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LONGITUDINAL SIDE OPENING CARTON AND BLANK THEREFOR

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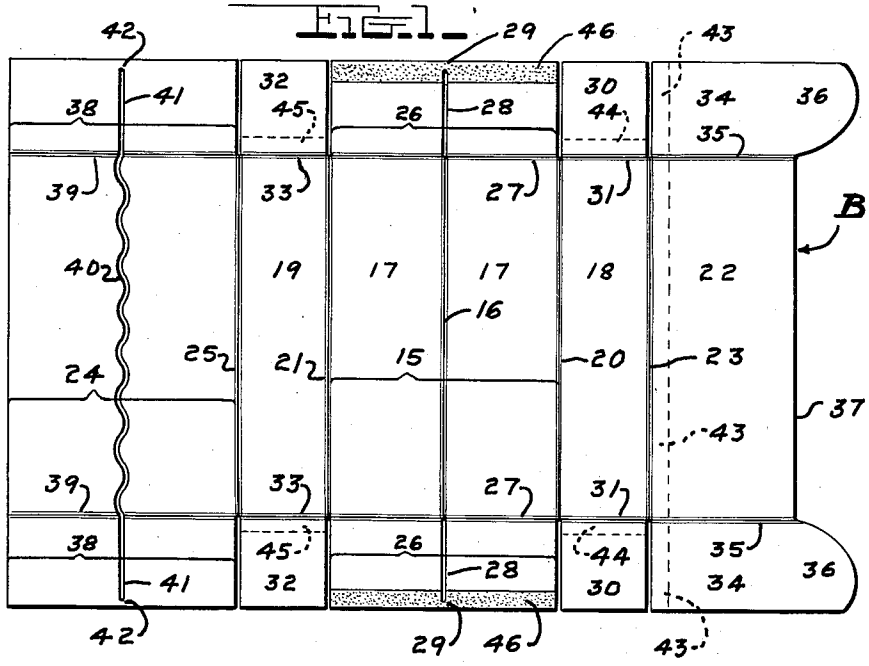
FIG. 1



