

[54] ARTICLE CARRIER

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[51] Int. Cl. B65d 5/02

[58] Field of Search 229/40, 52 B

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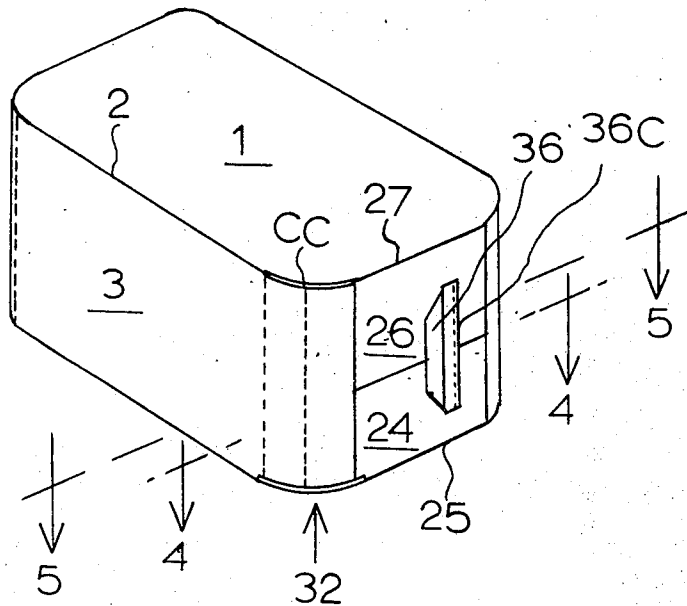
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[57]

ABSTRACT

A wrap around type article carrier in which one wall of the carrier is a composite structure formed of a pair of lap panels disposed in overlapping relationship to each other is provided with closure means for the ends thereof which closure means includes an end flap secured to each end of each side wall together with an end panel foldably joined to the end edge of one of the lap panels and secured in flat face contacting relation to the adjacent end flaps together with a complementary end panel foldably joined to the end edge of the wall of the carrier which is opposite from the composite wall and which is secured in flat face contacting relation to the end flaps. A carrying aperture is formed in the end panel and in the complementary panel at one end of the carrier and a keel panel is foldably joined to the inner one of the lap panels and is interposed between two rows of packaged articles and is provided with holding apertures for receiving parts of the articles in one row thereby to secure such one row against dislodgment through the ends of the tubular structure.

5 Claims, 5 Drawing Figures



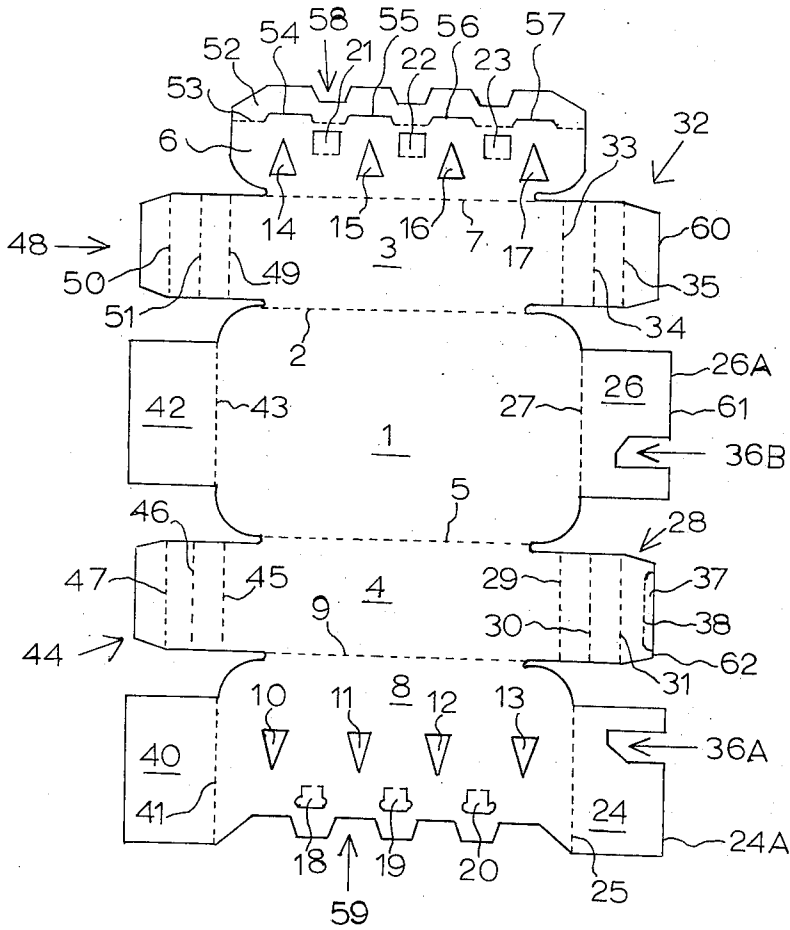
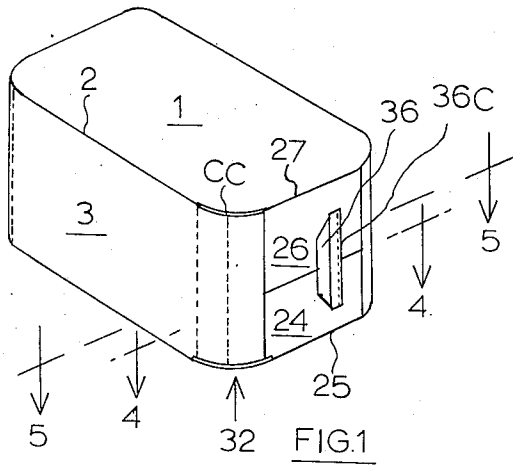


