Jan. 27, 1959 J. F. CURRIVAN 2,870,949

CARTONS

Filed Nov. 30, 1954

2 Sheets-Sheet 1

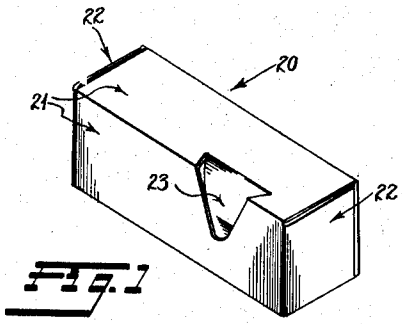


Fig. 1

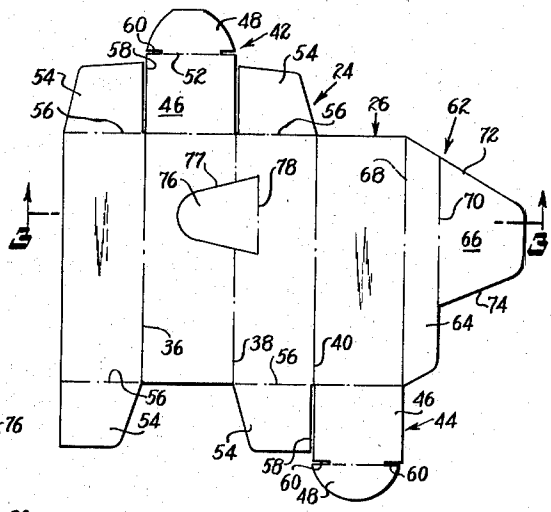


Fig. 2

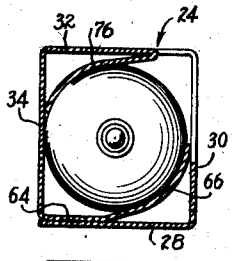


Fig. 3

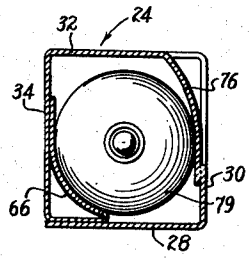


Fig. 4

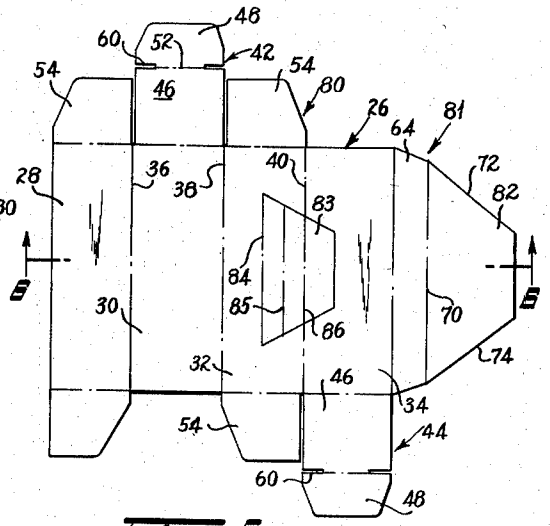


Fig. 5

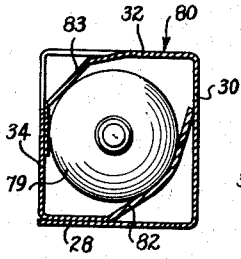


Fig. 6

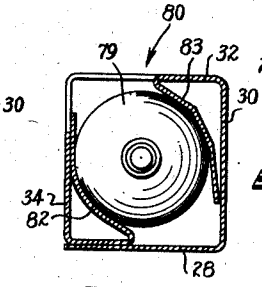


Fig. 7

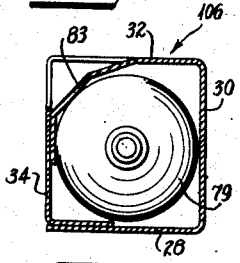


Fig. 16

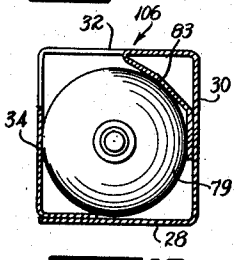


Fig. 17

INVENTOR

JOHN F. CURRIVAN

BY Strauch, Nolan & Diggins

ATTORNEYS

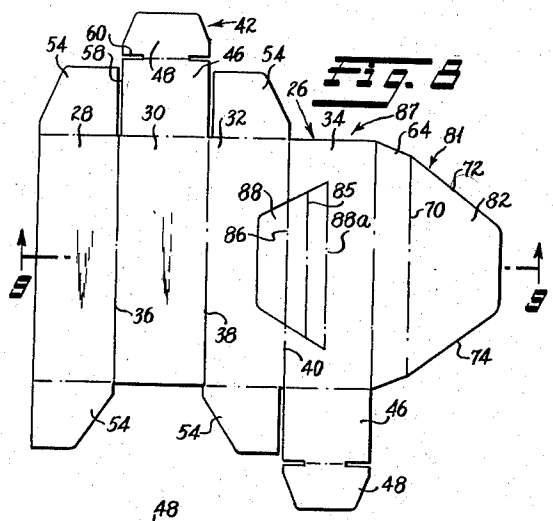
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Fig. 8



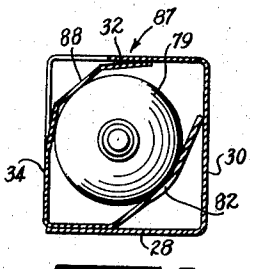


Fig. 9

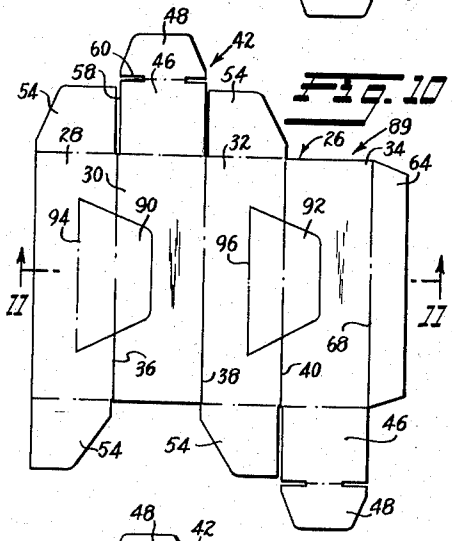


Fig. 10

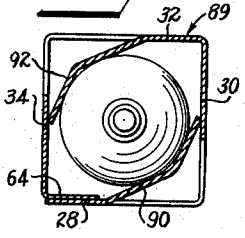