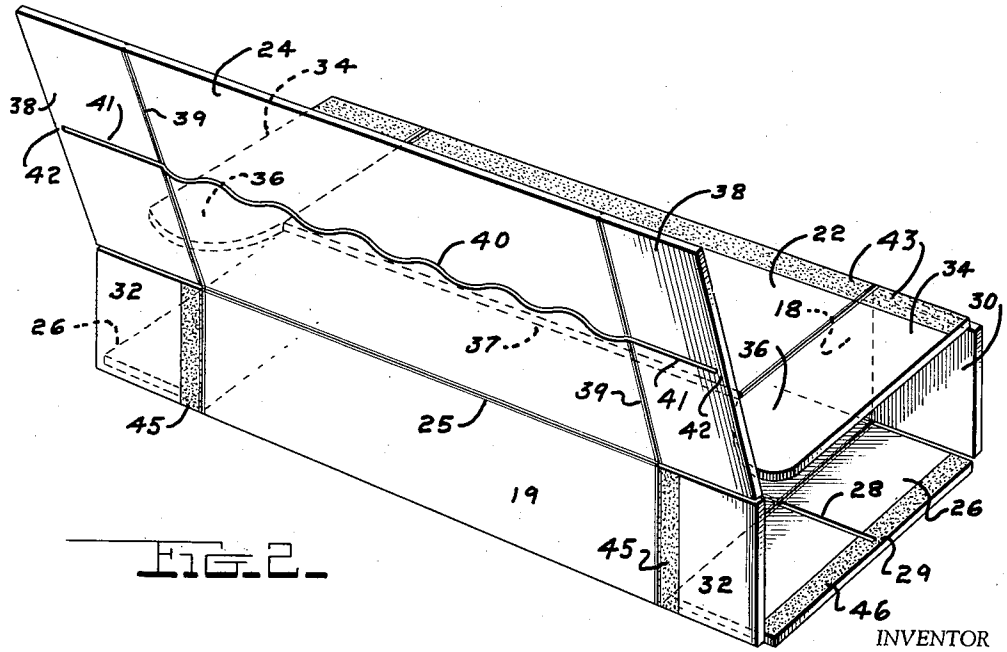


FIG. 2

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FIG. 3

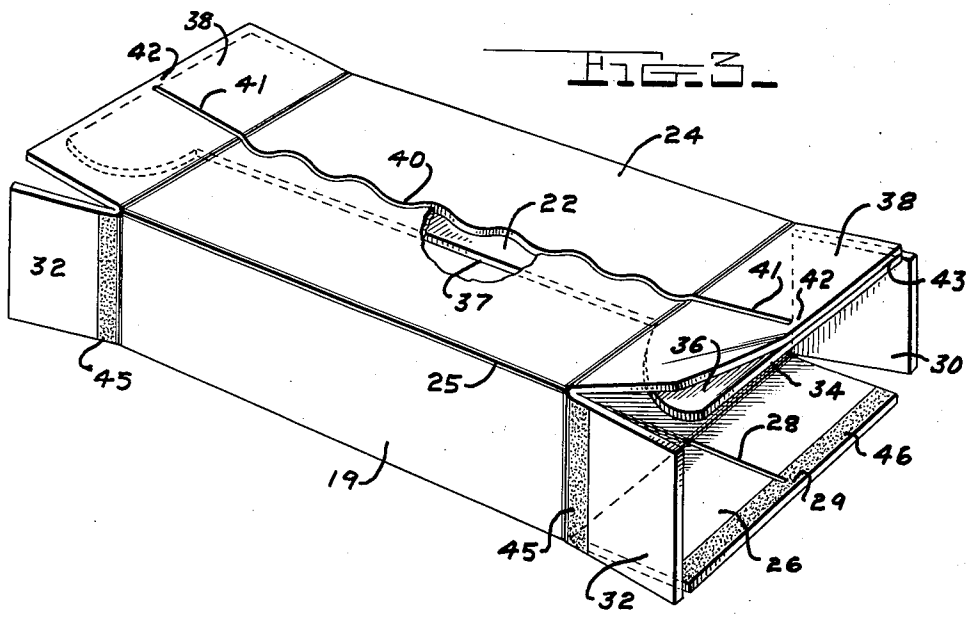

FIG. 4

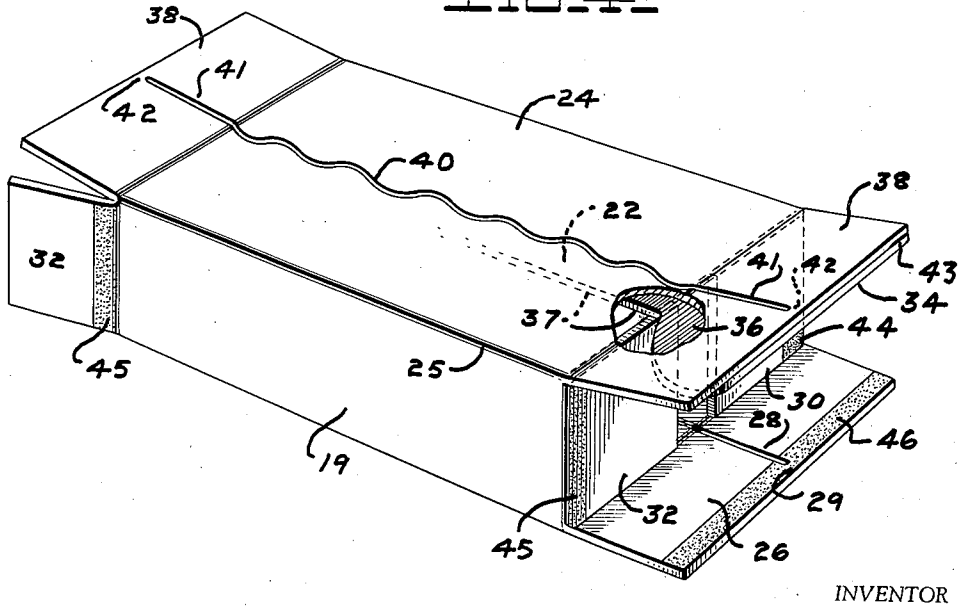

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FIG. 5

