United States Patent

[11] 3,542,192

[72] Inventor **Clyde Oliver Steck**
Allison Park, Pennsylvania

[21] Appl. No. **778,438**
[22] Filed **Nov. 25, 1968**
[45] Patented **Nov. 24, 1970**

[73] Assignee **St Regis Paper Company**
New York, New York
a corporation of New York

[54] **BREAKAWAY CASES**
10 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **206/65,** 229/33, 229/51
[51] **Int. Cl.** **B65d 5/54,** B65d 17/24, B65d 71/00
[50] **Field of Search** ..... 229/51Div, RC, IS, 33; 206/65C

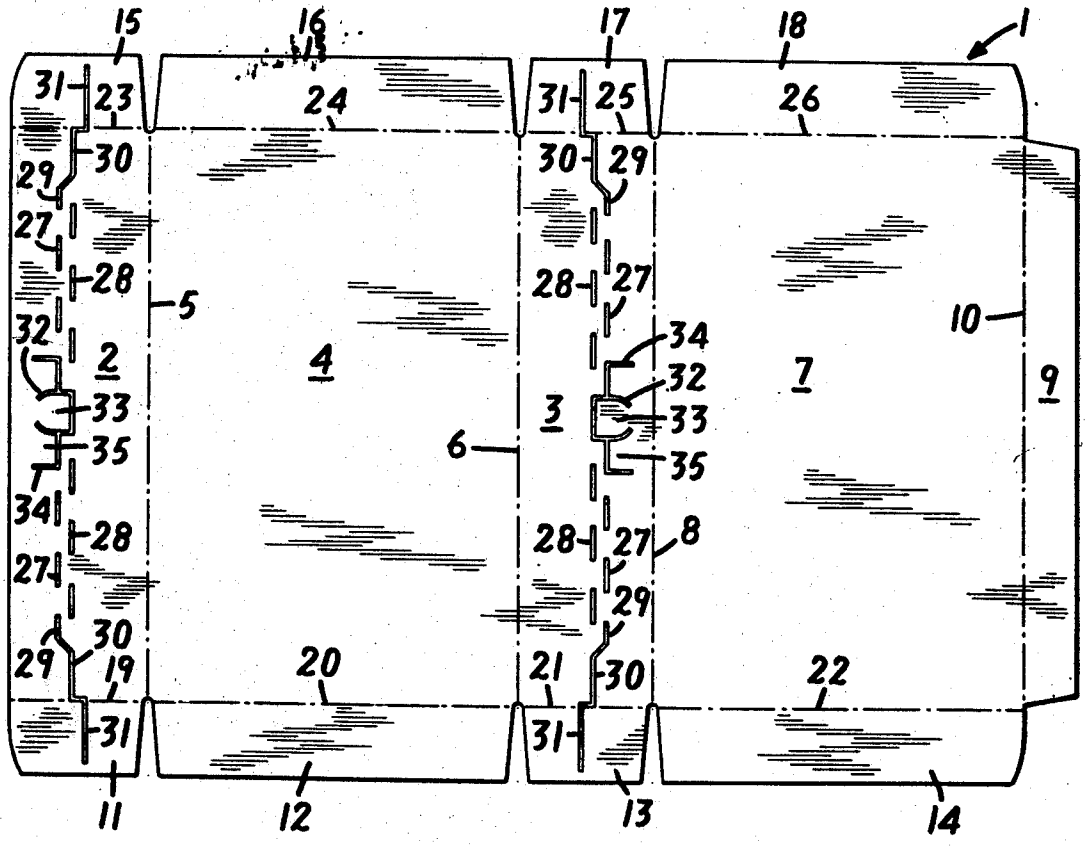
[56] **References Cited**

UNITED STATES PATENTS

1,817,135	8/1931	Goodyear	229/51Div.UX
2,367,008	1/1945	Davidson	229/33
2,527,784	10/1950	Acker	229/33X
2,680,558	6/1954	Mai	229/51IS
3,167,240	1/1965	Collura et al.	229/51Div.

