PACKAGING STRUCTURE AND BLANK
FOR CONTAINER COVER

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Filed: Mar. 12, 1974

Appl. No.: 450,339

Related U.S. Application Data


U.S. Cl. ........... 229/51 TC; 229/51 TS; 229/15;
229/23 R

Int. Cl. ........... B65D 5/54; B65D 5/48

Field of Search ....... 229/51 TC, 51 TS, 51 D,
229/52 B, 15, 23 R

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Primary Examiner—Davis T. Moorhead
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ABSTRACT

A packaging structure, more particularly a beer case
packaging structure having a reusable tray and a dis-
posable sleeve, includes scoring outlining an openable
closure flap for the packaging structure in the top
panel of the structure. A blank for forming a dis-
posable sleeve and having suitable crease and score lines
is provided. The scoring outlining the flap may be pro-
vided by two closely spaced score lines, one formed
through part of the thickness of the blank from one
side and the other formed through the remainder of
the thickness from the other side. The openable clo-
sure flap is hinged about one lateral side edge of the
top panel and includes a tab at its free end positioned
to coincide with a handhole in the structure so that
the packaging structure may be temporarily reclosed.

12 Claims, 5 Drawing Figures
PACKAGING STRUCTURE AND BLANK FOR CONTAINER COVER

REFERENCE TO RELATED APPLICATION


FIELD OF INTENTION

This invention relates to packaging structures and blanks utilisable in such packaging structure.

BACKGROUND OF INVENTION

In U.S. copending application Ser. No. 261,075 filed June 8, 1972, there is described a packaging structure for beer bottles including a substantially rigid, reusable tray and a disposable sleeve constructed of light cardboard, closing the open top of the tray. The sleeve includes panels depending from a top panel which is co-extensive with the open top of the tray, the depending panels extending a distance substantially equal to the height of the upstanding walls of the tray and being in gripping frictional engagement with the outer surface of the upstanding walls of the tray. Access to the beer bottles packaged in the structure is gained through the top panel of the sleeve. Once the top panel is opened, the sleeve remains in association with the tray through the gripping frictional engagement between the abutting walls of the tray and the panels of the sleeve.

The consumer may return the empty beer bottles to the retail outlet in the tray with the cover still attached thereto. In the factory to which the used structure is returned, the sleeve is removed from the tray, and full beer bottles are placed in the tray, followed by the application of a fresh disposable sleeve to provide a new sealed packaging structure. In this way, the tray may be utilized a number of times, with a fresh sleeve closure which normally will bear brand identification markings and the like, being utilized each time.

SUMMARY OF INVENTION

The present invention is directed, in one preferred aspect, to a packaging structure of the above type, especially for bottled beer, which has a particular opening means for the sleeve. In another preferred aspect of the invention, there is provided a blank for use in forming disposable sleeves utilisable in the one preferred aspect of the invention.

In a broad aspect of the present invention, there is provided a packaging structure which includes the one preferred aspect of the invention and which consists of a box-like enclosed container which has a particular opening means for gaining access to items packaged in the structure.

The packaging structure of the invention consists of a cuboid container having a rectangular top panel closing the container, and an openable and temporarily reclosable element constituting a substantial proportion of the top panel. The element extends the whole longitudinal dimension of the top panel and a substantial proportion of the lateral dimension of the top and is hingable about one lateral edge of the top panel.

The openable element is defined by score lines formed in the top panel and, after tearing along the score lines, the resultant flap may be used as a temporary reclosure for the container.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a plan view of a blank for forming a sleeve, in accordance with one embodiment of one preferred aspect of the present invention;

FIG. 2 is a perspective view of a sleeve formed from the blank of FIG. 1;

FIG. 3 is a perspective view of a packaging structure utilizing the sleeve of FIG. 2, with the top opened;

FIG. 4 is a perspective view of the packaging structure of FIG. 3, with the top in temporarily reclosed and locked position; and

FIG. 5 is a sectional view of certain score lines, taken on line 5—5 of FIG. 1.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring first to FIG. 1, an integral blank 10 includes a rectangular center panel 12. Two rectangular side panels 14 and 16 are joined to the longitudinal side edges of the center panel 12 at crease lines 18 and 20 respectively.

