July 7, 1970 F. A. KOHLHAAS ET AL 3,519,194

END-LOADING EASY-OPENING SHIPPING CARTON

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FIG. 1

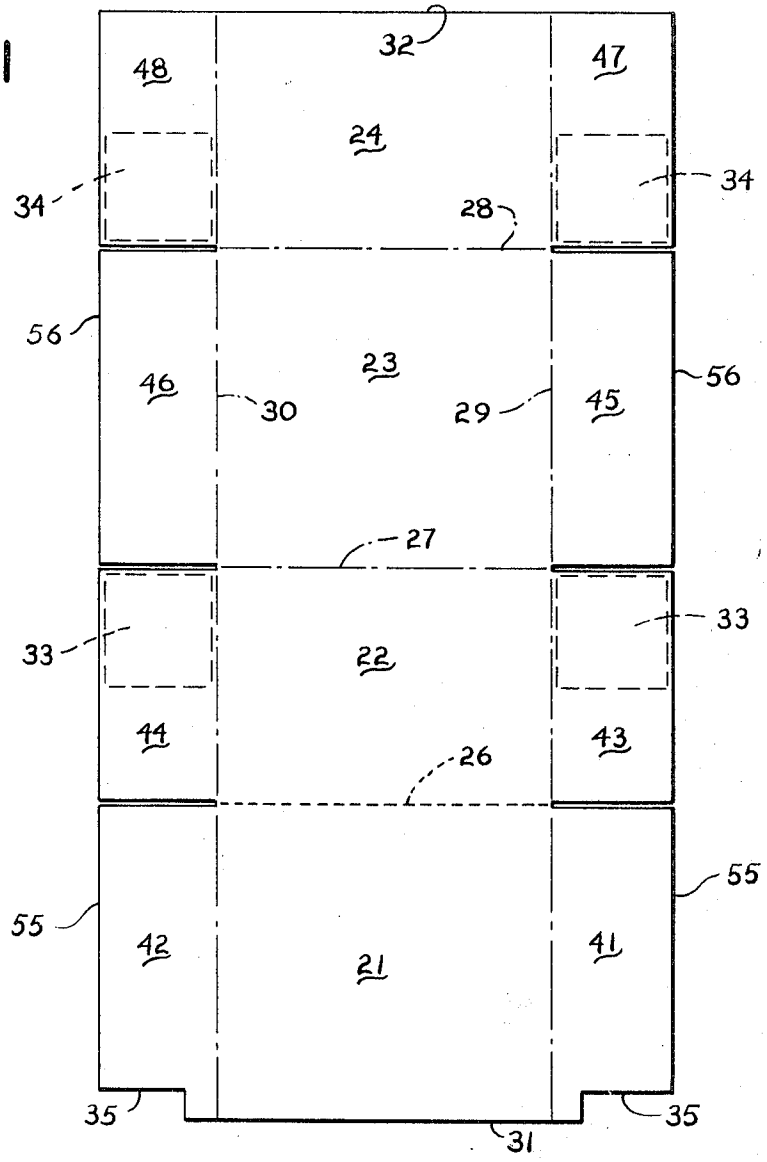
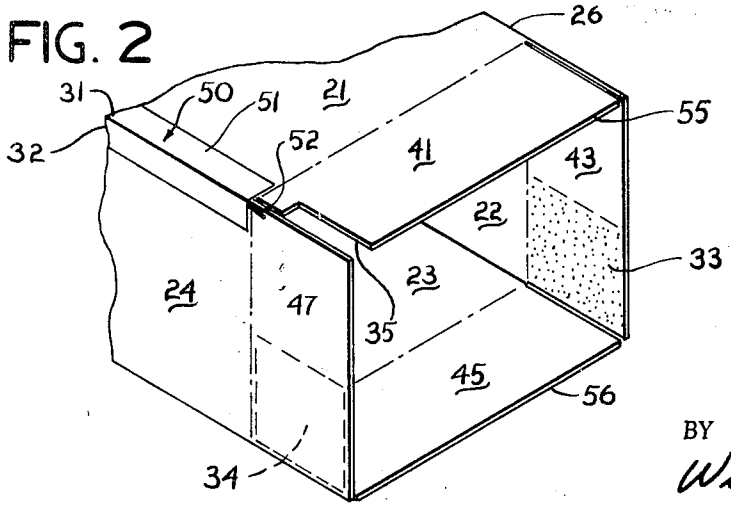