Fig. 11

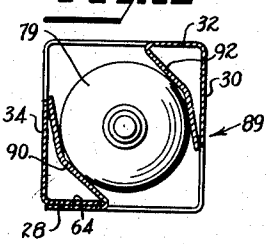


Fig. 12

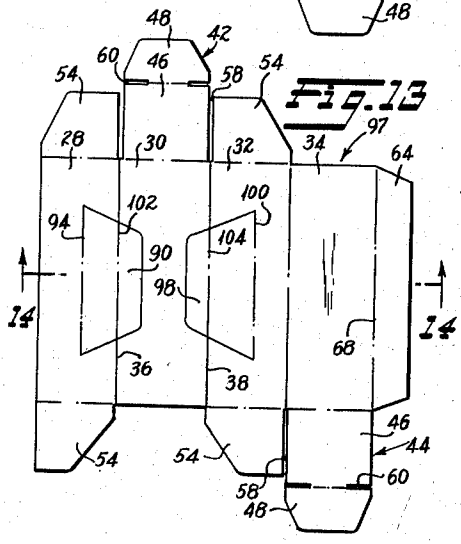


Fig. 13

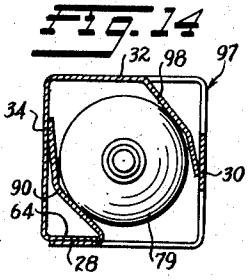


Fig. 14

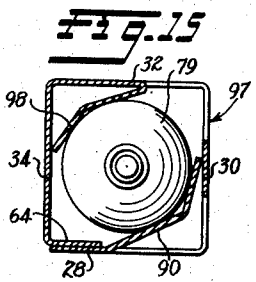


Fig. 15

INVENTOR.
JOHN F. CURRIVAN
BY
Strauch, Nolan & Diggins
ATTORNEYS

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2,870,949

CARTONS

John F. Currivan, Portland, Conn.

Application November 30, 1954, Serial No. 471,974

11 Claims. (Cl. 229—14)

This invention relates to cartons and more particularly to integral cartons for the protective containment of fragile articles such as vacuum tubes, medicine vials and like articles.

Many attempts have been made to provide cartons of this general type in an effort to meet the manifold and often conflicting requirements imposed by a highly competitive industry.