To the lateral side edges of the side panel 14 are joined flaps 22 and 24 at crease lines 26 and 28 respectively. Similarly flaps 30 and 32 are joined to the lateral side edges of the side panel 16 at crease lines 34 and 36 respectively.

Two substantially rectangular end panels 38 and 40 are joined to the lateral side edges of the center panel 12 at crease lines 42 and 44 respectively.

The flaps 22, 24, 30 and 32 may be rectangular or have a shaped periphery and generally extend away from the lateral edges of the appropriate side panel a distance up to about half the lateral width of the end panels 38 and 40, that is, up to about half the lateral width of the center panel 12. The periphery of the flap may be shaped to correspond to any scored outline on the end panels 38 and 40.

A first pair of closely spaced-apart score lines 46 is provided in the center panel 12. The score lines 46 include a first part 48 in which they extend from one lateral side edge of the center panel 12, that is, from the crease line 44, parallel and adjacent to one longitudinal side edge of the center panel 12, that is, parallel and adjacent to the crease line 20, towards the other lateral side edge of the center panel 12, that is, towards the crease line 42, substantially the longitudinal dimension of the center panel 12. The first part 48 of the score lines 46 terminates at a position 50 longitudinally spaced from but adjacent to the crease line 44.

A similar second pair of closely spaced-apart score lines 52 is provided in the center panel 12. The score lines 52 include a first part 54 in which they extend from the same lateral side edge of the center panel 12 as the score lines 46, that is, from the crease line 44, parallel and adjacent to the other longitudinal side edge of the center panel 12, that is, parallel and adjacent to the crease line 18, towards the other lateral side edge of the center panel 12, that is, towards the crease line 42, substantially the longitudinal dimension of the center panel 12. The first part 54 terminates at a position 56 longitudinally spaced from but adjacent to the crease line 44. The terminal positions 50 and 56 of the score line parts 48 and 54 are longitudinally spaced from the crease line 44 substantially the same distance.

Each of the score lines 46 and 52 includes a second part 58 and 60, respectively. The pair of score lines 46 in its second part 58 extend with the pair of score lines
in substantially parallel relation, from the terminal position 50 angularly away from the crease line 18 across the crease line 42 and terminates at a position 62 located in the end panel 38.

Similarly, the pair of score lines 52 in its second part 60 extend, with the pair of score lines in substantially parallel relation, from the terminal position 56 angularly away from the crease line 20 across the crease line 42 and terminates at a position 64 located in the end panel 38.

The terminal positions 62 and 64 are longitudinally spaced from the crease line 42 substantially the same distance and are located on the opposite side of the crease line 42 from the terminal positions 50 and 56.

In each pair of score lines 46 and 52, one member of the pair is scored from one side of the panels 12 and 38, with a substantially continuous cut being formed through approximately half the thickness of the material forming the blanket 10. The other member of the pair is scored from the other side of the panels 12 and 38, with a substantially continuous cut being from through approximately half the thickness of the material forming the blanket 10. It is not essential, however, to form the score lines through half the thickness of the blanket 10 and the score lines may be formed in any convenient manner commensurate with the ability of the material of construction of the blanket 10 readily to tear along those lines.

In some instances, the score lines 46 and 52 in the region of the terminal positions 62 and 64 are cut completely through the blanket 10 to assist in commencing the tear along the score lines 46 and 52 during opening of a sleeve formed from the blank.