FIG. 2



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FIG. 3

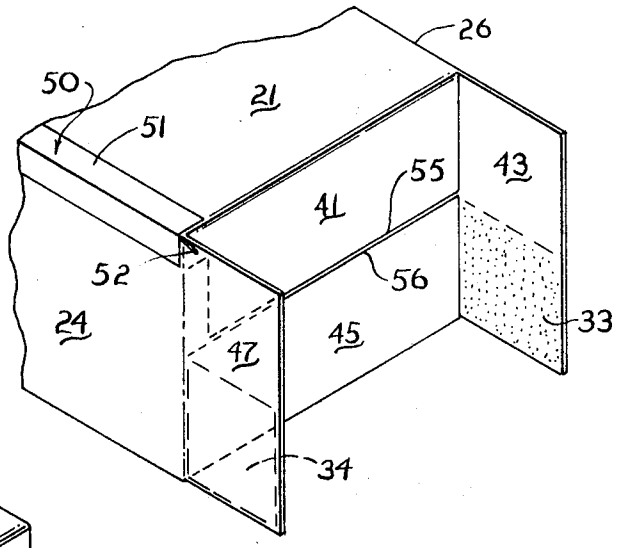


FIG. 4

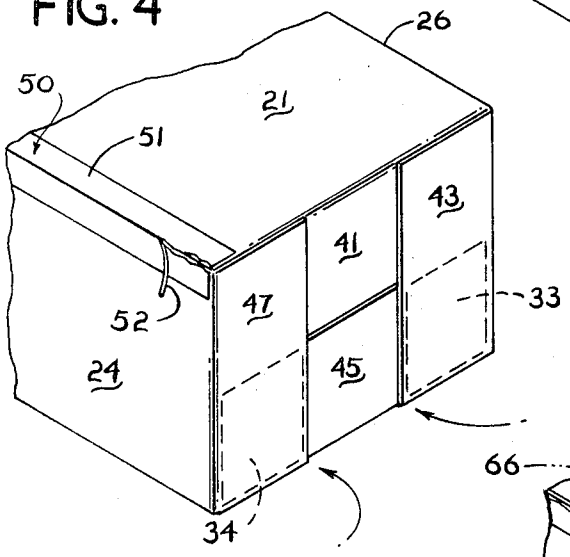


FIG. 5

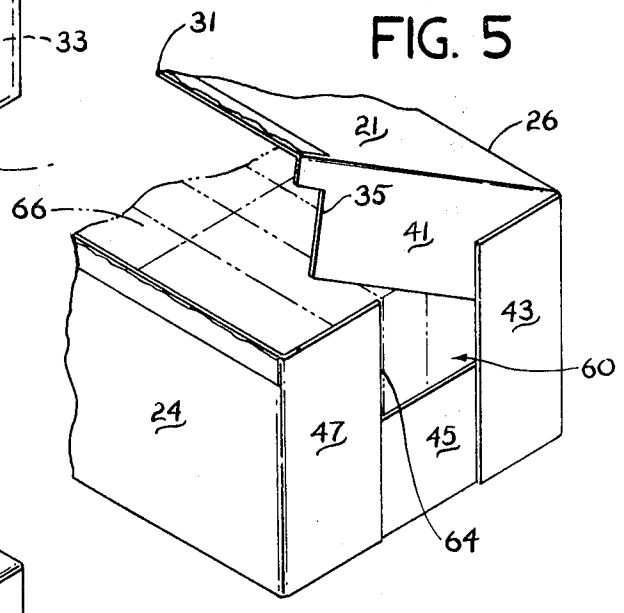
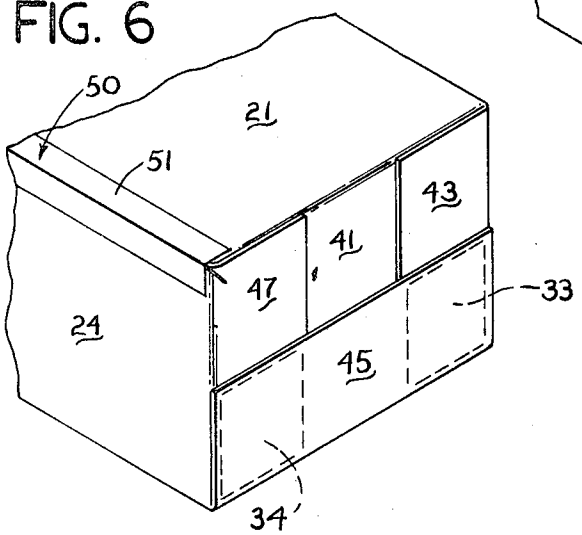