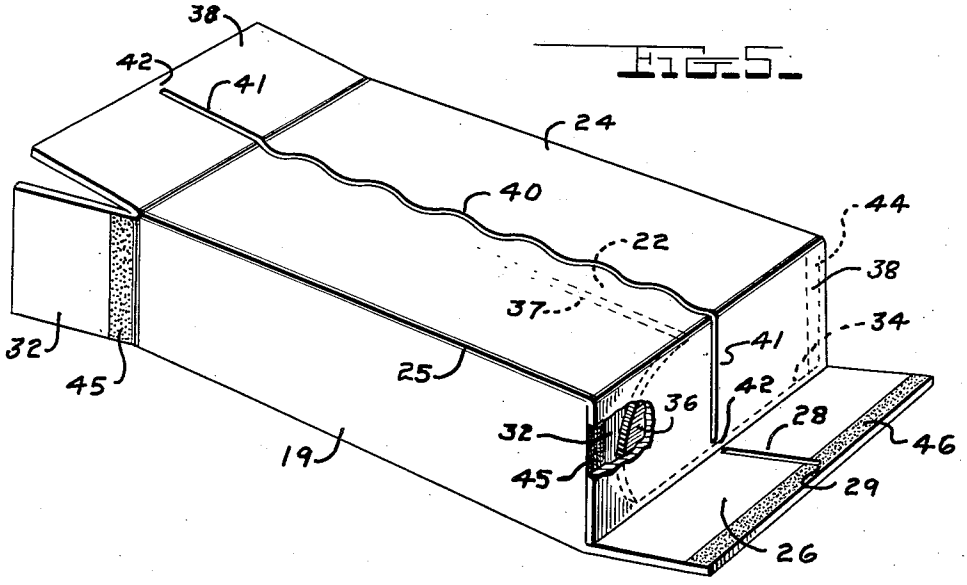

FIG. 6

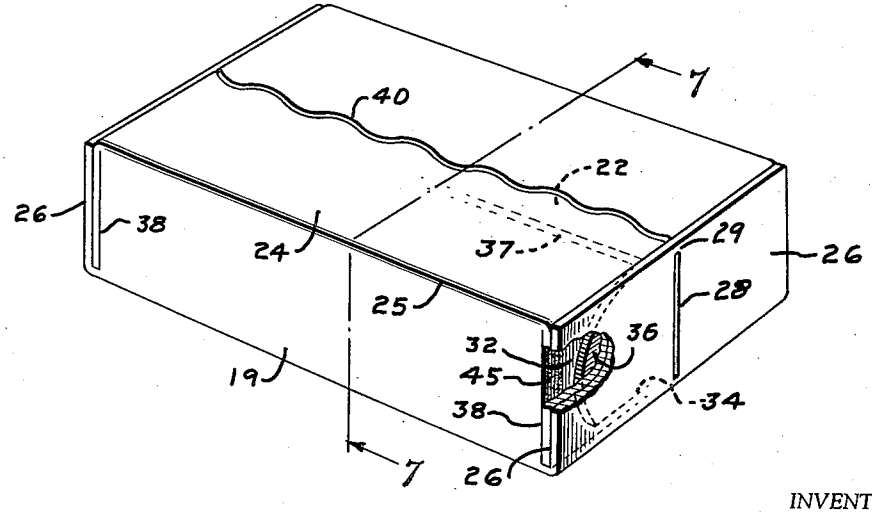

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FIG. 7

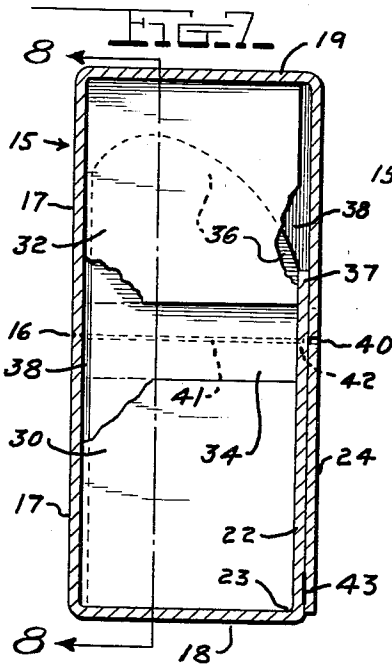

FIG. 9

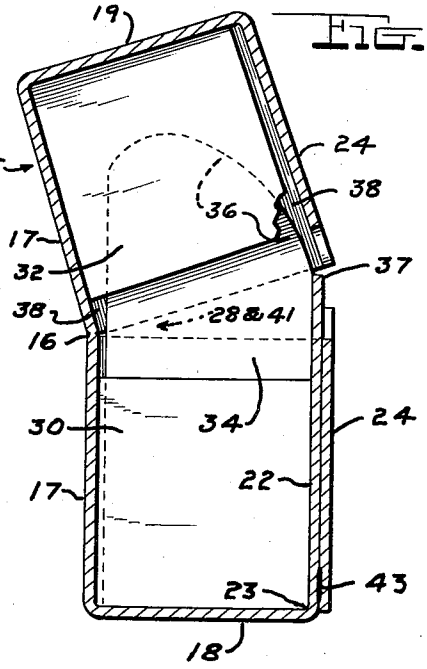