It is immaterial which member of the pair of score lines is formed from above and which is formed from below the blanket 10. Typically, the member of the pair 46 or 52 nearer the adjacent longitudinal side edge of the center panel 12 is formed from above the blanket 10 while the member remote from the adjacent longitudinal side edge is formed from below the blanket 10, as viewed in FIG. 1, to provide an aesthetic appearance on later opening and temporary closure.

The pairs of score lines 46 and 52 preferably are provided in this manner to ease and assist in tearing thereof during opening of a sleeve formed from the blank. In some instances it may be unnecessary to use a pair of score lines, a single score line, or any convenient construction, being utilized instead.

The material of construction of the blanket 10 generally is then flexible cardboard. Preferably, the cardboard is formed of two or more layers joined together to form a laminate structure, and the pairs of score lines 46 and 52 are cut through, from opposite sides, to the approximate join of two adjacent layers, as may be seen more clearly in FIG. 5. This construction provides excellent tearing characteristics along the score lines.

The spacing apart of the members in the pairs of score lines 46 and 52 may vary widely. The particular values chosen depend on the thickness and nature of the material of construction of the blanket and the depth of the score lines. In determining the spacing apart of the score lines 46 and 52, the primary desire is to ensure that the material of the blanket 10 tears only along the score lines 46 and 52 during opening of a sleeve formed from the blanket 10. Typically, a lateral spacing of about 1/4 to 3/4 inch (about 0.25 to about 1.5 cm) may be used, with a spacing of about 1/4 inch (about 1 cm) being found to be satisfactory for No. 25 paperboard consisting of two layers of material.

The spacing apart of the members of each pair of score lines in their second parts 58 and 60 generally is less than their spacing apart in the first parts 48 and 54, in order to urge precise tearing only along the divergent pairs of score lines in the second parts. Typically, the spacing apart of the members of each pair of score lines in the second parts 58 and 60 is approximately one-half of their spacing in the first parts 48 and 54. Thus, for a spacing of about 3/8 inch (about 1 cm) in the first parts 48 and 54, the members of each pair of score lines in the second parts may be spaced about 3/16 inch (about 0.5 cm).

The terminal positions 62 and 64 correspond to the ends of a straight crease line 66 extending parallel to the crease line 42. The terminal positions 62 and 64 also correspond to the ends of a score line 68. The score line 68 includes a straight line portion 70 which extends parallel to the crease line 66 and is positioned on the end panel 38 spaced from the crease line 42 a further distance than crease line 66. The distance between the score line portion 70 and the crease line 66 depends on the dimension of the handhole of the tray with which the sleeve formed from the blanket 10 is associated.

Further score line portions 72 and 74 complete the score line 68. The later score line portions join the ends of the straight-line portion 70 and the ends of the crease line 66. In the illustrated embodiment, the score line portions 72 and 74 diverge from each other from the crease line 66 to the straight line portion 70, this construction being preferred as will become more apparent hereinafter. It is possible, however, to utilize other conconfigurations of the score line 68.

The score line 68 and the crease line 66 thus define an enclosed area 76 of the end panel 38 of substantially trapezoid form. A further crease line 78, spaced apart from and parallel to the crease line 66 is provided in the enclosed area 76. The spacing apart of the crease lines 76 and 78 depends on the thickness of the material of the tray in the region of its handhole, as will become more apparent below.

A similar enclosed area 80 is provided on the other end panel 40, being defined by a score line 82, of the same form and shape as the score line 68, and a crease line 84, parallel to the crease line 44. Within the enclosed area 80 is a further crease line 86, in the same manner as crease line 78.

The score lines 68 and 82 may be of any desired form. Typically, they comprise relatively long cuts formed through the thickness of the board and relatively short uncut areas between the cuts. The relative dimensions of the cut and uncut areas depend on the strength of the material from which the blanket 10 is formed. Typically, cut areas may range from about 1/8 to 1/2 inch; (about 1 to 4 cm), with 3/32 inch (about 0.25 cm) uncut areas, for No. 25 paperboard.

