Oct. 15, 1963 M. W. KUCHENBECKER 3,107,038

READY OPENING DISPENSING CONTAINER

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Fig. 1

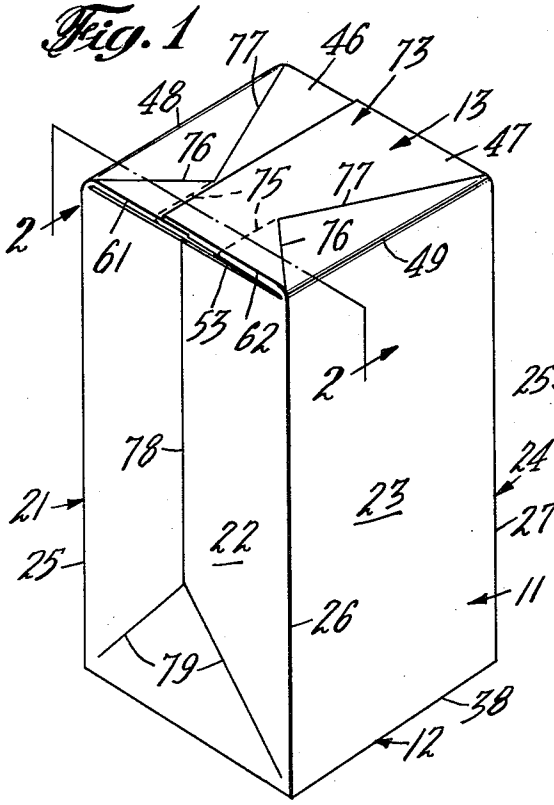


Fig. 4

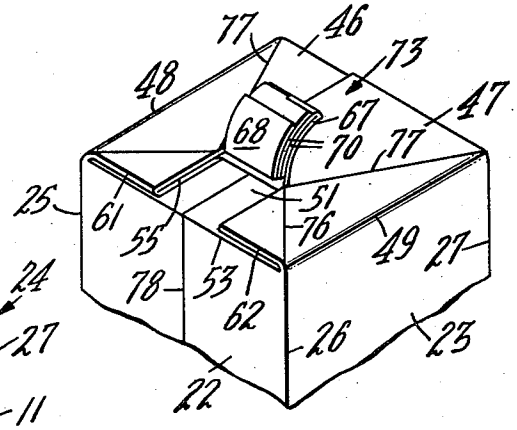


Fig. 5

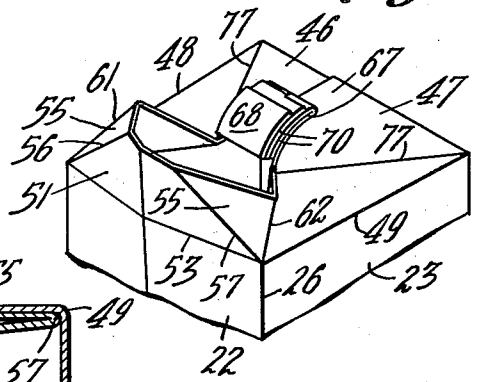


Fig. 2

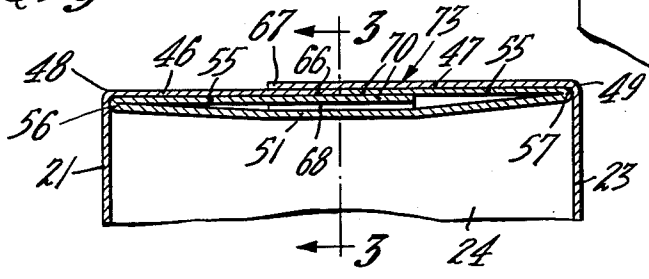
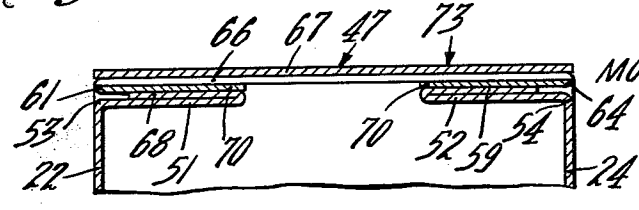


