

March 1, 1966

J. D. RIDGEWAY, JR
EASY-OPENING CONTAINER

3,237,841

Filed July 16, 1963

3 Sheets-Sheet 1

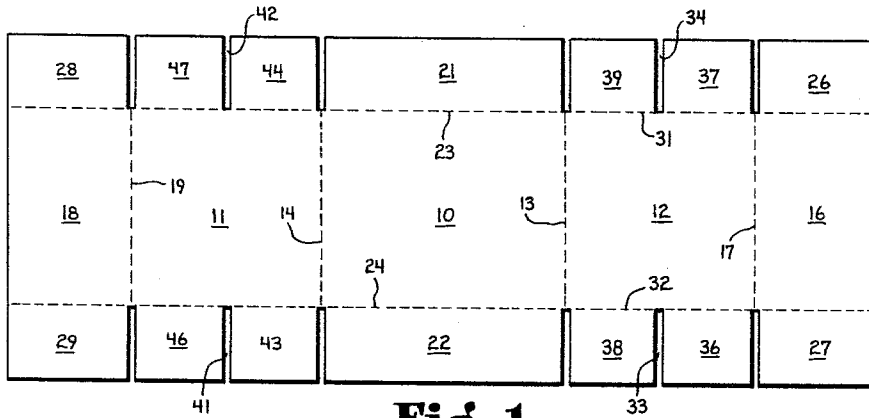


Fig. 1.

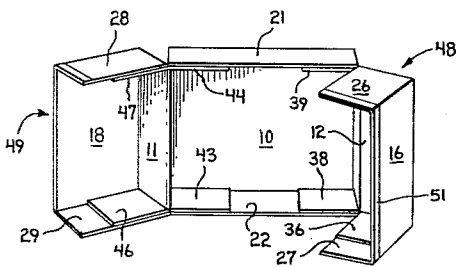


Fig. 2.

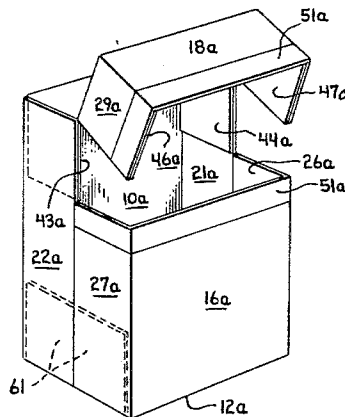


Fig. 3.

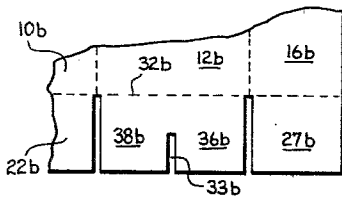


Fig. 4.

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3 Sheets-Sheet 2

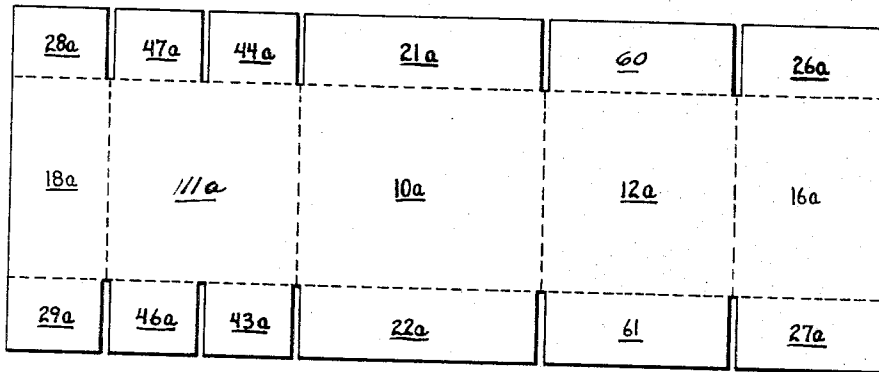


Fig. 3A.

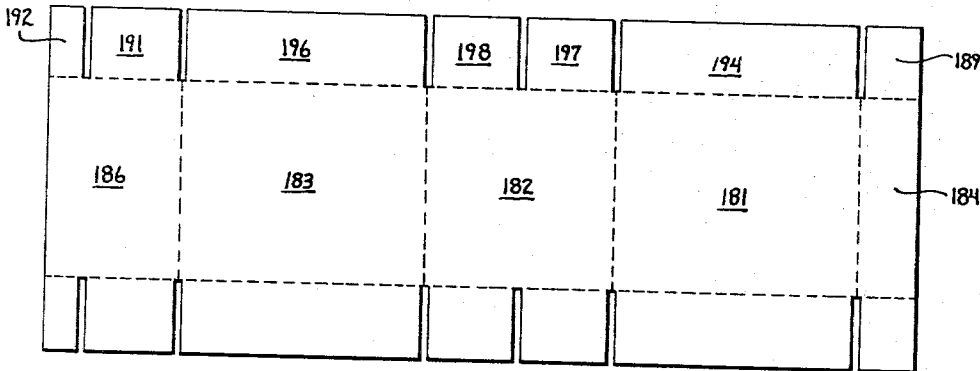


Fig. 7A.