FIG. 2

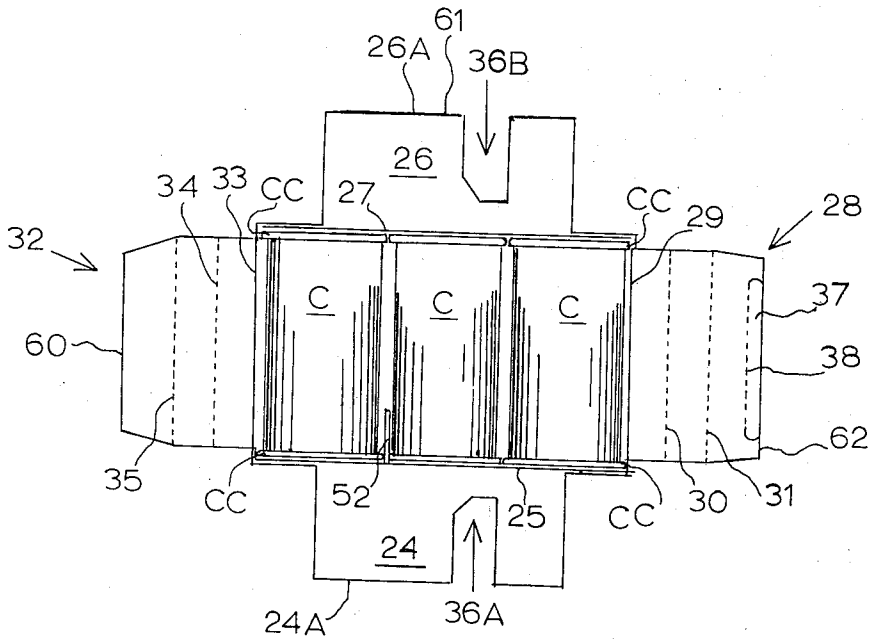


FIG. 3

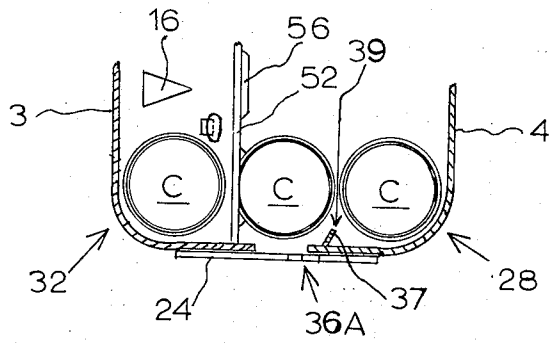


FIG. 4

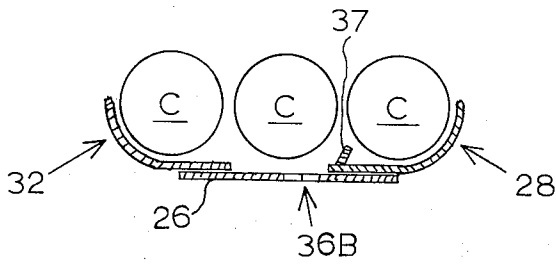


FIG. 5

ARTICLE CARRIER

Pre-formed sleeve type carriers adapted for end loading are known in which closure structure is secured at the ends of the sleeve and closed after end loading is completed.

This invention in one form as applied to a wrap around article carrier in which one panel is a composite panel formed of a pair of overlapping lap panels is provided with end closure means in which an end panel is foldably joined to each end edge of one of the lap panels and secured in flat face contacting relation with transverse end flaps secured to the end edges of the side walls. According to a feature of the invention, a complementary end panel is foldably joined to the panel of the wrapper which is opposite from the composite panel and a carrying aperture is formed in the end panel and in the complementary end panel and a bracing flap struck from and foldably joined to one end flap aids in strengthening a portion of the periphery of the carrying aperture. According to another feature of the invention the grain of the material of the end panel and of the complementary end panel is transversely disposed with respect to the grain of the bracing flap and its associated end flap so that a portion of the periphery of the carrying aperture is defined by a laminated structure whereby the strength of such carrying aperture is substantially enhanced. According to still another feature of the invention, a keel panel is foldably joined to the inner edge of the inner lap panel and interposed between two rows of packaged articles and provided with apertures for receiving a portion of each article in one row thereby to secure the articles in such row against dislodgment through the ends of the tubular structure.