Fig. 3



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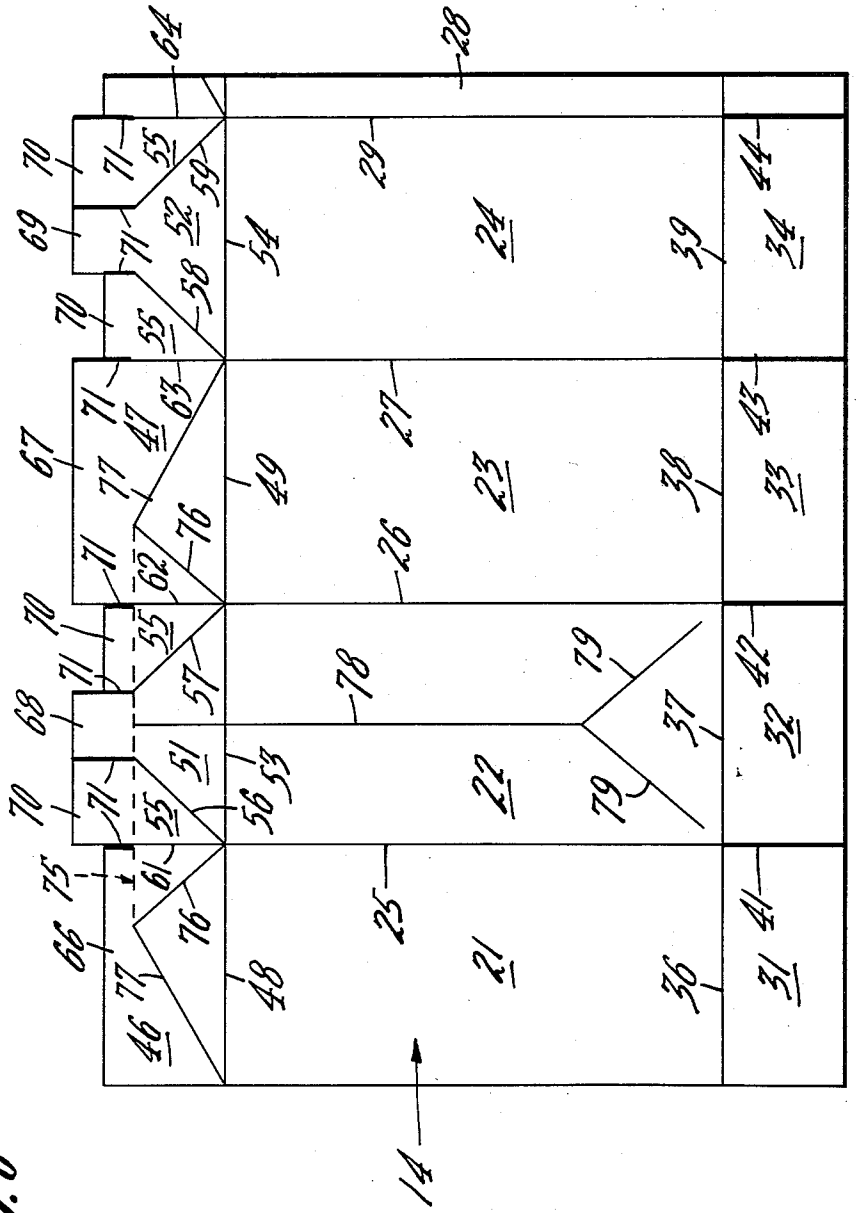


Fig. 6

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READY OPENING DISPENSING CONTAINER

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6 Claims. (Cl. 229—17)

The present invention relates to a self-sustaining carton or container of fibrous material or the like for the packaging and dispensing of flowable products such as liquids and granulated substances and has particular reference to a flat unobstructed top end closure which includes a sealed-in sanitarily protected dispensing spout.