Primary Examiner—Joseph R. Leclair
Assistant Examiner—Leonard Summer
Attorneys—Clyde H. Haynes and Ferdinand F. E. Kopecky

ABSTRACT: Cases for packaging a plurality of cans or similar containers of soup or other comestibles, which cases are formed from a blank of double-face, single-wall corrugated board that is suitably scored with folding and tearing lines. These cases are capable of being readily opened without the use of cutting tools by manually grasping the case at designated regions and tearing it apart into two portions having crenelate edges, the bottom portion of which is a tray on which the entire contents of the case are disposed an on which the contents of the case can be readily price marked and displayed.



Patented Nov. 24, 1970 3,542,192

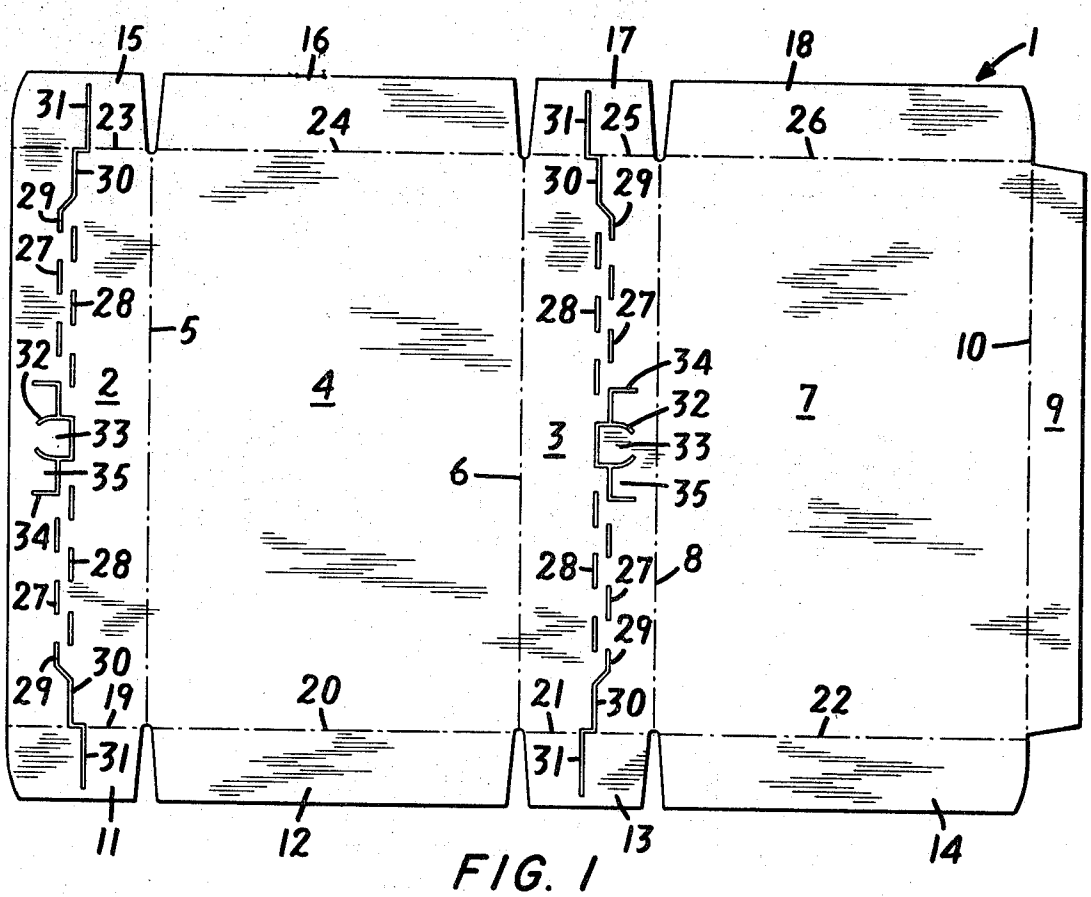


FIG. 1

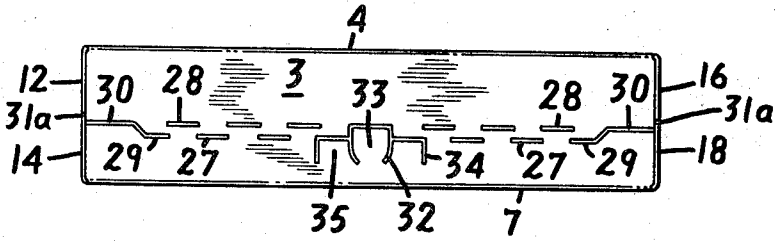


FIG. 2

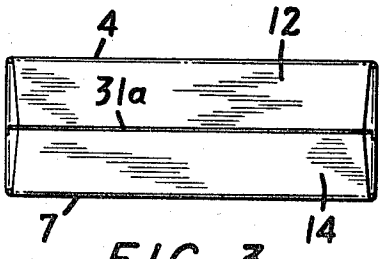


FIG. 3

INVENTOR.
CLYDE OLIVER STECK

BY

Ferdinand A. Kopecky

his ATTORNEY

FIG. 4

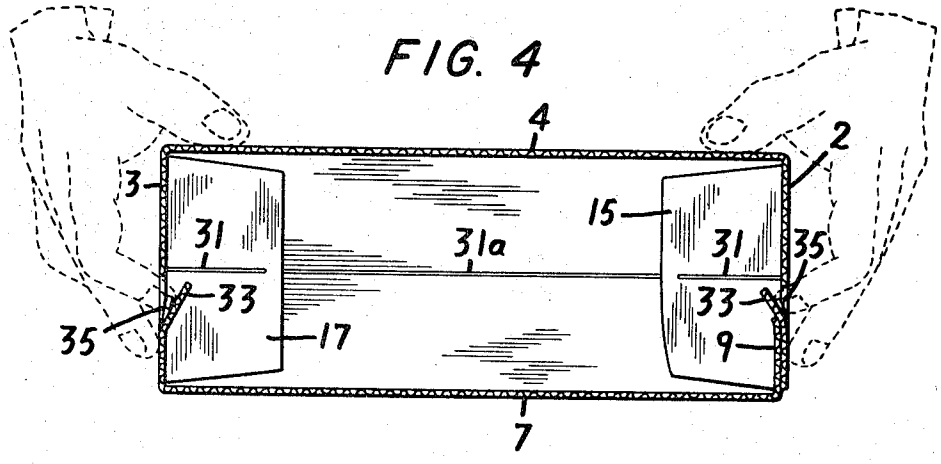
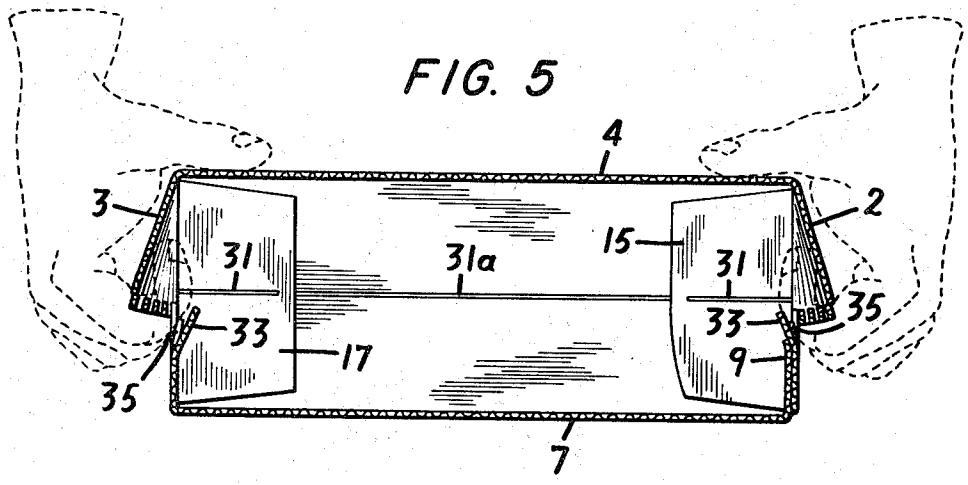