FIG. 6



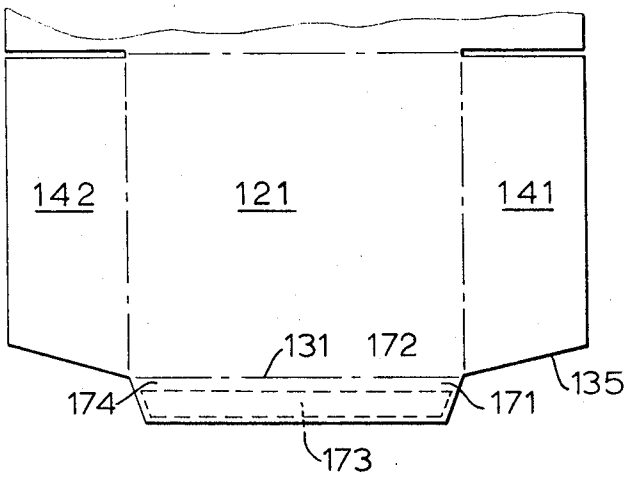
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FIG. 7



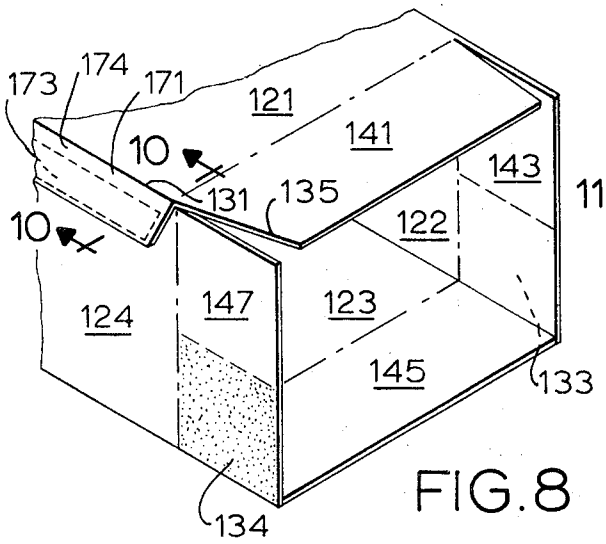


FIG. 8

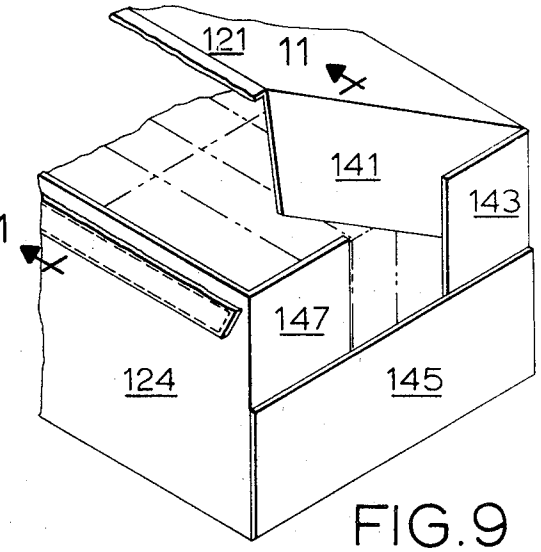


FIG. 9

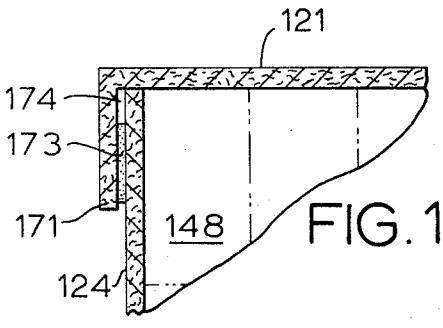


FIG. 10

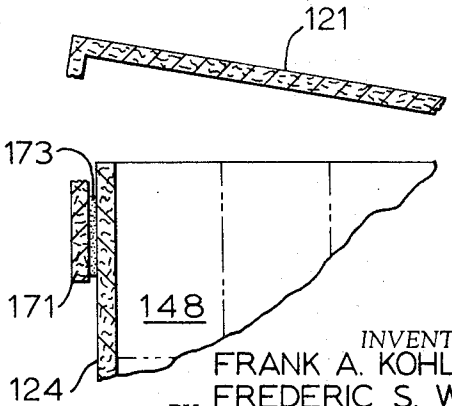


FIG. 11

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3,519,194

END-LOADING EASY-OPENING SHIPPING CARTON

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Continuation-in-part of application Ser. No. 710,302, Mar. 4, 1968. This application July 7, 1969, Ser. No. 843,280