FIG. 8

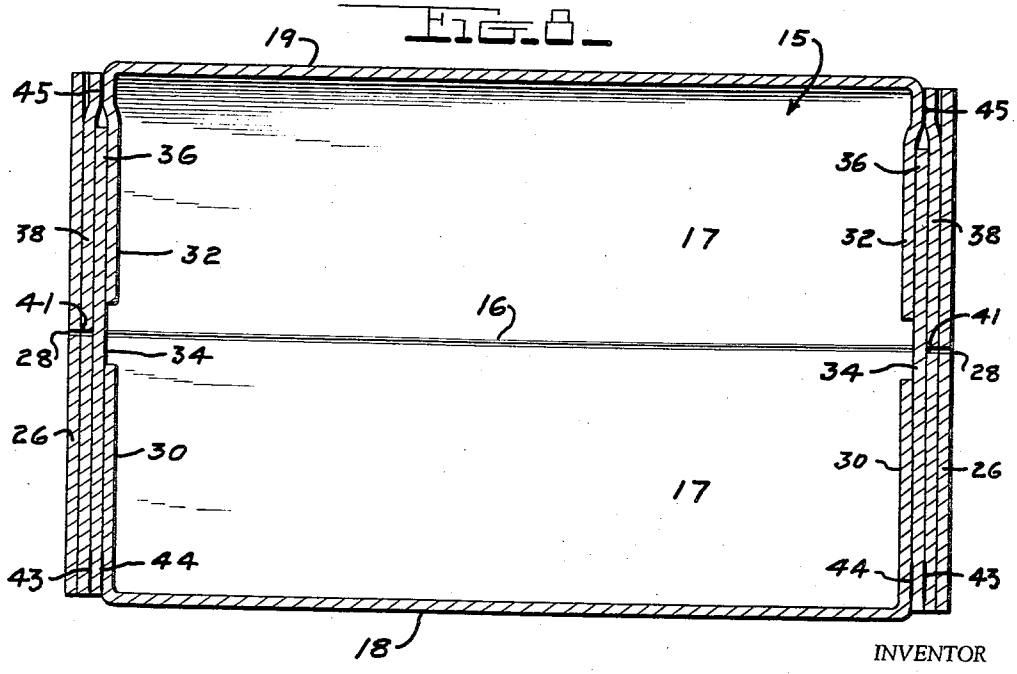

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FIG. 10

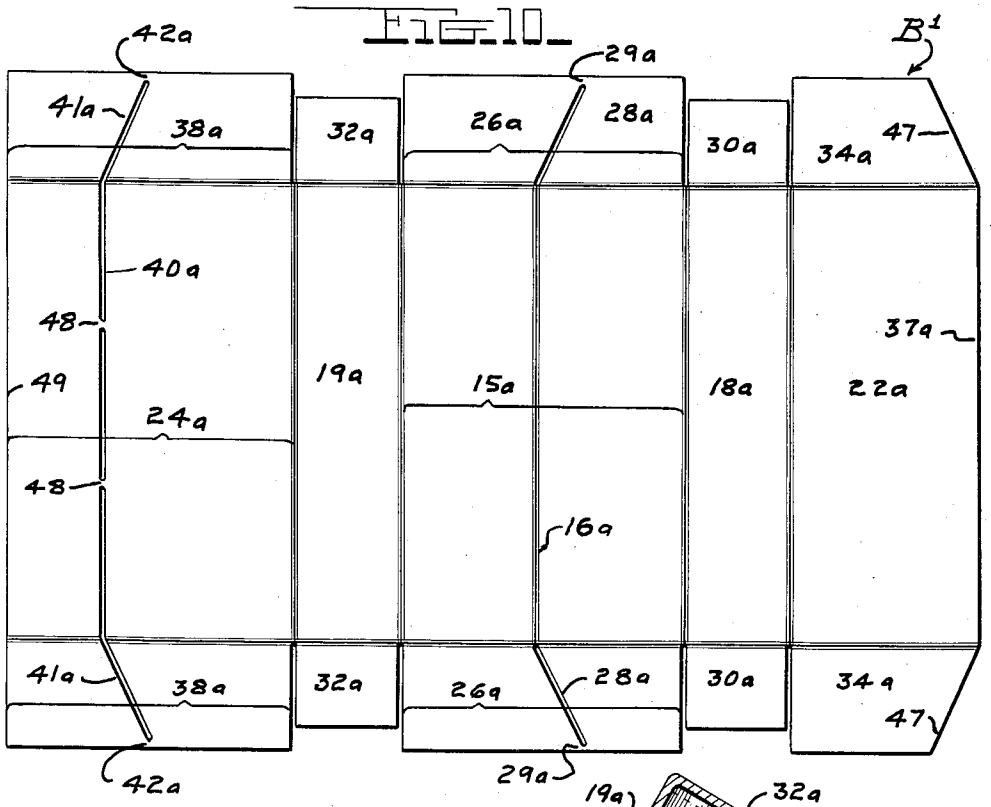


FIG. 12

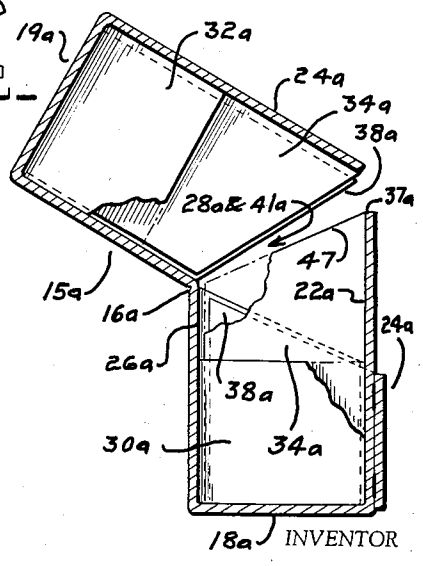
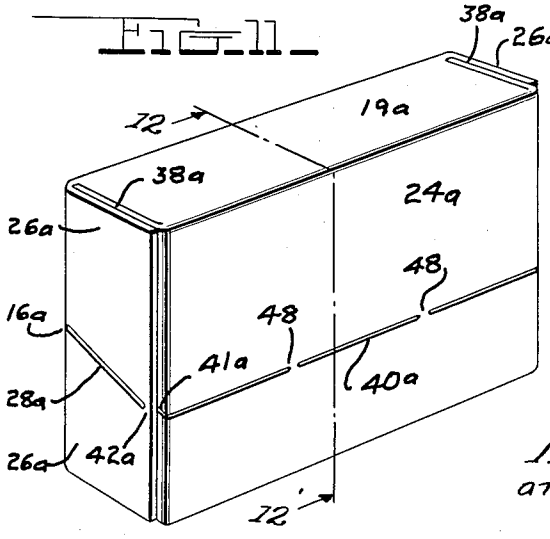