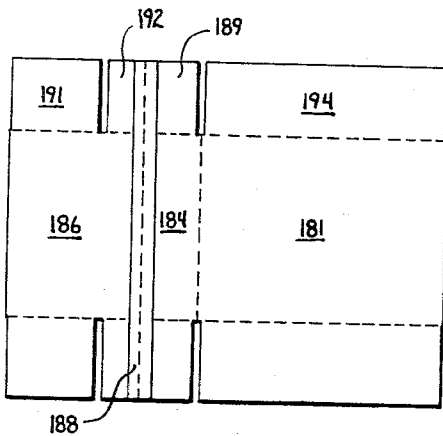


Fig. 7B.

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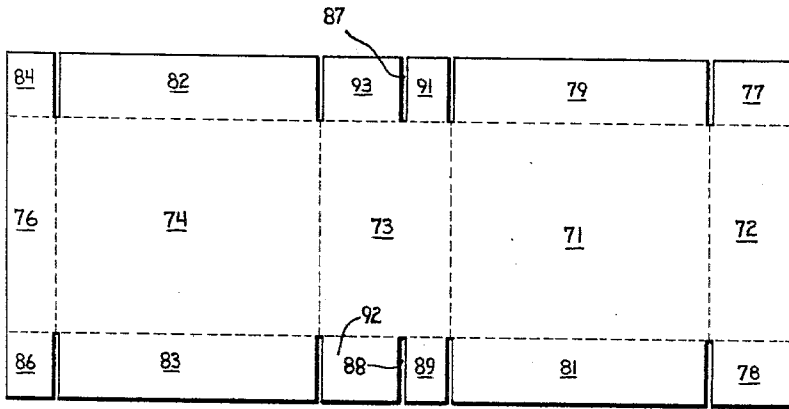


Fig. 5.

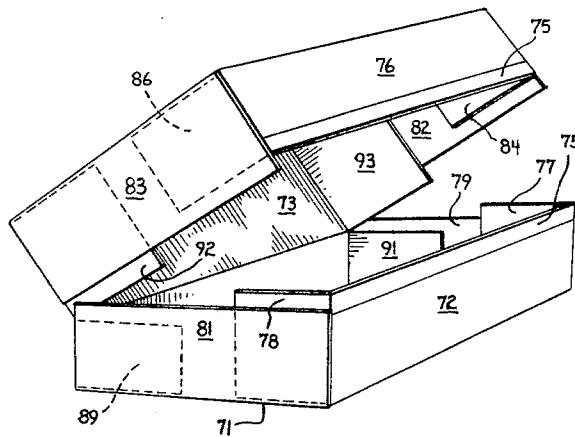


Fig. 6.

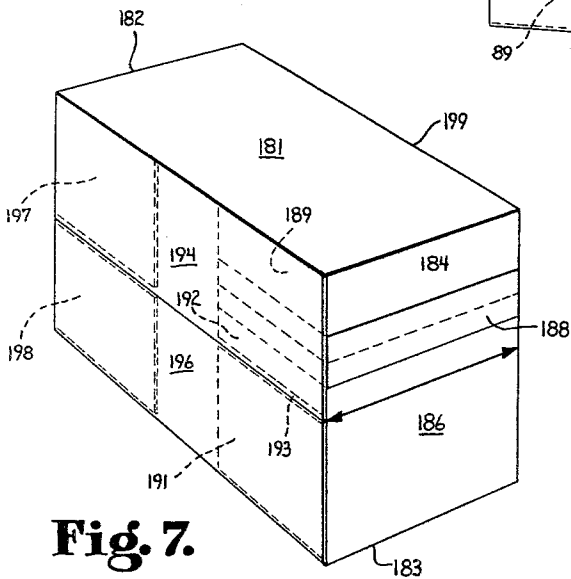


Fig. 7.

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3,237,841

EASY-OPENING CONTAINER

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3 Claims. (Cl. 229-44)

This invention relates generally to containers, formed of corrugated board for example, adapted for transport, storage or display of articles of commerce and in particular to a container which can be conveniently opened for removal, inspection or display of the container contents.