FIG. 5



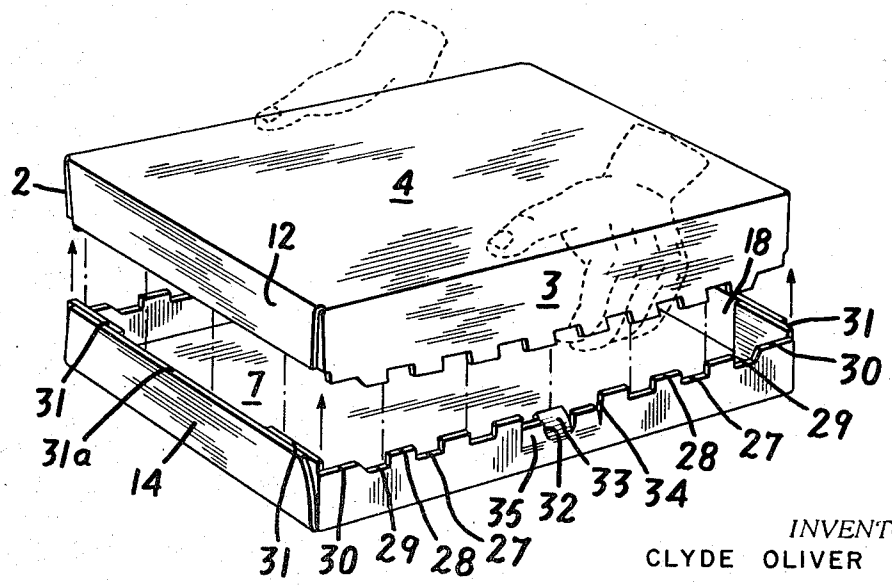


FIG. 6

INVENTOR.
CLYDE OLIVER STECK

BY
Ferdinand B. Kopecky
his ATTORNEY

BREAKAWAY CASES

The present invention pertains to cases or shipping containers for the packaging of a plurality of cans, glass jars, or other containers containing soup or other comestibles or goods. It pertains particularly to such cases that are formed from a blank of double-face, single-wall corrugated board that is suitably scored with folding and tearing lines.

Heretofore such cans or containers have been packaged in conventional cases that were formed from corrugated board blanks that included only folding scores. Knives or other cutting tools were required for opening such a case or shipping container, or for cutting its side panels so as to form a tray and expose its contents, so that its contents could be price marked and displayed. Not only were such cutting operations time consuming but, much too frequently, portions of the contents of such cases were damaged by the cutting tool, thus reducing their value or rendering them valueless.

More recently such cans or containers have also been packaged in trays formed of corrugated board that were then overwrapped with a sheet of polyethylene or other resinous film or sheet material to produce a sealed shipping container. This alternative likewise had disadvantages, notably the higher cost of the packaging materials and the sealing operations.

The principal object of the present invention is to provide a corrugated board case that retains all the desirable advantages of such conventional corrugated board cases and the principal advantages of such overwrapped trays. Another object of the present invention is to provide a corrugated board case that can be readily torn apart into two portions (and thereby opened) without the use of cutting tools, to leave a tray portion on which the contents of the case are disposed and can be readily price marked and displayed. A further object of the present invention is to provide a corrugated board blank with suitable folding and tearing scores from which such a case can be readily erected for packaging such cans or containers. Other objects and advantages of the invention, some of which are referred to hereinafter, will be evident to those familiar with the art to which this invention pertains.