FIG. 11



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United States Patent Office 2,964,231 Patented Dec. 13, 1960

2,964,231

LONGITUDINAL SIDE OPENING CARTON AND BLANK THEREFOR

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Filed Jan. 8, 1958, Ser. No. 707,701

8 Claims. (Cl. 229—51)

The present invention relates broadly to cartons, and in its specific phases to a lengthwise side-opening hard pack cigarette package.

Until recently most cigarettes were packed in soft pack packages of twenty cigarettes each. Those packages, especially after a few cigarettes were used out of same, were subject to injury of the remaining cigarettes in the package unless very carefully handled. Flip top hard pack cigarette packages then came into use as a means of giving additional protection to the cigarettes remaining after the first few had been used from the package. These flip top packages were rather expensive to produce, caused some difficulty in closing when full or substantially full of cigarettes, and exposed only the end of the cigarettes for removal. It was a recognition of these difficulties and shortcomings of such hard pack cigarette packages, which led to the conception and development of the present invention.

Accordingly among the objects of the present invention is the provision of a simple and inexpensive carton and blank from which to form the same, such novel construction being one which permitsu nusually inexpensive and expeditious manufacture with little waste.

Another object is to provide a novel carton which is well adapted for cigarettes and may be conveniently opened lengthwise of its front, upon a longitudinal back hinge line, for ready cigarette removal, and may be easily reclosed after each such removal.

A further object is to provide a hard pack cigarette carton formed from a one-piece blank and precut lengthwise to facilitate initial opening of the package.

A further object is to provide an end stabilized hard pack cigarette package which is easily manipulated with one hand after same has been initially opened.

Still further objects and advantages of the present invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the special carton and blank therefor hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain means for carrying out the invention, such disclosed means illustrating, however, but several of various ways in which the principle of the invention may be used.

In the annexed drawings:

Figure 1 is a plan view showing one form of blank for producing a side opening carton in accordance with the present invention.

Figures 2 to 5, inclusive, are perspective views showing folding operations which are successively performed in forming a carton from the blank of Figure 1.

Figure 6 is a perspective view of the complete carton, having a portion broken away for better understanding of the construction involved.

Figure 7 is a transverse section taken on line 7—7 of Figure 6, looking in the direction of the arrows, the carton, however, being turned to a different position.

Figure 8 is a longitudinal section taken on line 8—8 of Figure 7, looking in the direction of the arrows.

Figure 9 is a view similar to Figure 7 but showing the carton partially opened.

Figure 10 is a plan view of a somewhat different blank for producing a side opening carton in accordance with the present invention.

Figure 11 is a perspective view of a carton formed from the blank of Figure 10.

Figure 12 is a fragmentary transverse section taken on line 12—12 of Figure 11, looking in the direction of the arrows, the carton, however, being partially opened.

The blank B of Figure 1 is folded in various ways, as shown in Figures 2 to 5, inclusive to form the complete carton illustrated in Figures 6 to 8, inclusive; and this carton is openable at its front as seen in Figure 9.

The blank B is of elongated generally rectangular form and is cut from sheet material such as cardboard, which is relatively rigid material. This blank includes a rectangular back wall panel **15** which is elongated transversely of said blank and is divided, by a hinge line **16** into two halves.

Two elongated rectangular edge wall panels **18** and **19** are integrally joined along longitudinal fold lines **20** and **21** to the longitudinal edges of the back wall panel **15**, respectively.

An inner elongated rectangular front wall panel **22** is integrally joined along longitudinal fold line **23** to the outer longitudinal edge of the edge wall panel **18** and is preferably a little wider than half the width of the back wall panel **15** to provide reinforcement for the slit opening **40** of outer front wall panel **24**, which it underlies.

An outer elongated rectangular front wall panel **24** is integrally joined along a fold line **25** to the outer longitudinal edge of the edge wall panel **19** and is of substantially the same width as the back wall panel **15**. The panels **24** and **22** are at opposite ends of the blank B, and all of the panels **15**, **18**, **19**, **22** and **24** are of the same length and have their ends aligned longitudinally of the blank.