Easy-opening features on containers, such as corrugated board boxes, are becoming increasingly desirable because of the increased price-marking efficiency (in the case of grocery items, for example), ease of handling and contents inspection, product display and other conveniences. Such features are not unknown on containers but these have, in the past, required the use of special tapes, strings, flap printing, etc. Often, cutting along indicated lines was required and where the cut was to be made through varying layers of corrugated board, product damage by the case knife used in the cutting operation occurred not infrequently.

Containers made according to the present invention are characterized by a slotting or dividing of certain of the end flaps into two end flap sections so that the container can be opened by swinging away segments of the container to form a display tray or to provide access for price marking two tiers of products. One or more quadrants of the container can be swung open permitting inspection of the product in the container (in the case of an appliance, for example) without removing it from the container, and the container may be reclosed for storage or delivery. The containers permit a retailer or user to remove items and reclose the containers while stacked without moving other boxes in the stack.

The primary object of the present invention is to provide a container which can be easily and conveniently opened to provide access to or display of the container contents.

A further object of the present invention is to provide a container having easy-opening features not requiring use of knives for cutting of the container or tape and, particularly, requiring no cutting through varying layers of the material from which the container is made.

These and other objects will become apparent as the description proceeds with reference to the accompanying drawings in which:

FIG. 1 is a top plan view of a blank from which a container, embodying the present invention, may be formed.

FIG. 2 is a perspective view showing a container formed from the blank of FIG. 1 and shown opened.

FIG. 3 is a perspective view of a modified form of container embodying the present invention.

FIG. 3A is a top plan view of a blank from which the container of FIG. 3 is formed.

FIG. 4 is a fragmentary top plan view of a portion of a container blank illustrating a modified form of the blank.

FIG. 5 is a top plan view of a blank from which a further modified form of container embodying the present invention may be set up.

FIG. 6 is a perspective view of a container formed from the blank illustrated in FIG. 5 and shown in partially open condition.

FIG. 7 is a perspective view of a modified form of container embodying the present invention and shown closed.

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FIG. 7A is a top plan view of a blank from which the container of FIG. 7 is formed.

FIG. 7B is a top plan view of the blank of FIG. 7A at an intermediate stage in its transformation into the container of FIG. 7.

Referring initially to FIGS. 1 and 2, the blank from which the container of FIG. 2 is formed includes a bottom panel 10 and side panels 11 and 12 which extend from each side margin of the bottom panel 10 as defined by the score lines 13 and 14. A top panel 16 extends from the margin of the side panel 12 as defined by the score line 17, and similarly a top panel 18 extends from the side margin opposite the score line 14 of the side panel 11, the junction between the panels 11 and 18 being defined by the score line 19. The widths of the top panels 16 and 18, individually, are approximately one-half of the width of the bottom panel 10 so that when the container is set up the top panels will meet in edge-to-edge abutting relation over the bottom panel 10.

The bottom panel 10 has end flaps 21 and 22 extending from its end margins defined by the score lines 23 and 24. Top panel 16 has end flaps 26 and 27 extending from its end margins, as does the top panel 18, the end flaps of the panel 18 being identified at 28 and 29.

The side panel 12 has end flaps extending from its end margins, defined by the score lines 31 and 32 and these end flaps are provided a longitudinal division by means of slots 33 and 34, the slots dividing the end flaps into side panel end flap sections 36 and 37 adjacent the top panel end flaps 27 and 26 respectively. The slots 33 and 34 further establish additional side panel end flap sections 38 and 39 adjacent the bottom panel end flaps 22 and 21 respectively.

The end flaps for the side panel 11 are similarly divided by slots 41 and 42 into side panel end flap sections 43, 44, 46, and 47.

The container is set up by folding the blank on score lines 19 and 13 or on score lines 14 and 17 so that the panels 16 and 18 abutt at their free margins. The manufacturer's joint is then completed by applying tape 51 along the margin of elements 28, 18, and 29 which correspondingly abutt the margins of elements 26, 16 and 27. The container may then be squared up, loaded, and the flaps are shut and fastened, as by gluing, where they overlap. When the container is closed, it will be understood that the container quadrants identified generally at 48 and 49 in FIG. 2 are closed over the bottom panel 10 with the marginal edges of the top panels 16 and 18 and of the adjacent top panel end flaps in marginal abutting relation and with the joint sealed by tape 51. When the container is to be opened, the tape 51 is cut, ripped or pulled off and the quadrants 48 and 49 swung outwardly thereby folding the side panels 11 and 12 upon themselves on a line extending between the inner ends of the slots 41 and 42 in the case of the panel 11 and upon a line extending between the inner ends of the slots 33 and 34 with regard to the side panel 12. The quadrants separate from the base tray along the slots 33, 34, 41, and 42. It will be evident that the container, in fully open condition, can be utilized as a shelf-display carton since half the contents of the container can be made to swing with the two quadrants of the box as it is opened. While the terms "bottom panel," "side panel," and "top panel" have been applied to certain of the components of the container blank and will be utilized in describing subsequent modifications to the structure just described, this designation is used merely to differentiate one panel from the other in the description and should not be construed as limiting either the shape or position which the container must assume.