The end panels 38 and 40 generally are substantially rectangular, as mentioned above. The end panels 38 and 40 may have a very slight taper from the crease lines 42 and 44 to the free longitudinal edge of the end panel. Similarly, the longitudinal edge of each of the flaps 22, 24, 30 and 32 remote from the longitudinal side edges of the center panel may be provided with a slight taper towards its free lateral side edge. These tapers assist in ensuring that the sleeve formed from the
Blank 10 has a snug and gripping fit with the tray in the packaging structure.

Turning now to consideration of FIGS. 2 to 4, there is shown in FIG. 2 a sleeve 100 formed from the blank 10 and suitable for use in a packaging structure. The sleeve 100 includes a top panel 102, constituted by the center panel 12 of the blank 10 and downwardly depending side panels 104 and 106, constituted by the side panels 14 and 16 of the blank 10, and downwardly depending end panels 108 and 110, constituted by the end panels 38 and 40 of the blank 10.

The side panels 104 and 106 are joined to the end panels 108 and 110 by flaps (not shown) which are adhesively affixed to the inner faces of the end panels 108 and 110, the flaps corresponding to the flaps 22, 24, 30 and 32 of the blank 10. In instances where the flaps 22, 24, 30 and 32 may be omitted from the blank 10, the side panels 104 and 106 may be joined to the end panels 108 and 110 in any convenient manner.

An openable and temporarily reclosable member 120 is provided in the top panel 102 whereby access may be gained to items packaged in a packaging structure utilizing a tray and the sleeve 100. The packaging structure aspect of the present invention is described in more detail below with reference to FIGS. 3 and 4.

Score lines 122 and 124 define the lateral extension of the member 120, equivalent to the pairs of score lines 46 and 52 of the blank 10. The score lines 122 and 124 terminate in a handhole outline 126 in the end panel 108, equivalent to the enclosed area 76 of the blank 10. A similar handhole outline 128, equivalent to the enclosed area 80 of the blank 10, is provided in the end panel 110.

It will be seen that the member 120 occupies a substantial proportion of the area of the top panel 102.

When the packaging structure 130 is desired to be carried, the handhole area outlines 126 and 128 are pushed inwardly, the area becoming detached on three sides from the appropriate end panel along score lines 150 and 152. The handhole outline 128, equivalent to score lines 68 and 82 of the blank 10 and are folded back around the upper portion of the adjacent handholes in the end panels of the tray.

This procedure is facilitated by the provision of a crease line 154 equivalent to create line 66 of the blank 10, thereby allowing the handhole area or tab 126 to bend readily inwardly of the appropriate end panel 108. A further crease line 156, equivalent to crease line 78 of the blank 10 is provided to allow the tab 126 to fold back inside the tray 132. An equivalent construction for tab 128 is provided in the end panel 110 with crease lines corresponding to crease lines 84 and 86 of the blank 10, so that the tab 128 may be folded inwardly of the handhole (not shown) in the other end wall of the tray 132. It will be apparent, therefore, that the preferred lateral spacing of the crease lines 154 and 156 depends on the thickness of the end walls of the tray 132 in the region of the handholes.

The positioning of the tabs 126 and 128 and of the corresponding handholes in the tray 132 is chosen so that the depth of the tabs 126 and 128 does not exceed the distance from the top of the handhole to the top panel 102. In this way, when the tabs 126 and 128 are pushed inside the respective handholes and bent back, the tabs 126 and 128 do not foul the inner surface of the top panel 102. Further, the depth of the tabs chosen so that they may engage bottles in the case 132 when positioned as illustrated in FIG. 4 and hence assist in providing a temporary locking of the member 120 and a permanent opening in the end wall of each handhole.

When the tab 126 has been released from the end panel 108, drawing of the tab 126 upwardly and rearwardly of the structure 100 causes the member 120 to detach from the remainder of the end panel 108 and the top panel 102 along the score lines 122 and 124.
thereby allowing access to the beer bottles 136 in the case 132, as may be seen in FIG. 3.