The blanks and cases of the present invention are further described herein by reference to the accompanying drawings, in which:

FIG. 1 is a top view of a blank from which the case is erected;

FIG. 2 is a side view of the erected case formed from the blank of FIG. 1;

FIG. 3 is an end view of the erected case of FIG. 2;

FIGS. 4 and 5 are sectional end views of the case illustrating successive steps in grasping the case at the designated regions to tear it apart into two sections; and

FIG. 6 is a view in perspective showing the case after it has been torn apart into two portions.

The integral blank 1 from which the case of the present invention is formed includes two side panels 2 and 3, which are referred to herein as the right and left side panels, respectively. Each of these two side panels 2 and 3 is hingedly connected to a top panel 4 through the folding scores 5 and 6, respectively. The blank also includes a bottom panel 7 that is hingedly connected to the left side panel 3 through the folding score 8 and to a glue flap 9 through the folding score 10.

The blank 1 also includes eight end flaps 11, 12, 13, 14, 15, 16, 17, and 18, each of which is hingedly connected to a side panel or to the top or bottom panels through the folding scores 19, 20, 21, 22, 23, 24, 25, and 26, respectively, as indicated in the drawing. These end flaps, when folded inwardly, form the two end panels, each of which, at the two ends of the case, which are referred to herein as the front and rear ends, respectively, includes the four end flaps at that end of the blank (11, 12, 13, and 14, for example), two of which (11 and 13, for example) are overlapped and concealed by the two wider end flaps (12 and 14, for example) that are visible in FIG. 3 at the front end of the erected case.

The case of the present invention is provided with two tearing scores, each of which extends through the side panels 2 and 3 and into but not completely through the flaps 11, 13, 15, and 17 that are adjacent to those side panels. Each of these tearing scores includes at least three types of cut scores, namely:

1. two cut (or perforated) parallel broken lines, the perforated slots of one line of which lie opposite the unperforated spaces of the other line;

2. an intermediate cut finger tab score; and

3. two cut notched lines at either end of the panel which extend into the adjacent flaps.

The cut parallel broken lines consist of two broken parallel lines 27 and 28 that consist of slots that are cut into the corrugated board at spaced intervals. These slots pass completely through both faces of the corrugated board. Line 27 is referred to herein as the bottom cut broken line and line 28 as the top cut broken line. These slots are cut so that the slots on one line are opposite the uncut spaces on the opposite line and the ends of the slots on each of these lines lie slightly over or under each other.

Each of two cut notched end lines consists of a notched continuous line that is cut to pass completely through both faces of the corrugated board, and veers toward the top of panel 4 when the case is erected. For the sake of simplicity, the cut notched end lines are described hereinafter only with respect to that line which extends into the flap 11. The other cut notched end line that is included in the opposite flap 15 of the same tearing score is identical in all respects with that line but is arranged so that it is the reverse or mirror image of the other. The cut notched end line that is included in the right side panel 3 is a mirror image of that in the left side panel 2.

The cut notched end line consists of a first section 29 that is an extension of the bottom cut broken line 27 and has about the same length as one of the slots of line 27. The beginning of the first section 29 of this line lies over the end of the last slot at that end of the broken line 28, and the other end of the first section is joined through a diagonal cut to a second notched section 30 that is on the same line as the top cut broken line 28. This second section of the notched line continues to the folding score 19 where it is joined through a right-angled cut to a third notched section 31 that extends into and across the adjacent flap 11, almost, but not quite, to the outermost edge of that flap. The third notched section 31 of the cut notched end line is parallel to the broken lines 27 and 28 but is spaced above the line 28 at about the same distance as lines 27 and 28 are spaced from each other and is on a line that coincides with the line 31*a* (FIG. 3) along which the abutting edges of the flaps 12 and 14 (or 16 and 18) lie when the case is erected.