Int. Cl. B65d

U.S. Cl. 229—51 7 Claims

ABSTRACT OF THE DISCLOSURE

A regular slotted shipping carton adapted for end-loading and top-opening. The manufactures seal is made along the connection between the top panel and a side wall panel. The top wall closure flaps are free of adhesive connection with said front and rear wall closure flaps so that the top wall panel may be readily removed when the manufacturers seal is broken. Openings are provided between the front and rear wall closure flaps for easy access to the goods packaged in the carton when the top wall panel is removed.

BRIEF SUMMARY OF THE INVENTION

The invention is a continuation-in-part of our patent application Ser. No. 710,302 filed Mar. 4, 1968 now abandoned, and relates to a regular slotted shipping carton provided with end-loading and top-opening features. The outer free edges of the front top wall panels of the carton abut and are connected by the manufacturer's joint. The novel end closure includes top wall flaps free of connection with other closure flaps but maintained in place by contact with the inner surface of the front and rear wall flaps which are adhesively connected to the bottom wall flaps. Since the top wall closure flaps are not adhesively connected to the adjacent closure flaps, the top wall panel and the top wall closure flaps may be removed by breaking the manufacturer's seal and pivoting the top wall panel about its hinged connection with the rear wall panel. Ready access to the goods packaged in the carton is had through openings provided between the front and rear wall closure flaps.

In the past, one of the thorniest problems manufacturers of soap powders, dry cereal, etc., faced was that of grocery clerks cutting through the product packages as they knifed into the shipping carton. Such manufacturers often honor demands from grocery retailers to replace the products damaged in this manner. Such damage often runs as high as 5% of the manufacturers selling price and greatly depletes any profit in the sale. One embodiment of this invention provides such manufacturers with an end-loading, top-opening shipping carton which will dispense with the necessity and inclination of grocery clerks to use knives for opening the carton and another embodiment provides protection for the goods as a glue panel is severed in order to gain entry to the carton thus providing both manufacturers and the store owners with the attendant savings.

There have been various attempts at solutions to this problem in the past, however, the prior art cartons of which applicants are aware, involve irregular carton blanks and require special equipment for handling.

The End-Loading, Display Tray-Forming Shipping Carton invented by one of the applicants and disclosed in U.S. Pat. 3,372,794 provides a carton solving many of the same problems, however, that carton is adapted particularly for conversion into a display tray and involves extra material in the provision of the tray wall panel, in addition to a special glue pattern on the closure flaps. The instant invention relates only to a shipping carton made from a regular slotted carton blank. The manner in which the end closure is effected provides a new and unusual result in that a regular slotted carton may be quickly and easily opened without fear of cutting the product packages.

Accordingly, because this invention involves a regular slotted carton blank, it may be handled by any conventional case loading and sealing equipment adapted for regular slotted cartons.

Further, since grocery clerks need not guess which end of the carton to open, as with conventional cartons, the tops of the product packages are always exposed for marking once the top panel of the shipping carton is removed.

Additionally, easy access to the product packages is gained when the top wall closure flaps have been removed, thus dispensing with the problem of getting a grip on and removing the first of the tightly packed product packages.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of the outside face of a foldable blank from which the embodiment of the carton of FIGS. 1–6 is formed.

FIG. 2 is a fragmentary perspective view of the blank of FIG. 1 erected to a tubular configuration and ready to be loaded.

FIG. 3 is a fragmentary perspective view depicting the first step of closing the embodiment of FIGS. 1–6.

FIG. 4 is a fragmentary perspective view of the carton of FIG. 3 in a sealed condition and the initial opening step of breaking the tear-strip seal.

FIG. 5 is a fragmentary perspective view of the carton with the tear-strip seal completely broken and the top wall panel being pivoted about its rear edge during the opening process.