The now-detached member 120, in the form of a flap, is hinged about the crease line 160 at the opposite end of the structure and access to all the products in the tray 132 may readily be had. The hinging of the member 120 at one lateral edge of the sleeve 100 rather than at the longitudinal edge results in a member 120 which has sufficient weight to reclose the top when released, the member 120 being relockable by use of the tab 126 as may be seen from FIG. 4. The outwardly divergent nature of the lateral edges of the tab 126 provides a positive lock with the handhole of the tray 132.

Further, once the member 120 is hinged past the vertical position, it may fall under its own weight to a completely open position. If desired, the member 120 may be curled underneath the structure.

Since the side and end panels 104, 106, 108 and 110 are in gripping frictional engagement with the respective walls of the tray 132, the sleeve 110 remains in association with the tray 132 and is not detached therefrom. It is only upon return of the empty bottles and used structure to the factory that the used sleeve is removed and a fresh sleeve 100 is applied to the tray 132, after the positioning of full beer bottles therein, to provide a new sealed package.

As may be seen in FIG. 4, the end wall 142 may be provided with a shallow depression 158 extending downwardly from the handhole 146. A similar depression (not shown) is provided in the other end wall of the tray 132. The presence of these depressions results in the end panels 108 and 110 of the sleeve 100 being spaced from said end walls in this region. In this way, the insertion of fingers of stripping devices under the surface of the material of the sleeve is facilitated and hence the later operation of stripping the sleeve 100 from the tray when the structure 130 is returned is improved.

The provision of a flap member 120 scored from a sleeve 100 to give an originally-sealed structure which is readily openable by tearing along the score lines to gain access to the contents of the structure and which is also temporarily reclosable has been described above with specific reference to a packaging structure 130 including a disposable sleeve 100 and a reusable tray 132. However, the present invention is not restricted to such a packaging structure and, as indicated above, in one broad aspect of the invention, the flap member 120 may be provided with any other convenient packaging structure.

Modifications are possible within the scope of the invention.

What we claim is:

1. A packaging structure comprising a substantially rigid tray including a bottom wall, side walls and end walls extending upwardly from said bottom wall and terminating in an open top, a disposable sleeve constructed of light cardboard closing said open top, said sleeve including a top panel extending coextensively with the open top of said tray and having first and second longitudinal side edges and first and second lateral side edges, side panels extending downwardly from said top panel in engagement with the outer surface of the side walls of said tray a distance substantially equal to the height of said side walls, end panels extending downwardly from said top panel in engagement with the outer surface of the end walls of said tray a distance substantially equal to the height of said end walls, said side and end panels being joined together, each of said end walls of said tray having a slot formed therein of longer dimension extending transversely of said end wall, said tray including a divider means dividing the space therein into a plurality of beverage bottle containing compartments, and said side walls and end walls extending upwardly a distance substantially equal to the height of said bottles, said top panel of said sleeve engaging the tops of said bottles, said sleeve including first and second tab outlines in said end panels corresponding substantially to the shape of said slots, the portion of one of said tab outlines corresponding to the longitudinal periphery of the slot closest to the join of said top panel and the appropriate side panel being in the form of a first crease line and the remainder of said one tab outline being constituted by a first score line, the portion of the other of said tab outlines corresponding to the longitudinal periphery of the slot closest to the join of the top panel and the appropriate side panel being in the form of a second crease line and the remainder of said other tab outline being constituted by a second score line, an openable closure element formed integral with said sleeve and being defined by first and second laterally spaced-apart scorings formed in said sleeve, each of said scorings extending from the one of said lateral side edges joining the end panel containing said one tab outline across said top panel towards the other of said lateral side edges, at least a substantial length of one of said scorings extending adjacent and substantially parallel to one of said longitudinal side edges and at least a substantial length of the other of said scorings extending adjacent and substantially parallel to the other of said longitudinal side edges, said scorings terminating one at each end of said second score line in the one of said end panels containing said other tab outline and attached to said top panel at said other lateral side edge, whereby, upon severing said second score line and pulling on said other tab the openable closure element is detached from the remainder of said sleeve along said first and second scorings, said openable closure element thereby being hinged about said one lateral side edge of said top panel.