Two rectangular outer end wall panels **26** are integrally joined along fold lines **27** to the ends of the back wall panel **15**, respectively. The outer end wall panels **26** are elongated longitudinally of the blank B and are of a length substantially equal to the width of the back wall panel **15**. The outer end wall panels **26** have two slits **28** which extend from the ends of the hinge line **16** of back wall panel **15** to points near the outer longitudinal edges of said outer end wall panels **26**, respectively, leaving these panels **26** with restricted uncut portions **29** at the outer ends of the slits **28**.

Two end wall flaps **30** are integrally joined along fold lines **31** to the ends of the edge wall panel **18**; and two additional end wall flaps **32** are integrally joined along fold lines **33** to the ends of the edge wall panel **19**.

Two inner end wall panels **34** are integrally joined along fold lines **35** to the ends of the inner front wall panel **22**. While the inner longitudinal edges of the inner end panels **34** are substantially as long as the width of the inner front wall panel **22**, said panels **34** have curved-edge extensions **36** which project beyond the free edge **37** of said panel **22** and form end supports for the finished carton as shown in Figures 7, 8, and 9.

Intermediate rectangular end wall panels **38** are integrally joined along fold lines **39** to the ends of the outer front wall panel **24**, respectively, and are of a length substantially equal to the width of said outer front wall panel **24**.

A slit **40**, which, for stability of the carton front panel and ease of closing the finished carton under conditions of use, is preferably sinuous, is formed longitudinally in the outer front wall panel **24** and is located about cen-

trally thereof; and two slits 41 are formed in the intermediate end wall panels 38, respectively. These slits 41 communicate at their inner ends with the slit 40; and the outer ends of said slits 41 terminate in slightly spaced relation with the longitudinal edges of the panels 38, leaving the latter with restricted uncut portions 42.

At the outer side of the blank B, on the inner front wall panel 22 adjacent the fold line 23 and on the inner ends of the inner end wall panels 34, glue is indicated at 43. Also, at the outer side of the blank, glue is indicated at 44 and 45, on the end wall flaps 30 and 32 near the fold lines 31 and 33, respectively. Additional glue is indicated at 46 at the inner side of the blank on the outer longitudinal edge portions of the outer end wall panels 26.

At least the glue 43 is applied at the factory, as it is there used to secure the outer front wall panel 24 upon the inner front wall panel 22, and the inner end wall panels 34 to the intermediate end wall panels 38, when the blank is folded beyond the intermediate stage of Figure 2 to the condition seen in Figure 3. The partly completed carton shown in this latter view is folded flat at the factory in readiness for shipment to packing plants at which the succeeding carton assembly steps and the carton filling operation are performed. It is during performance of these succeeding assembly steps that the glue 44, 45 and 46 is used. Therefore, this glue 44, 45 and 46 may be applied as the assembly steps are performed or, if it has been applied at the factory, it may simply be dampened for use.

When the folded-flat blank is opened by the packer to the condition shown in Figure 3, one end of the carton, for instance the right hand end, is closed by (1) folding the end wall flaps 30 and 32 inwardly toward each other as seen in Figure 4; (2) jointly folding the inner end wall panel 34 and the intermediate end wall panel 38 inwardly, as seen in Figure 5; (3) securing one end of said inner end wall panel 34 to the flap 30 by means of the glue 44; (4) securing the other end of the intermediate end wall panel 38 to the flap 32 by means of the glue 45; (5) inwardly folding the outer end wall panel 26 as seen at the right of Figure 6, and (6) securing said outer end wall panel 26 to said intermediate end wall panel 38 by means of the glue 46.

The carton, with one end closed, is then filled and the other end of the carton closed in the same manner as above described. The filled and completed carton is then in the form shown in Figures 6, 7, and 8. For better illustration, however, the carton contents have been omitted from Figures 7 and 8, and also from Figure 9 which shows the carton partly opened.

Considering the completed carton in the position shown in Figures 7 and 8, the two end wall flaps 30 project upwardly from the lower edge wall panel 18 and the two flaps 32 project downwardly from the upper edge wall 19. The inner end wall panels 34 project rearwardly from the inner front wall panel 22 and are secured at 44 against the outer sides of the lower flaps 30 but the extensions 36 are free of connection with the upper flaps 32. The intermediate end wall panels 38 project rearwardly from the outer front wall panel 24 and are secured at 43 to the intermediate panels 34 and also are secured at 45 to the upper flaps 32, above the extensions 36. The outer end wall panels 26 project forwardly from the back wall panel 15 and are secured by the glue 46, Figure 5, against the outer sides of the intermediate panels 38. The sinuous slit 40 of the outer front wall panel 24 is somewhat below the upper edge 37 of the inner front wall panel 22 and the slits 28 and 41 of the panels 26 and 38 respectively are in lateral registration with each other. The carton is held in this condition by the restricted uncut panel portions 29, Figure 6, at the front ends of the outer end wall panel slits 28.