The container is readily made from paperboard preferably coated with polyethylene or other suitable substances to provide for liquid leak-proofness and may be produced from a unitary blank of such material. The top closure of the container preferably comprises integral panels which are interfolded in such a manner as to produce a leak-proof flat top which may be partially opened to uncover and release the dispensing spout for use.

An object of the invention is the provision in a self-sustaining fibre container of a flat unobstructed top closure which is leak-proof and which is readily opened and which produces rigidity in the container and permits of stacking such containers one on top of the other.

Another object is the provision in such a container of a dispensing spout which is formed from parts of the top closure and which is sealed-in so as to sanitarily protect the pouring surfaces of the spout until released for use by the consumer.

Another object is the provision in such a container of a built-in dispensing spout which can readily be reclosed.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

FIGURE 1 is a perspective view of a sealed container embodying the instant invention;

FIG. 2 is a sectional view of the top end of the container as taken substantially along a plane indicated by the lines 2—2 in FIG. 1;

FIG. 3 is a sectional view taken substantially along the lines 3—3 in FIG. 2;

FIG. 4 is a perspective view of the top end of the container showing the top closure partially opened;

FIG. 5 is a perspective view similar to FIG. 4, showing the top closure fully open and the dispensing spout reformed into dispensing position; and

FIG. 6 is a plan view of a unitary blank from which the container and its top and bottom closures are made.

As a preferred and exemplary embodiment of the instant invention the drawings illustrate a substantially rectangular container comprising a body 11 (FIG. 1), a bottom 12, and a flat top closure 13 made from a single paperboard blank 14 (FIG. 6) of generally rectangular configuration.

The blank 14 (FIG. 6) is suitably cut and scored or creased to divide it into a number of walls, panels and tab portions. Four main side walls 21, 22, 23, 24 are respectively separated from each other and hingedly connected

together along crease lines 25, 26, 27. A glue flap 28 is hingedly connected along one side edge of wall 24 by a crease line 29.

The bottom 12 for the container may be formed in any suitable manner. By way of example, the drawing of the blank shows four bottom closure flaps 31, 32, 33, 34 respectively connected to the container side walls 21, 22, 23, 24 along crease lines 36, 37, 38, 39. These bottom closure flaps are separated by cut lines 41, 42, 43, 44.

The top end closure 13 for the container comprises a pair of substantially rectangular outer panels 46, 47 hingedly connected to the respective side walls 21, 23, along respective hinge crease lines 48, 49, a pair of trapezoidal shaped inner panels 51, 52 hingedly connected to the respective side walls 22, 24 along respective hinge crease lines 53, 54 and two pairs of triangular shaped wing panels 55 hingedly connected to the trapezoidal shaped inner panels 51, 52 along hinge crease lines 56, 57, 58, 59 and also hingedly connected to the outer panels 46, 47 and the glue flap 28 along respective hinge crease lines 61, 62, 63, 64. Each of the panels, i.e., the outer panels 46, 47, the inner panels 51, 52, and the wing panels 55 are provided with respective end seam tabs 66, 67, 68, 69, 70 which are connected to the respective panels but which are separated from each other by cut lines 71.

In order to produce the container II (FIG. 1) from such a blank 14, the blank is first folded along the side wall crease lines 25, 26, 27, 28, to form the rectangular body, the four side walls being tied together by the glue flap 28 which is bonded by a suitable adhesive to the inner face of the side wall 21 along its free edge. The four bottom flaps 31, 32, 33, 34 and the adjacent portion of the glue flap 28 are then folded in the usual manner into overlapping position perpendicular to the side walls, along their respective crease lines 36, 37, 38, 39 and are adhesively secured together to form the bottom 12 of the container. This is a conventional bottom construction.