2. The packaging structure of claim 1 wherein said first scoring is constituted by a first pair of score lines in said top panel extending in closely spaced-apart relation from said one lateral side edge of said top panel substantially parallel to but spaced from said one of said longitudinal side edges of said top panel to a first position spaced longitudinally inwardly from said other lateral side edge of said top panel, and said second scoring is constituted by a second pair of score lines in said top panel extending in closely spaced-apart relation from said one lateral side edge of said top panel substantially parallel and adjacent to but spaced from the other of said longitudinal side edges of said top panels to a second position spaced longitudinally inwardly from said other lateral side edge of said top panel, said first and second longitudinally inwardly spaced positions being substantially the same longitudinal distance from said other lateral side edge,
each of said first and second pairs of score lines being provided with one score line of the pair being formed from above said top panel and the other score line of the pair being formed from below said top panel,
said first pair of score lines continuing from said first position in parallel spaced-apart relation angularly away from said one longitudinal side edge of said center panel to the other lateral side edge and continuing from the join of said top panel and the other end panel across said end panel to one end of said second score line,
said second pair of score lines continuing from said second position in spaced-apart parallel relation angularly away from said other longitudinal side edge of said top panel to the other lateral side edge and continuing from said join across said end panel to the other end of said second score line.

3. The packaging structure of claim 2 wherein the portions of said first and second pairs of score lines adjacent said ends of said second score line are provided completely through said end panel.

4. The packaging structure of claim 2 wherein each of said one tab outline includes a third crease line extending substantially parallel to said first crease line and said other tab outline includes a fourth crease line extending parallel to said second crease line, said first and third crease lines and said second and fourth crease lines being spaced-apart therefrom a distance substantially equivalent to the thickness of said end walls of said tray at the upper periphery of said slot.

5. The packaging structure of claim 1 wherein said other tab outline is substantially trapezoid with said second crease line corresponding in length to that of the upper periphery of the adjacent slot and the second score line includes a straight line portion substantially parallel to said second crease line and having a length greater than the length of the lower periphery of said adjacent slot, and portions joining the ends of the straight line portion and said second crease line, whereby when said openable closure element has been opened said tab may be inserted in temporary locking engagement with said adjacent slot thereby achieving reclosure of said structure.

6. The packaging structure of claim 5 wherein said one tab outline is the same as said other tab outline.

7. The packaging structure of claim 2 wherein said sleeve is formed of a laminate of at least two layers of thin cardboard and each of said first and second pairs of score lines is provided with one score line of the pair being formed from above said top panel through the thickness of at least one but not all of said layers and the other score line of the pair is formed from below said center panel through the thickness of the remainder of said layers, whereby the score lines terminate at the interface of two adjacent layers.

8. The structure of claim 1 wherein said tray is constructed of synthetic polymeric material.

9. The structure of claim 1 wherein each of said side and end walls has a substantially smooth outer face and said side and end panels grip said side walls and end walls.

10. The structure of claim 9 wherein the end walls adjacent said handholes have a downwardly extending depression, whereby said end panels are spaced from said end walls in this region.

11. The structure of claim 1 wherein said side and end panels of said sleeve are integral with said top panel.

12. A substantially rigid tray including a bottom wall, side walls and end walls extending upwardly from said bottom wall, each of said end walls of said tray having an elongate slot formed therein, said slot having its larger dimension transverse of said end wall, and a depression formed in the outer surface of each of said end walls and extending downwardly from each of said slots towards said bottom wall.

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