A modified form of the container is shown in FIG. 3 and this form is particularly adapted to the enclosing of relatively large appliances or the like. The structure is such that an upper segment of the container can be swung away to permit inspection or display of the container contents. In FIG. 3 panels and flaps having analogous components in the structure of FIGS. 1 and 2 are given the same reference numerals as in FIGS. 1 and 2 but with the suffix "a." From FIG. 3 it will be evident that the primary difference in this structure over that of FIGS. 1 and 2 is that the panel 16a and panel 18a are not equal in width, however, their total width is substantially equal to the width of the bottom panel 10a. The junction of the two top panels thus does not occur at the center of the container. The marginally abutting junction of the panels 16a and 18a are taped as indicated at 51a. The end flap sections 43a, 46a, and 44a, 47a extending from the side panel 11a are divided by a slot analogous to the slots 33 and 34 of FIG. 1 and these permit the segment of the container to be swung back as illustrated in FIG. 3. The end flap of the side panel 12a (upon which the container is resting as shown in FIG. 3) are not slotted and there are no counterparts in FIG. 3 for the slots 41 and 42 of FIG. 1. The end flaps for the side panel 12a are indicated at 61 and 60 in FIG. 3. As previously mentioned with regard to FIG. 2, when the container is to be opened, that is, when the upper segment of the container is to be swung away as shown in FIG. 3, the tape 51a is cut, ripped or pulled off as indicated.

Referring to FIG. 4, a portion of a container blank is shown which is similar to that of FIG. 1 and illustrates that the slot forming the side panel sections need not extend for the full length of the side panel end flaps but might terminate at some intermediate point. With this arrangement, when the carton is opened in the same fashion as described with reference to the container structure of FIGS. 2 and 3, a tear will occur over the unslotted end flap portion. In FIG. 4, panels having identical counterparts in FIG. 1 are given the same reference numerals as in FIG. 1 but with the suffix "b." It will be noted that the slot 33b extends only partly through the length of the end flap making up the flap sections 36b and 38b. As previously mentioned, when a container formed from the blank of FIG. 4 is opened the slot 33b will be enlarged by tearing to the score line 32b. The features of the invention can thus be obtained in a structure in which the slots forming the end flap sections do not extend the full length of the end flap sections.

Referring to FIGS. 5 and 6, a further modified form of the invention will now be described. FIG. 5 illustrates the blank from which the container of FIG. 6 is set up. The blank includes a bottom panel 71 and a first side panel 72 extending from one side margin of the bottom panel. A second side panel 73 extends from the opposite side margin of the bottom panel 71 and extending from the side margin of the second side panel 73 is a top panel 74. A third side panel 76 extends from the margin of the top panel 74 which is opposite the junction of panel 74 and the side panel 73. The side panels 72 and 76 are unequal in width but have a combined width substantially equal to the width of the second side panel 73.

Side panel 72 has end flaps 77 and 78 extending from its end margins and the bottom panel 71 also has end flaps 79 and 81 extending from its end margins. The top panel 74 and the third side panel 76 also have end flaps extending from their end margins as indicated at 82, 83, 84 and 86. Each of the end flaps of the second side panel 73 are slotted as indicated at 87 and 88 to divide the end flap into first end flap sections 89 and 91 and second end flap sections 92 and 93. The first end flap sections 89 and 91 have a width substantially equal to the width of the third side panel end flaps 86 and

84. The second end flap sections 92 and 93 have a width substantially equal to the width of the end flaps 77 and 78.

As previously described with reference to FIG. 1, the container blank is folded along two transverse score lines so that elements 84, 76 and 86 have their free margins abutting the free margins of elements 77, 72 and 78, respectively. The manufacturer's joint is completed by applying tape 75 to these abutting marginal areas. The container is then squared, loaded and the flaps closed and fastened, as by gluing, where they overlap.