In this open top end condition with the panels 46, 47, 51, 52, 55 standing upright, the resulting container is ready for filling. After filling the filled container is closed and sealed by pressing the top closure panels inwardly. The inner closure tabs 68, 69 are first bent outwardly into a position flat against the trapezoidal shaped inner closure panels 51, 52 but are not secured to the panels. The inner panels 51, 52 are then pressed inwardly into a horizontal position over the open end of the container so that both panels are substantially in the same plane. This action folds the triangular wing panels 55 along their hinge crease lines 56, 57, 58, 59 and simultaneously draws the outer panels 46, 47 downwardly and inwardly with the result that the triangular wing panels assume a horizontal position flat against and in face-to-face engagement with the inner closure panels 51, 52 in a plane parallel to and contiguous to the plane of the inner panels, the tabs 70 of the triangular panels taking an overlapping position relative to each other in the wing plane and in overlapping relation to the tabs 68, 69 of the inner closure panels as shown in FIGS. 2 and 3.

In a similar manner, the outer closure panels 46, 47 assume a horizontal position flat against and in face-to-face engagement with the triangular wing panels 55 in a plane parallel to and overlappingly contiguous to the plane of the wing panels, the tabs 66, 67 of the outer panels taking an overlapping position relative to each other in

the outer panel plane and in overlapping relation to the wing tabs 70 as shown in FIGS. 2 and 3.

In this overlapping relation of the tabs 66, 67, 68, 69, 70 they are bonded together with a suitable adhesive to produce a permanently secured together flat lap side seam 73 (FIGS. 1, 2 and 3) which extends transversely of the inner closure panels 51, 52 and completely across the top of the closure to seal the container as shown in FIG. 1. In such an end seam, the tabs of the various panels are distributed in the various planes of the panels and thereby results in a flat unobstructed top for the container so that like containers may be readily stacked one on top of the other. With the inner panel tabs 68, 69 secured in place under and forming a part of the end seam, leakage of the container contents along the inner edges of the inner panels is completely eliminated.

The built-in pouring spout herein referred to includes the inner panel 51, its adjacently disposed wing panels 55 and adjacent portions of the outer panels 46, 47.

In order to open the container and release the pouring spout for use, it is merely necessary to tear open the end of the seam 73 adjacent the inner panel 51 as shown in FIG. 4. To facilitate this tearing action, the tab 68 of the inner panel 51 (see FIG. 6), the two tabs 70 of the two adjacent triangular wing panels 55, and the adjacent portions of the tabs 66, 67, of the outer panels 46, 47 are all connected to their respective panels by a scored line or line of weakness 75 (FIG. 6). In the finished closure, the portions of this line of weakness 75 in the wing panels 55 and the outer panels 46, 47 are disposed one above the other in the planes of the panels and in coincidence with each other along the two outer edges of the tab 68. These coincidental and spaced apart portions of the line of weakness 75, together with the portion extending across the tab 68, provide a ready means for tearing the end seam 73 endwise, transversely of the inner panel 51 and along the wing panels 55 to sever these panels 51, 55 and the adjacent portions of the outer panels 46, 47 from their tabs 66, 67, 68, 70 thus leaving the tabs secured together in the end seam 75.

The end seam 73 is torn back to a position just beyond the inner edge of the inner panel 51 as shown in FIG. 4, leaving the remainder of the end seam undisturbed and still intact. With this portion of the seam torn open, the wing panels 55 and the adjacent portions of outer panels 46, 47 may be raised and hinged back against the outer panels. This hinging action is facilitated by a crease line 76 in each of the outer panels 46, 47, the crease line being located in the panels in substantial coincidence with the hinge crease lines 56, 57 of the wing panels 55. The hinging action of the wing panels 55 fully uncovers the inner panel 51 and in effect causes the inner panel 51 to snap up out of its horizontal position into a spout forming position, which upon release of the wing panels expands into a full open spout as shown in FIG. 5.