The intermediate cut finger tab scores that are included in the tearing score are centrally spaced along the cut broken lines 27 and 28 in the side panels 3 and 4 and consist of two inwardly tapering cut lines 32 extending downwardly from each end of the centermost cut slot of the broken line 28, to form a finger tab 33 that is still hingedly connected to the side panel, and two straight cut lines 34 extending perpendicularly downwardly from opposite ends of two or more centermost adjacent cut slots along the broken line 27 to provide a second hingedly connected tab 35 that can be grasped and pushed inwardly with the remaining fingers after the finger tab 33 has been depressed, to grasp the exposed top edge of the side panel, as represented in FIG. 3.

It has been found to be of critical importance to cut the corrugated board from which the cases of the present invention are to be made in such manner that the flutes or corrugations between the two outer faces of the board are parallel to the tearing scores on the side panels 2 and 3, as represented in FIGS. 4 and 5 of the drawings. If the flutes or corrugations run in the opposite direction, the tearing scores would be more susceptible to tearing and consequently would not provide a case that would withstand the stresses to which cases such as those that are referred to herein are normally subjected in shipping without being torn or split apart.

All of the folding, tearing, and cut score lines that are referred to herein will normally be applied to the blank by means of a single die in a press in a single operation and con-

sequently the blanks for producing the cases of the present invention can be made in a rapid and economical manner.

After the cases of the present invention have been filled with containers and folded to enclose the containers, they are sealed by the application of glue or other conventional adhesives to the glue flap **9** and to the flaps **11, 13, 15,** and **17,** or to corresponding portions of the flaps or side panel to which they will be joined when the case is sealed, for example, to portions of side panel **2** and the flaps **12, 14, 16** or **18.** These latter flaps, which form the end panels as shown FIG. **3,** are held to the case only by the flaps **11, 13, 15,** and **17** to which they are thus joined. It has been found that the cases of the present invention as thus sealed eminently withstand stresses to which such cases are normally subjected in shipping, and that they can be readily opened without the use of cutting tools as further described herein.

To open the sealed case of the present invention, the side panels **2** and **3** of the cases are grasped with the fingers of the hands while the top panel **4** is pressed downwardly with the thumbs. The index fingers are then pressed against the finger tabs **33,** as shown in FIG. **4,** and the second tabs **35** between the cut lines **34** of each of the side panels that are below the finger tab **33** are pushed inwardly, as shown in FIG. **5,** thus exposing the cut edges above the tabs **35** which are then grasped and pulled outwardly so that the uncut spaces nearest the ends of the slots on each of the cut broken lines **27** and **28** are torn apart, leaving crenelate edges on each of the torn-apart portions of the case, and the thus separated top portion of the case, as shown in FIG. **6,** is lifted from the bottom tray portion of the case on which the contents of the case are still disposed, ready for price marking and display. In separating the two portions of the case, tears are made along lines between the ends of each of the slots on one of the cut broken lines (**27,** for example) and the ends of the slots directly above or below on the other cut broken line (**28,** for example), and along lines from the ends of each of the third sections of the cut notched end lines in each of the flaps **11, 13, 15,** and **17,** to the outer edges of those flaps.

The cases of the present invention may be made in any desired size and to accommodate more than one layer of containers. A case that will accommodate a single layer of **24** No. 1 tins of soup has external dimensions of approximately 16¼ × 10⅞ × 4⅛ inches, and its bottom cut broken score line **27** is preferably approximately 1¾ inches from the bottom of the case, thereby exposing the principal part of the labels on the tins, and the top cut broken score line **28** is approximately one-fourth inch thereabove. The slots in these cut broken score lines will be approximately 1 inch long with uncut portions between them of about three-fourths inch so that the ends of each of the slots lie over each other by a distance of approximately one-eighth inch.

Although the foregoing specification comprises preferred embodiments of the present invention, it is to be understood that these were selected solely for purposes of illustration and that the present invention is to be limited only by the scope of the appended claims.

I claim:

1. A blank for the production of a case for packaging a plurality of containers which consists of a double-face, single-wall corrugated board scored with folding and cutting lines that define:

a. a top panel;

b. a bottom panel;

c. two side panels;

d. a glue flap, hingedly joined by means of a folding score to the bottom panel;

e. four end flaps, each of which is hingedly connected by means of a folding score to an end of the said two side panels; and

f. four end flaps, each of which is hingedly connected by means of a folding score to an end of the said top and bottom panels, which flaps are of such dimensions that, when the case is erected, the edges of the two flaps at each of the two ends of the case abut against each other and together form two two-piece end panels of the case, in which case each of the side panels and their adjacent end flaps is provided with a tearing score that is parallel to the corrugations of the board and consists of:

i. two cut parallel broken lines, the perforated slots of one line of which lie opposite the unperforated spaces of the other line and which, when the case is torn apart, produce a single crenelate tear line,

ii. cut lines extending laterally across and beyond the central region of the said two cut parallel broken lines when the case is erected to form at least one finger tab,

iii. two cut notched lines, one at each end of each side panel, which extend into the adjacent flaps, each of which lines include a first section that is an extension of the lower of the said two cut parallel broken lines when the case is erected, a second section that is on the same line as the top line of the said two cut parallel broken lines when the case is erected, which second section extends to the folding score between the panel and its adjacent flap and is connected to the end of the first section through a diagonally cut line, and a third section extending into but not beyond the edge of the adjacent flap on a line that coincides substantially with the line between the abutting edges of the two flaps of the top and bottom panels that form the two-piece end panel, which third section is connected to the end of the second section by a right-angled cut along the folding score between the panel and its adjacent flap.

2. A blank for the production of a case as defined in claim **1** in which the cut lines extending laterally across and beyond the central region of the said two cut parallel broken lines that are included in the tearing score include two inwardly tapering lines extending from the top line of the two cut parallel broken lines to form a finger tab and two lines extending downwardly from the lower of the two cut parallel broken lines when the case is erected to form a wider second tab that can be pressed inwardly to provide an opening so that fingers of the hands can be inserted in that opening to grip and tear away the top portion of the case.

3. A blank for the production of a case as defined in claim **2** in which the two cut parallel broken lines are approximately one-quarter inch apart and the perforated slots are approximately three-quarters inch apart.

4. A case completely filled with a plurality of containers formed from a blank as defined in claim **2,** the said case being sealed by uniting, by means of an adhesive composition, the glue flap to a side flap, and each of the four end flaps that are hingedly connected to the top and bottom panels of the case at each of their sides to two different flaps of the four end flaps that are hingedly connected to the two side panels.

5. A case completely filled with a plurality of containers as defined in claim **4,** which has a length of approximately 16¼ inches, a width of approximately 10⅞ inches, and a height of approximately 4⅛ inches.

6. A blank for the production of a case as defined in claim **1** in which the two cut parallel broken lines are approximately one-quarter inch apart and the perforated slots are 1 inch long and are spaced approximately three-quarters inch apart.

7. A case completely filled with a plurality of containers formed from a blank as defined in claim **6,** the said case being sealed by uniting, by means of an adhesive composition, the flue glue flap to a side flap, and each of the four end flaps that are hingedly connected to the top and bottom panels of the case at each of their sides to two different flaps of the four end flaps that are hingedly connected to the two side panels.

8. A case completely filled with a plurality of containers as defined in claim **7,** which has a length of approximately 16¼ inches, a width of approximately 10⅞ and a height of approximately 4⅛ inches.

9. A case completely filled with a plurality of containers formed from a blank as defined in claim **1,** the said case being sealed by uniting, by means of an adhesive composition, the

glue flap to a side flap, and each of the four end flaps that are hingedly connected to the top and bottom panels of the case at each of their sides to two different flaps of the four end flaps that are hingedly connected to the two side panels.

10. A case completely filled with a plurality of containers as defined in claim 9, which has a length of approximately 16¼ inches, a width of approximately 10⅞ inches, and a height of approximately 4⅛ inches.