FIG. 6 is a fragmentary perspective view of the embodiment of FIGS. 3–5 with a modified closure flap pattern.

FIG. 7 is a fragmentary plan view of a foldable blank from which the alternate embodiment of FIGS. 7–11 is formed.

FIG. 8 is a fragmentary perspective view of the blank of FIG. 7 erected to a tubular configuration and ready to be loaded.

FIG. 9 is a fragmentary perspective view of the carton of FIGS. 7–11 after the manufacturers seal has been broken and the top panel partially lifted.

FIG. 10 is a fragmentary end elevation view of the carton in the area of the manufacturers seal.

FIG. 11 is a fragmentary end elevation view similar to FIG. 10 after the manufacturers seal has been severed and the top wall panel partially lifted.

DETAILED DESCRIPTION OF INVENTION

Referring now to the embodiment shown in FIGS. 1–6 of the drawing wherein like reference numerals refer to like components in the various views, the carton blank generally designated by reference numeral **20** as shown in FIG. 1 includes top wall panel **21**, rear wall panel **22**, bottom wall panel **23** and front wall panel **24** foldably connected in series relation by lines of scoring **26–28** inclusive.

Line of scoring **26** connecting the top wall panel to the rear wall panel is shown as a perforated score, however, such line of scoring need not be perforated as will be hereinafter explained. The end edges of the various wall panels are determined by flap scores **29** and **30** which serve as the hinge connection for the end closure flaps. Reference numerals **41** and **42** designate the top

wall closure flaps, **43** and **44** the rear wall closure flaps, **45** and **46** the bottom wall closure flaps, and **47** and **48** the front wall closure flaps. As with all regular slotted cartons, each of the flaps are of equal width. The outer free edges of the top and front wall panels serve as the outer extremities of the carton blank and have been designated by reference numerals **31** and **32**, respectively. Reference numeral **33** refers to glue areas in rear wall closure flaps **43** and **44** and reference numeral **34** refers to glue areas in the front wall closure flaps **47** and **48**. The significance of glue areas **33** and **34** will be hereinafter explained.

Top wall closure flaps **41** and **42** are provided with cutouts **35** also for a reason to be hereinafter explained.

FIGS. 2–5 depict the carton in progressive stages of erection, closing and opening. Since the invention relates to a carton having identical closures at each end which are easily closed and opened, the description shall follow the chronological stages of closing and opening one end only.

Referring now to FIG. 2, the carton has been folded into a tubular configuration with outer free edge **31** of top wall panel **21** in an abutting relation with outer free edge **32** of front wall panel **24** and secured thereto by a tear-strip tape designated generally as **50**. Tear-strip tape **50** comprises adhesive backing **51** and a heavy tear string **52**. Tear-strip tape of this type is generally known and is preferred, however, it is conceived other easy-opening seals may be substituted therefore.

As will be noted from FIG. 2, glue areas **33** and **34** extend over approximately the lower 50% of the front and rear wall closure flaps **43** and **47**.

With the container in the tubular configuration as shown in FIG. 2, it is in the proper configuration for end-loading.

Once the product has been loaded in the carton, the end closure of the embodiment of FIGS. 3–5 is affected by first folding the top and bottom wall closure flaps **41** and **45** to a closed position as shown in FIG. 3. When the top and bottom wall closure flaps **41** and **45** have been infolded glue is applied to glue areas **34** and **33** on front and rear wall closure flaps **47** and **43** respectively. Although applicants prefer to apply glue to flaps **47** and **43**, it may be applied to bottom wall flap **45** with similar results. Front and rear wall closure flaps **47** and **43** are then infolded to the position shown in FIG. 4, and pressure is applied to affect a firm adhesive connection between bottom wall flap **45** and the front and rear wall flaps. It will be noted that the top wall flap **41** is free of any adhesive connection with the adjacent front and rear wall closure flaps.

With the container in the loaded and sealed position as shown in FIG. 4, the container is ready to be shipped or stored. For shipping and stacking purposes the carton has all the attributes of a regular slotted carton, the front and rear wall closure flaps provide a vertical column for stacking strength as does the vertically aligned top and bottom wall closure flaps.

Once the carton reaches its destination, it may be quickly and easily opened. The grocery clerk merely grasps the end of tear-string **52** and pulls outwardly as shown in FIG. 4, thus breaking tape **51**. Because top wall flap **41** is not connected to either of the adjacent closure flaps, the top wall panel **21** may be readily removed by lifting its outer free edge **31** (see FIG. 5), thus pivoting top wall panel **21** about perforated score connection **26**.