As may be seen in FIG. 6, when the container is to be opened the tape 75 along the marginal edge abutting members referred to above is cut, ripped or pulled off and the side panel 73 is folded outwardly upon itself along a line extending between the slots 87 and 88. As will be evident from FIG. 6, because of the off-center placement of the slots 87 and 88 in their corresponding end flaps, the line of separation between the end flap sections 89 and 92, for example, is not in register with the line of division between the end flaps 81 and 83 so that, when closed, the container is stronger particularly with regard to its ability to resist end thrusts. The easy opening features described with reference to the containers of FIGS. 2 and 3 are, of course, retained in this structure of FIG. 6.

FIG. 7 shows a modified form of a construction in which the manufacturer's joint or taped panel junction does not occur at the center of the container, that is, does not coincide with the slots forming the end flap sections. The container of FIG. 7 has a top panel 181, an end panel 182, and a bottom panel 183. The end panel opposite the end panel 182 is formed by two sections 184 and 186 which meet in marginal abutting relation to form the manufacturer's joint and this is sealed by means of tape 188 as shown in FIG. 7B. The end panel section 184 has an end flap 189 extending therefrom and the end panel section 186 has an end flap extending from its side margin which is separated into end flap sections 191 and 192 by the slot 193. The tape 188, forming the manufacturer's joint, extends over the abutting margins of flaps 189 and flap section 192. It will be understood, while not visible in FIG. 7, the opposite side of the end panel sections 184 and 186 have end flaps extending therefrom which are duplicates of the flaps and flap sections 189, 191 and 192, the corresponding flap and flap section being sealed by tape 188. The end flaps 194 and 196, extending from the margins of the side panels 181 and 183 respectively, are, of course, glued, stapled, or otherwise fastened to the underlying end flap sections 189, 191 and 192 and to the corresponding end flap sections 197, and 198 extending from the panel 182 when the container has been squared up and loaded.

The container of FIG. 7 is opened by cutting the panel section 186 along the arrowed line shown in FIG. 7, that is, along a line joining the base of the slot 193 and its counterpart (not visible in FIG. 7) on the opposite side of the container. The tape 188 is not, of course, removed in opening the container. The container is then opened by hinging it along the transverse center line of the panel 182. The container may also be opened by cutting the panel 182 between the slots forming end panel sections 197 and 198, in addition to the cutting of panel section 186 as previously referred to and, after these cuts have been made, the container may be opened by lifting the upper half of the container from the lower half to thereby form two separated display trays.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claims.

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The invention claimed is:

1. An easy-opening container having a bottom panel, a side panel extending from each side margin of said bottom panel, a top panel extending from the margin of each of said side panels which is opposite the junction of said side and bottom panels, end flaps extending from the end margins of each of said top, side and bottom panels, the side panel end flaps which extend from both ends of at least one of the side panels each being slotted to divide the flap into a first side panel end flap section adjacent a top panel end flap and a second side panel end flap section adjacent the bottom panel end flap, said top panels meeting in marginal abutting relation and the adjacent top panel end flaps meeting in marginal abutting relation when the container is closed, means fastening said marginal top panel and end flap junctions, said first side panel end flap sections underlying said top panel end flaps and said second side panel end flap sections underlying said bottom panel end flaps with the longitudinal division between adjacent first and second end flap sections registering with the abutting end margins of said top panel end flaps and bottom panel end flaps, whereby upon removal of said fastening means said container may be opened to display at least a portion of its contents by folding one of said side panels outwardly upon itself on a line extending between the longitudinal division between adjacent end flap sections.

2. An easy-opening container having a bottom panel, a side panel extending from each side margin of said bottom panel, a top panel extending from the margin of each of said side panels which is opposite the junction of said side and bottom panels, end flaps extending from the end margins of each of said top, side and bottom panels, the side panel end flaps which extend from both ends of at least one of the side panels each being slotted to divide the flap into a first side panel end flap section adjacent a top panel end flap and a second side panel end

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flap section adjacent the bottom panel end flap, said top panels and the adjacent top panel end flaps meeting when the container is closed, means fastening said marginal top panel and end flap junctions, said first side panel end flap sections underlying said top panel end flaps and said second side panel end flap sections underlying said bottom panel end flaps with the longitudinal division between adjacent first and second end flap sections registering with the abutting end margins of said top panel end flaps and bottom panel end flaps, whereby upon removal of said fastening means said container may be opened to display at least a portion of its contents by folding one of said side panels outwardly upon itself on a line extending between the longitudinal division between adjacent end flap sections.

3. A container as claimed in claim 2 but having the said side panel end flaps, which extend from both ends of said one side panel, slotted less than the full length of the flap.

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