To open the carton, it is simply necessary to break the restricted portions 29 and relatively swing the upper and lower halves of the carton upon the hinge line 16 of the back wall panel 15, Figure 9. During this movement, the upper end wall flaps 32 and the upper portions of the intermediate end wall panels 38 slide upon the extensions 36 and these extensions remain between said flaps 32 and panels 38 unless the carton is opened excessively. The closing movement of the carton is thus smoothly guided and the final movement is aided by the fluted formations of the meeting edges of the outer front wall panel 24, said fluted formations being due to the sinuous form of the slit 40.

In the blank B^1 of Figure 10, the various panels, flaps and slits correspond to those of the blank B in Figure 1. The same identifying numbers have therefore been used, plus the exponent "a"; and the differences between the two blanks will be explained below.

The outer edges 47 of the inner end wall panels 34^a are devoid of extensions and are obliquely disposed at an obtuse angle to the free outer edges of said panels 34^a. The slits 41^a of the outer end wall panels 38^a are oblique and disposed in outwardly converging relation with the oblique end edges of the inner panels 34^a. The slits 28^a of the intermediate end wall panels 26^a are oblique and disposed in parallel relation with the slits 41^a of the panels 38^a. The slit 40^a of the outer front wall panel 24^a is straight and interrupted by restricted panel portions 48. This slit 40^a is closer to the free outer edge 49 of the panel 24^a than to the parallel inner edge of this panel.

The blank B^1 is folded in the same manner as the blank of Figure 1 and suitably glued to form the complete carton of Figure 11. In this carton, when considered in the position shown in Figures 11 and 12, the slits 28^a and 41^a incline from the front wall 22^a, 24^a of the carton to the hinge line 16^a; and the upper edges 47 of the inner end wall panels 34^a decline from the upper edge 37^a of the inner front wall panel 22^a to said hinge line 16^a. The slot 40^a of the outer front wall panel 24^a is closer to the lower edge wall panel 18^a than the hinge line 16^a is to said edge wall panel 18^a.

By breaking the restricted uncut panel portions 42^a and 48, Figure 11, the carton halves may be relatively swung on the hinge line 16^a and the carton thus opened as shown in Figure 12. It may be re-closed easily and smoothly after each removal of some of the contents.

From the foregoing, it will be seen that novel and advantageous provision has been made for attaining the desired ends. However, attention is invited to the possibility of making minor variations within the spirit and scope of the invention as shown and described. The directional terms such as "upper," "lower," "downwardly," "front," et cetera, have been used as an aid in describing the invention in the various positions illustrated, and are not to be considered as a limitation on the invention.

Other modes of applying the principle of our invention may be employed instead of those explained, change being made as regards the carton and blank therefore which has been disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

We therefore particularly point out and distinctly claim as our invention:

1. An elongated substantially rectangular blank from which to form a sealed longitudinal front-opening carton, said blank comprising an elongated rectangular back wall panel divided by a longitudinal hinge line substantially into two halves, two elongated rectangular edge wall panels joined along longitudinal fold lines to the longitudinal side edges of said back wall panel respectively, an inner elongated rectangular front wall panel integrally joined along a longitudinal fold line to the outer longitudial edge of one of said edge wall panels, said inner front wall panel being of less width than said back wall panel, an outer elongated rectangular front wall panel integrally joined along a longitudinal fold line to the

outer longitudinal edge of the other of said edge wall panels, said outer front wall panel being of substantially the same width as said back wall panel, said inner and outer front wall panels being disposed at the ends of the blank, respectively, all of the aforesaid panels being of uniform length and having their ends aligned longitudinally of the blank, two rectangular outer end wall panels integrally joined to the ends of said back wall panel respectively, said outer end wall panels being elongated longitudinally of the blank and being of a length substantially equal to the width of said back wall panel, said outer end wall panels having two slits extending from the ends of the aforesaid hinge line, to points near the outer longitudinal edges of said outer end wall panels respectively, four end flaps integrally joined along fold lines to the ends of said edge wall panels respectively, two inner end wall panels integrally joined along fold lines to the ends of said inner front wall panel respectively, said inner end wall panels extending longitudinally of the blank and having their inner longitudinal edges of a length substantially equal to the width of said inner front wall panel, and two intermediate end wall panels integrally joined along fold lines to the ends of said outer front wall panel, respectively, said intermediate end wall panels being elongated longitudinally of the blank and being of a length substantially equal to the width of said outer front wall panel, said outer front wall panel and said intermediate end wall panels being slitted along a line which extends longitudinally of said outer front wall panel and transversely of said intermediate end wall panels to points near the outer longitudinal edges of said intermediate end wall panels.

2. A structure as specified in claim 1, in which the outer ends of said inner end wall panels are provided with integral extensions projecting beyond the free outer edge of said inner front wall panel, said slits of said outer end wall panels being unidirectional with said hinge line, the slits of said intermediate end wall panels being parallel with said slits of said outer end wall panels, the slit of said outer front wall panel being sinuous and disposed substantially centrally of this panel.