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 complete set-up and loaded carrier constructed according to the invention;

FIG. 2 is a plan view as viewed from the inside of the blank utilized in forming the package shown in FIG. 1;

FIG. 3 is an end view of the structure shown in FIG. 1 but with the end flaps, end panel and complementary end panel shown in outwardly flared positions thus exposing the packaged primary packages disposed within the carrier;

FIG. 4 is a fragmentary cross-sectional view taken along the line designated 4—4 in FIG. 1 and in which

FIG. 5 is a view similar to FIG. 4 but which is taken along the line designated 5—5 in FIG. 1.

In the drawings the numeral 1 designates the top wall of the carrier to the side edge 2 of which side wall 3 is foldably joined. Side wall 4 if foldably joined to top wall 1 along fold line 5. Lap panel 6 is foldably joined to the bottom edge of side wall 3 along fold line 7 while lap panel 8 is foldably joined to the bottom edge of side wall 4 along fold line 9.

A plurality of tightening apertures 10, 11, 12 and 13 are formed in lap panel 8 while similar tightening apertures 14, 15, 16 and 17 are formed in lap panel 6. As is well known in the art, once the blank as shown in FIG. 2 is disposed about a group of articles, machine elements enter the tightening apertures 10-13 and move transversely of the wrapper so as to impart a tightening action thereto in opposition to correspond-

ing machine elements which simultaneously enter the tightening apertures 14, 15, 16 and 17 and move transversely of the wrapper so as to impart a tightening action thereto in opposition to corresponding machine elements which simultaneously enter the tightening apertures 10-13.

Once the blank is tightened, it is secured about the article group by means of locking tabs 18, 19 and 20 which are respectively driven by machine elements into apertures defined by retaining tabs 21, 22 and 23 so as to secure the blank about an article group in a manner well known in the art. As is apparent from FIG. 2, each of the lap panels 6 and 8 is of a width which is less than the width of the bottom and top walls of the carrier.

Closure structure for one end of the carrier includes an end panel 24 foldably joined along fold line 25 to an end edge of lap panel 8 together with a complementary end panel 26 which is foldably joined along fold line 27 to one end of top wall 1. As is apparent in FIG. 1, end panel 24 and complementary end panel 26 are secured in flat face contacting relation with end flap 28 which is foldably joined to side wall 4 along fold line 29 and which is provided with a pair of weakened contour lines 30 and 31 and to end flap 32 which is foldably joined to side wall 3 along fold line 33 and which is provided with weakened contour lines 34 and 35. Thus end flaps 28 and 32 are folded transversely across the end of the tubular structure following which end panel 24 is folded upwardly along fold line 25 and complementary end panel 26 is folded downwardly along fold line 27. End panel 24 and complementary end panel 26 are secured as by glue or other known means to the exterior surfaces of end flaps 28 and 32 as is obvious to those skilled in the art.

End panel 24 is wide enough to close the end of the carrier but extends from one lap panel only, namely lap panel 8. This feature contributes to easy assembly and neat appearance of the finished carrier.

For the purpose of provided convenient carrying means for the carrier, a carrying aperture generally designated by the numeral 36 is provided. This aperture comprises a slot 36A formed in end panel 24 and a complementary slot 36B formed in complementary end panel 26 together with a bracing flap 37 struck from end flap 28 and foldably joined thereto along fold line 38. Thus with the carrier assembled as shown in FIG. 1, slots 36A and 36B are disposed in complementary relationship to each other due to the fact that the upper edge 24A of end panel 24 is disposed in substantially abutting relationship to the lower edge 26A of complementary end panel 26. Furthermore bracing flap 37 is folded inwardly. Since the entire carrier as shown in FIG. 1 is formed from the single blank as depicted in FIG. 2, it is obvious that the grain of end panel 24 and of complementary end panel 26 is disposed in a transverse direction to the grain of end flap 28 and of bracing panel 37 so that a laminate structure is provided about a portion of the periphery of aperture 36 along the right hand edge 36C of aperture 36 which affords substantial mechanical strength thereto.

Furthermore if the carrier is used in conjunction with primary packages such as are designated at C in FIGS. 3, 4, and 5, vacant spaces are afforded within the carrier and according to a feature of the invention, the holding aperture 36 is formed adjacent the space designated for example in FIGS. 4 and 5 by the numeral 39 which space thus constitutes convenient finger room.