Cut-out **35** has been provided in the front edge of the top wall closure flaps to prevent the flaps from binding against the front wall panel as the top wall panel is pivoted about hinged connection **26**. Cut-out **35** may be of any configuration, for example the angular configuration of FIGS. 7–11, as long as enough material is removed from the front edge of the flaps to prevent binding. The cut-out must not, however, extend beyond the outer free edge **64** (FIG. 5) of flap **47** as the product packages would be exposed.

If desired, the top wall panel may be completely removed from the carton by tearing along perforated score connection **26**. This is however, unnecessary to the price marking and removal of the product packages from the carton and therefore optional.

As will be noted in FIG. 5, the product packages **66** are exposed and readily available when the top wall panel is removed. This enables the manufacturer to place his product packages in the shipping carton such that the tops of the packages are exposed and thus, may be easily price marked by a grocery clerk before the product packages are removed from the shipping carton.

It will also be seen that once the top wall panel and the top wall closure flap have been removed from the carton, access to the goods may be readily gained through the opening designated by reference numeral **60** between the outer free edges of the front and rear wall closure flaps. This relieves the preexisting difficulty of removing the first product package from a tightly packed shipping container when only one wall panel has been removed. Because the top wall flaps are also removed with the top wall panel, a grocery clerk may readily grip product packages in access opening **60** thus easily removing the packages. It is preferable that the distance between the outer free edges of the front and rear wall closure flaps be about 2″ to allow one to grasp the product packages but this dimension is not critical.

FIG. 6 depicts a modificaion of the embodiment of FIGS. 1–5 in a view similar to that of FIG. 4. This modification, however, comprises an end closure whereby bottom wall flap **45** is adhered to the outer surface of front and rear wall closure flaps **47** and **43** instead of the inner surface as in the carton shown in FIG. 4. As in the carton of FIG. 4, however, top wall flap **41** is adjacent the inner face of the front and rear wall closure flaps **47** and **43**.

In the construction of the modification of FIG. 6 as well as the carton of FIG. 4, glue may be applied to either the bottom wall flap or the front and rear wall flaps to effect the adhesive seal.

FIGS. 7–11 depict an alternative embodiment of the invention whereby the tear-strip tape seal of the embodiment of FIGS. 1–6 has been replaced by a glue flap hingedly connected to the outer free edge of the top wall panel. The glue flap is adhesively connected along a substantial portion of its inner surface to the adjacent front wall panel, however, there is a glue-free area immediately above the adhesive connection such that the glue flap may be severed thus providing entry to the carton. The adjacent front wall panel protects the packaged goods from the severing instrument as the glue flap is being severed.

It will be noted that the reference numerals of this embodiment correspond to the reference numerals of the embodiment of FIGS. 1–6 and their associated components except that the reference numerals of this embodiment are of the **100** series.

Referring now to FIG. 7, a portion of the blank of the alternative embodiment is shown and it includes top wall panel **121**, top wall flaps **141** and **142**. Glue flap **171** is hingedly connected to front wall panel **121** by line of scoring **131**. The inner surface of glue flap **171** includes glue area **173** and glue-free area **174** between the glue area and the hinge connection **131**.

FIG. 8 shows the blank of FIG. 7 in a tubular configuration with glue flap **171** adhesively connected to the front wall panel thus providing the manufacturers seal for the container.

FIG. 10 further illustrates the manufacturers seal with glue flap **171** adhesively connected to the front wall panel in area of adhesive connection **173** and the glue-free area **174**.

FIG. 9 depicts the closure flap pattern of this em-

bodiment which is identical to that of FIG. 6, explained above. Further, FIG. 9 shows how the top panel may be removed in a manner similar to that of FIG. 5 once the glue flap **171** has been severed adjacent glue-free area **174**. FIG. 11 further illustrates this feature showing glue flap **171** severed above the area of adhesive connection **173** which remains intact as the top panel is removed.

Since it is only necessary to sever glue flap **171** to gain entry to the carton, a very shallow cut will suffice and the goods are protected from the severing instrument by the front wall panel **124**.