3. A structure as specified in claim 1, in which the outer end edges of said inner end wall panels are oblique and disposed at an obtuse angle to the free outer edge of said inner front wall panel, said slits of said outer end wall panels being oblique and disposed in outwardly converging relation with said oblique end edges of said inner end wall panels, the slits of said intermediate end wall panels being oblique and disposed in parallel relation with said oblique slits of said outer end wall panels, said outer front wall panel being slitted along aligned, slightly spaced straight lines, these lines being closer to the free outer edge of said outer front wall panel than to the parallel inner edge of this panel.

4. A front-opening carton of cardboard or similar relatively rigid material, said carton having cigarettes or other goods therein, comprising an elongated rectangular back wall panel having a longitudinal hinge line, two elongated rectangular edge wall panels projecting forwardly from said back wall panel and integral with the longitudinal edges thereof, an inner elongated rectangular front wall panel integral with the front edge of one of said edge wall panels, said inner front wall panel being of less width than said back wall panel and having a free longitudinal edge spaced from the other of said edge wall panels, an outer elongated rectangular front wall panel integral with the front edge of said other edge wall panel and extending substantially to the plane of said one edge wall panel, said outer front wall panel having a longitudinal slit between said one of said edge walls and said free edge of said inner front wall panel, the portion of said outer front wall panel at the side of said slit toward said one edge wall panel being secured to said inner front wall panel, the portion of said outer front wall panel at the other side of said slit being free of connection with said inner front wall panel, two end wall flaps integral with the ends of said one edge wall panel and projecting toward said other edge wall panel, two additional end wall flaps integral with the ends of said other edge wall panel and projecting toward said one edge wall panel, two inner end wall panels integral with the ends of said inner front wall panel and projecting toward said back wall panel, said inner end wall panels being secured against the outer sides of the first mentoned end flaps but being free from connection with said two additional end flaps, two rectangular intermediate end wall panels integral with the ends of said outer front wall panel and projecting substantially to the plane of said back wall panel, said intermediate end wall panels having slits extending from the ends of the slit of said outer front wall panel to points near the ends of the hinge line of said back wall panel, the portions of said intermediate end wall panels at one side of the slits of the latter and toward said one edge wall panel being secured against said inner end wall panel, the portions of said intermediate end wall panels at the other side of the slits of the latter being free from connection with said inner end wall panels but being secured to said two additional end wall flaps, and two outer rectangular end wall panels integral with the ends of said back wall panel and secured against the outer sides of said intermediate end wall panels, said outer end wall panels having slits registering with said slits of said intermediate end wall panels and terminating in slightly spaced relation with the front edges of said outer end wall panels, whereby said carton may be readily opened along said slit extending to the ends of said hinge line to expose the goods contained in said carton, and with said inner front undercovering and closing said slit in the front wall of said wall carton when the latter is closed.

5. A carton structure as specified in claim 4, in which said inner end wall panels have extensions slidably received between said two additional end flaps and the opposed portions of said intermediate end wall panels.

6. A carton structure as specified in claim 4, in which said inner end wall panels have extensions slidably received between said two additional end flaps and the opposed portions of said intermediate end wall panels, the slit of said front wall panel being sinuous and uninterupted full length of said panel. the sinuous edges of said front wall slit interengaging to help stabilize the two portions of said front panel against relative endwise movement.

7. A carton structure as specified in claim 4, in which the end edges of said inner end wall panels which extend toward said other edge wall panel are disposed at an acute angle to said inner front wall panel and extend substantially to said hinge line of said back wall panel, the slit of said outer front wall panel being spaced a shorter distance from said one edge wall panel than said hinge line is spaced from said one edge wall panel, the registering slits of said intermediate and outer end wall panels being oblique and in rearwardly converging oblique end edges of said inner end wall panels.

8. A carton structure as specified in claim 4, in which the end edges of said inner end wall panels which extend toward said other edge wall panel are disposed at an acute angle to the edge of said inner front wall panel and extend substantially to said hinge line of said back wall panel, the slit of said outer front wall panel being spaced a shorter distance from said one edge wall panel than said hinge line is spaced from said one edge wall panel, the registering slits of said intermediate and outer end wall panels being oblique and in rearwardly converging relation with said oblique end edges of said inner end wall panels, said slit of said outer front wall panel being interrupted for short distances at intervals.

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UNITED STATES PATENT OFFICE

CERTIFICATION OF CORRECTION

Patent No. 2,964,231 December 13, 1960

Harold G. Hanselman, Jr., et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 36, for "permitsu nusually" read -- permits unusually --; column 4, line 38, for "slot" read -- slit --; column 6, line 58, after "converging" insert -- relation with said --.

Signed and sealed this 4th day of July 1961.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents