.

The lap panel 22 is foldably joined along fold line 30 to the bottom edge of sloping panel 31 which in turn is foldably joined along a fold line 32 to the bottom edge of side wall 7. Apertures 33, 34, 35 and 36 are formed in the sloping panel 31 and, like openings 26–29 serve a purpose well known in the art.

Once the lap panels 21 and 22 are arranged in flat face contacting relation underneath the articles to be packaged, the wrapper is tightened by suitable machine elements which enter the apertures 37–40 formed in panel 21 and the apertures 41–44 formed in lap panel 22. The machine elements associated with the tightening apertures formed in lap panel 21 move in a direction toward the corresponding machine elements associated with the tightening apertures 41–44. Thus as these elements move toward each other the wrapper blank is tightened and while held in tightened condition the lap panels 21 and 22 are secured together by machine elements which engage the locking tabs 45–49 and drive such tabs through the apertures defined by retaining tabs 50–54. In this manner the package is secured.

During the formation of the package, the medial separator panel 55, which is foldably joined to an edge of the lap panel 21 along fold line 56, is folded upwardly and between the articles in the two rows of articles. Thus as is shown in FIG. 1, the panel 55 separates the bottoms of the articles B in one row from the bottles B in the other row.

As is apparent from the drawing, the top portion of the bottles B extend upwardly through apertures defined in the upper sloping portions 57 and 58 of the side walls 6 and 7 respectively. In the drawings these apertures are designated by the numerals 59–66.

In accordance with a feature of this invention and in order to prevent the top part of a bottle B in one row from moving toward the top part of a bottle B in the other row, the side edges of apertures 59–66 are of inwardly converging configuration along the inner portions thereof. If desired a plurality of inwardly extending protrusions may be formed along at least one side edge of each of the apertures 59–65. Preferably two inwardly extending protrusions are formed in each aperture. In the drawings these protrusions are designated by the numerals 67–82. Of course it will be understood that a single protrusion such as 67 could suffice for the aperture 59 and one or both protrusions in each opening 59–66 could be eliminated if desired provided the apertures are properly formed in relation to the article.

Thus in accordance with a feature of the invention and as is best shown in FIGS. 3 and 4, the entire extremities of protrusions such as 74 and 82 are disposed inwardly of the axis of their associated bottles B so that each bottle in each row is spaced from the adjacent bottle in the other row. Of course it is essential that the width of narrow top panel 1 be such that the side edges of this panel are disposed inwardly of the axes of bottles B as is apparent from FIGS. 1 and 4.

In accordance with another facet of the invention, the bottles B are prevented from dislodgement upwardly through the apertures 59–66 by a plurality of tabs 83–90 which are formed along the edges of the top panel 1 and which are disposed in general coincidence with their associated bottles. As is apparent from FIG. 2 each tab in effect is taken from its associated aperture. For example tab 86 in effect is taken from aperture 62.

The improved method of this invention is best illustrated by FIGS. 3 and 4. In FIG. 3 the articles B are shown spaced apart with the upper ends of the articles disposed within the apertures 62 and 66. As the operation progresses, the articles B are moved toward each other while the side walls including the upper portions 57 and 58 thereof are folded downwardly. By this procedure the proper relation between the apertures 62 and 66 and the articles B is established and the two rows of articles are held apart. Of course the elongated shape of the apertures accommodates the initial spacing and inward movement of the articles B and also accounts for the snug holding action as depicted in FIG. 4. Of course the protrusions such as 74 and 82 are properly oriented by the novel procedure.

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 container for a plurality of tubular articles having tapered neck portions and arranged in two rows in side by side rectilinear relation, said container comprising a top panel arranged in overlying relation to the tops of the articles, said top panel being of such width that the side edges thereof are spaced inwardly from the axes of the articles in each row, a pair of side walls foldably joined to said top panel along said side edges thereof respectively, a bottom panel foldably joined along opposite side edges thereof to the bottom edges of said side walls respectively, said side walls having their upper portions disposed in outwardly sloping relation to said top panel, a plurality of apertures formed in said sloping upper portions of said walls for receiving portions of the upper ends of the articles respectively, the side edges of each of said apertures being of inwardly converging semi-rigid configuration defining at least one inwardly extending protrusion engageable by the associated article, the entire inner extremity of each of said protrusions being disposed inwardly of the axis of the associated article so as to prevent inward movement thereof, and a

plurality of tabs formed along the side edges of said top panel and disposed in generally coincidental overlying relation with the tops of the articles respectively, said tabs being effective to aid in preventing upward dislodgment of the articles from the container and being struck from the upper parts of their associated openings respectively.

2. A container according to claim 1 and wherein said tabs are struck from the areas of said sloping upper portions of said side walls which are immediately adjacent the associated one of said protrusions.

References Cited

UNITED STATES PATENTS

1,968,877	8/1934	Cubberley	206—65
2,182,065	12/1939	Warren	220—115 X
2,950,041	8/1960	Stone	206—65
3,156,377	11/1964	Wysacki	220—114
3,186,545	6/1965	Conrades	206—65

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