From the foregoing it will be apparent that the object of the invention heretofore enumerated and others have been accomplished in that there has been provided a novel and improved end-loading, top-opening, shipping carton adapted to be loaded and sealed by conventional equipment, the carton having the attendant advantages of a regulator slotted carton in closed condition and adapted for easy-opening and access to the carton contents. The invention is not limited to the carton shown, as it is our intention to cover hereby all adaptions and modifications thereof which come within the practice of those skilled in the art to which the invention relates. Having thus described our invention, we claim:

1. A paperboard shipping carton, comprising:

(a) top, rear, bottom and front wall panels hingedly connected in series relation;

(b) easy-opening means connecting said top and front wall panels;

(c) closure flaps of equal width hingedly connected to each end of each of said wall panels;

(d) said top and bottom wall closure flaps lying in substantially the same plane;

(e) said front and rear wall closure flaps adhesively connected to said bottom wall closure flaps;

(f) said top wall closure flap lying adjacent the inner surface of said front and rear wall closure flaps and free of adhesive connection therewith, such that said top wall panel may be pivoted about its hinge connection with said rear wall panel when said easy-opening connection is broken;

(g) cut-outs in the front portion of said top wall closure flaps whereby said top wall closure flaps will not bind against said front wall panel as said top wall panel is pivoted about its connection with said rear wall panel; and

(h) access openings between the outer free edges of said front and rear wall closure flaps of said shipping carton whereby easy access to the interior of said carton is gained when said top wall panel of said shipping carton is removed.

2. The paperboard shipping carton of claim **1**, wherein the hinged connection between said top and rear wall panels comprises a perforated score providing easy removal of said top wall panel from said rear wall panel.

3. The corrugated paperboard shipping carton of claim **1** wherein said front and rear wall closure flaps are connected to the inner surface of said bottom wall closure flap.

4. A loaded corrugated paperboard shipping carton, comprising:

(a) top, rear, bottom and front wall panels hingedly connected in series relation;

(b) easy-opening means connecting said top and rear wall panels;

(c) closure flaps of equal width hingedly connected to each end of each of said wall panels;

(d) said top and bottom wall closure flaps lying in substantially the same plane;

(e) the front and rear wall closure flaps adhesively connected to the bottom wall closure flap;

(f) the top wall closure flap lying adjacent the inner surface of said front and rear wall closure flaps and free of adhesive connection therewith, such that said top wall panel may be pivoted about its hinge connection with said rear wall panel when said easy-opening connection is broken;

(g) cut-outs in the front portions of said top wall closure flaps whereby said top wall closure flaps will not bind against said front wall panel as said top wall panel is pivoted about its connection with said rear wall panel;

(h) easily destructible product packages in said shipping carton arranged with their top ends adjacent said top wall panel of said shipping carton whereby the top ends of said product packages may be easily price marked when the top wall panel of said shipping carton is removed; and

(i) access openings between the outer free edges of said front and rear wall closure flaps of said shipping carton whereby easy access to said product packages is gained when said top wall panel of said shipping carton is removed.

5. A paperboard shipping carton, comprising:

(a) top, rear, bottom and front wall panels hingedly connected in series relation;

(b) means connecting said top and front wall panels;

(c) closure flaps of equal width hingedly connected to each end of each of said wall panels;

(d) said top and bottom wall closure flaps lying in substantially the same plane;

(e) said front and rear wall closure flaps adhesively connected to said bottom wall closure flap;

(f) said top wall closure flap lying adjacent the inner surface of said front and rear wall closure flaps and free of adhesive connection therewith, such that said top wall panel may be pivoted about its hinge connection with said rear wall panel when said means connecting the front and top wall panels is broken; and

(g) access openings between the outer free edges of said front and rear wall closure flaps of said shipping carton whereby easy access to the interior thereof is gained when said top wall panel is removed.

6. The paperboard shipping carton of claim **5**, wherein said means connecting said front and top wall panels comprises a glue flap hingedly connected to the outer free edge of said top wall panel and adhesively connected to said front wall panel in an area of adhesion extending over the lower portion of its surface, said glue panel being free of adhesive connection with said front wall panel over a substantial portion of its surface immediately below its hinged connection with said top wall panel such that the carton may be opened by severing the glue panel in the adhesive free area.

7. The paperboard shipping carton of claim **6**, further comprising cut-outs in the front portion of said top wall closure flaps whereby said top wall closure flaps will not bind against said front wall panel as said top wall panel is pivoted about its connection with said rear wall panel.

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U.S. Cl. X.R.

229—37