Formation of the spout is facilitated by crease lines in the outer panels 46, 47, the inner panel 51 and the container side wall 22. In the outer panels 46, 47 an angularly disposed crease line 77 extending from the terminal ends of the line of weakness 75 to the outer corners of the top closure as shown in FIG. 1 is provided to facilitate upward flexing of the outer panels. In a similar manner a crease line 78 in the middle of the side wall 22 and extending up into and across the inner panel 51 provides for flexing of the side wall and the inner panel to produce a long trough-like or sloping spout formation. The lower end of the crease line 78 merges with a pair of diverging crease lines 79 to assist in the flexing of the side wall 22.

After a dispensing operation the spout may be folded back into its original position as shown in FIG. 4 and the partially torn off end seam 73 pressed down over the spout to temporarily reclose the container.

This flat construction of the top closure imparts considerable rigidity to the upper portion of the container as a whole so that when the spout is fully open as in dispensing position, the flexing of the body side wall 22 includes this wall as a portion of the spout and changes the body from a rectangular shape to a generally trapezoidal shape and thereby provides for better gripping of the container during the dispensing operation. With this increased holding feature it has been found that the usual tendency of the container to slip out of the user's hand is practically eliminated.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A top end closure for a self-sustaining tubular container having a body portion defined by four side walls and including a built-in pouring spout, said top end closure comprising a pair of planarly disposed outer closure panels extending from a pair of oppositely disposed side walls, a pair of planarly disposed inner closure panels extending from the remaining pair of oppositely disposed side walls, said inner closure panels being disposed in a plane substantially parallel with and contiguous to said outer closure panels, two pairs of planarly disposed triangular wing panels interposed between and in face-to-face engagement with said outer closure panels and said inner closure panels, each pair of said wing panels connecting one of said inner closure panels to said outer closure panels, tab portions extending from each of said panels including first tab portions connected to said inner closure panels along a straight connection disposed transverse to said first mentioned pair of oppositely disposed side walls, said wing panels in a pair of wing panels being spaced apart a distance substantially equal to the length of said straight connection, one wing panel of each of said pairs of wing panels being provided with a long tab portion and the other thereof being provided with a short tab portion, one of said outer closure panels being provided with a long tab portion and the other of said outer closure panels being provided with a short tab portion, said long and short tab portions of said outer closure panels and said wing panels being secured together to form a flat multi-layer seam with the long tab portion on said one outer closure panel and the long tab portions on said wing panels in overlapping relation and said short tab portions on said other outer closure panel and said short tab portions on said wing panels being disposed in abutting relation and interposed between the long tab portions to produce an interlocked butt and lap seam, said first tab portions being folded back upon said inner closure panels beneath said butt and lap seam and being secured to said butt and lap seam to form a part thereof and produce a sealed flat unobstructed top for said container, one of said inner closure panels, the adjacent wing panels and adjacent portions of the outer closure panels comprising a potential pouring spout for said container, and tear means in said one inner closure panel and said adjacently disposed wing panels and outer closure panel portions for tearing said seam endwise transversely of said one inner closure panel to release said one inner closure panel and its adjacently disposed wing panels and outer closure panel portions for formation into said pouring spout.

2. A top end closure of the character defined in claim 1 wherein said tear means connects said one inner closure panel and said adjacently disposed outer panels and wing panels to said tab portions extending from said panels.

3. A top end closure of the character defined in claim 1 wherein said one inner closure panel is of trapezoidal configuration.

4. A top end closure of the character defined in claim 1 wherein said first tab portions extending from said inner closure panels are disposed in face-to-face engagement with said inner closure panels.

5. A top end closure of the character defined in claim 1 wherein the tab portions extending from said inner closure panels and said wing panels at one end of said end seam are separated from the tab portions of said panels at the opposite end of said seam.

6. A top end closure of the character defined in claim 1 wherein there is provided angularly disposed crease lines in said outer closure panels to facilitate flexing of said outer closure panels.

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