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The package is particularly secure because the end flaps such as 28 and 32 are slightly shorter than the height of the associated side walls 3 and 4 so that the chimes of the cans C may protrude at the corners of the package as shown for example at CC in FIGS. 1 and 3.

At the other end of the carrier, closure structure comprises end panel 40 foldably joined to lap panel 8 along fold line 41 together with complementary end panel 42 foldably joined along fold line 43 to the end edge of top wall 1. End flap 44 is foldably joined along fold line 45 to an end edge of side wall 4 and is provided with weakened contour lines 46 and 47 while end flap 48 is foldably joined to an end edge 49 of side wall 3 and is provided with weakened contour lines 50 and 51. The end of the carrier comprising end panels 40 and 42 as well as end flaps 44 and 48 is similar to the corresponding structure at the other end of the carrier and a detailed description thereof is not deemed necessary.

Since a carrier constructed according to the invention and as shown in the drawing is well adapted for packaging three rows of articles as is apparent particularly in FIGS. 3, 4 and 5, it is desirable to provide means for insuring that the middle row of articles is not dislodged through the ends of the tubular structure during packaging operations and that the middle row of articles does not impose any undue strain on the end closure structure. To this end keel panel 52 is provided and is foldably joined along fold line 53 to the inner edge of lap panel 6. Keel panel 52 is provided with a plurality of apertures designated by the numerals 54, 55, 56 and 57. With the keel panel 52 disposed vertically as shown for example in FIGS. 3 and 4, a bottom portion of the middle row of cans C is received within the slots 54-57 respectively. Thus the middle row of cans C is secured against dislodgement through the open ends of the package and against the imposition of undue strain on the end closure structure.

The blank as shown in FIG. 2 is well adapted for end to end nesting as will be obvious from an inspection of that figure since the end portion of a blank generally designated by the numeral 58 is configured so as to complement the trailing end of the blank generally designated by the numeral 59. The lower portion of end panels 24 and 40 as viewed in FIG. 2 are in effect taken from that part of the stock material alongside panels 6 and 52 of an adjacent blank. Furthermore the side edges of the blank are generally aligned as is obvious from an inspection of the outer edge 60 of end flap 32 which is substantially aligned with the outer edge 61 of complementary end panel 26 and with the outer edge 62 of end flap 28 as well as the outer edge 24A of end panel 24 so that there is no substantial wastage of material.

While the invention as shown in the drawings and as described herein depicts cans as the primary packages, it will be understood that the invention is not limited to use in connection with cans and can be applied in connection with primary packages other than cans. Fur-

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thermore even though the invention is shown as applied to a group of articles arranged in three rows of four articles each, it is obvious that the invention is not limited to this particular arrangement and may be applied to other rectilinear arrangements as well.

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

1. A wrap around type carrier for a group of articles disposed in side by side relationship and forming a rectilinear arrangement, said carrier comprising generally parallel top and bottom walls interconnected by spaced side walls to form a tubular structure, one of said parallel walls being of composite construction and including a pair of lap panels each being of a width less than the width of said one parallel wall and said lap panels being foldably joined respectively to corresponding edges of said side walls and arranged with their inner edges secured together in overlapping relationship, an end flap secured to each end of each of said side walls and extending transversely inward of the carrier so as partially to close the ends of said tubular structure, an end panel foldably joined to an end edge of only one of said lap panels at each end of said tubular structure and being of a width sufficient to overlap the inner portions of said end flaps at each end of the carrier, and means for securing each of said end panels in flat face contacting relation with the adjacent end flaps.

2. A carrier according to claim 1 wherein a complementary end panel is foldably joined to each end edge of the other of said parallel walls and secured in flat face contacting relation with the adjacent end flaps and in coplanar relation with the adjacent end panel and with its inner edge in close juxtaposition with the inner edge of said end panel and wherein a carrying aperture is formed in one of said end panels and in the associated one of said complementary end panels and where in said carrying aperture coincides at least in part with an inner end portion of one of said end flaps and wherein a bracing flap is struck from said inner end portion of said one end flap.

3. A carrier according to claim 1 wherein one of said lap panels is wider than the other lap panel and wherein said end panels are foldably joined respectively to opposite end edges of said one lap panel.

4. A carrier according to claim 1 wherein a complementary end panel is foldably joined to each end edge of the other of said parallel walls and is of substantially the same width as the associated end panel.

5. A carrier according to claim 1 wherein the width of said parallel walls is an approximate multiple of the transverse dimension of the articles and wherein a keel panel is foldably joined to the inner one of said lap panels and disposed between two rows of articles and wherein holding apertures are formed in said keel panel for respectively receiving parts of the articles in one of said rows of articles so as to secure said one row of articles against dislodgment through the ends of said tubular structure.

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