It is desirable in such cartons that the contents be resiliently positioned within the carton out of contact, to the greatest degree possible, with the outer panels of the carton. In order to minimize manufacturing costs, it is desirable that the cartons be adaptable to production entirely by machine, preferably standard, existing carton making machines, and require a minimum amount of stock or board both actually used and discarded as trimming waste. Further it is desirable that the finished carton be capable of being erected, filled and closed in one continuous machine operation.

Further important criteria which protective cartons must satisfy are the ability to collapse and lie flat for shipment; to stack evenly, for example, in the magazine of a loading machine and, upon erection to assume a symmetrical easily nesting configuration so as to permit selected lots of the loaded cartons to be packed in an ultimate shipping container of minimum volume. Also adding to the practical utility and desirability of such cartons is a maximum degree of versatility whereby a variety of cartons can be erected from identical or slightly modified basic blank configurations in order to obtain the carton best suited to a particular article or requirement.

The cartons best fulfilling these requirements are disclosed in a pending application Serial No. 379,180, filed September 9, 1953, for Improved Integral Cartons. The present invention contemplates substantial improvements in protective cartons generally, including those disclosed in said application, as particularized in the following objects.

The primary object of the invention is the provision of novel cartons for the protective containment of readily frangible articles and blanks for such cartons.

Another important object is the provision of novel cartons and carton blanks which are of integral one-piece construction and provide resilient inner panels for protectively isolating the contents from the outer panels and require less board than known cartons having inner panels.

Still another object is to provide novel cartons and carton blanks in which one or more of the inner panels consist of tabs cut from medial portions of the outer panels whereby resilient isolation of the contents is achieved in a carton erected from a blank requiring less board than known cartons having such inner panels and, in said certain forms, no more board than is necessary to form only the outer panels and customary end closure flaps.

A still further object is to provide improved integral protective cartons having resilient isolating inner flaps which collapse flat and, in collapsed condition, are of uniform thickness throughout the body portion whereby large numbers of collapsed cartons can be stacked without the tendency of the pile to tilt or the need for end to end reversing of equal numbers of cartons in the stack.

A further object is the provision of novel integral protective cartons in which the protective inner panels, cut from the outer panels, are easily disposed in a preselected position within the carton during or after erection thereof and are finally positioned by the contents during loading.

Another object of the invention, in certain of its disclosed embodiments, is to provide novel blanks for integral protective cartons whereby identical and slight modified blanks can be selectively erected to obtain different cartons in respect to the configuration and relative dispositions of their resilient inner panels.

A further object of the invention, in certain of its disclosed embodiments, is the provision of improved integral protective cartons having one or more resilient isolating inner flaps cut from the outer panels wherein one of said outer panels is uncut to provide a symmetrically shaped, uninterrupted exterior surface for advertising and/or identification material.

Still another object of the invention is the provision of improved integral protective cartons according to the preceding objects having only a single glue seam.

These and other objects and advantages of the invention and the means of their accomplishment will be apparent to those conversant with the art from a reading of the following description and subjoined claims in conjunction with the annexed drawings which illustrate certain preferred forms of the invention and in which:

Figure 1 is a perspective elevation of a typical carton according to the present invention being representative of the general appearance of cartons of all forms disclosed herein;

Figure 2 is a plan view of one form of carton blank embodying the invention;

Figure 3 is a transverse section taken on line 3—3 of Figure 2 with the blank fully erected and loaded and with the inner panels disposed in one possible relative arrangement;

Figure 4 is a section similar to Figure 3 of the blank shown in Figure 2 fully erected and loaded but with the inner flaps in an alternative relative arrangement;

Figure 5 is a view similar to Figure 2 showing a slightly modified form of blank;

Figures 6 and 7 are sections similar to Figures 3 and 4 taken on line 6—6 of Figure 5 and showing the alternate disposition of inner flaps possible with the blank of Figure 5;

Figure 8 is a view similar to Figures 2 and 5 showing a further modification of the basic blank configuration;

Figure 9 is a section similar to Figures 3, 4, 6 and 7 taken on line 9—9 of Figure 8 with the blank fully erected and loaded;

Figure 10 is a view similar to Figures 2, 5 and 8 showing a different type of blank in which both inner protective flaps are cut from the outer panels;

Figures 11 and 12 are sections, similar to Figures 3, 4, 6, 7 and 9, on line 11—11 of Figure 10 showing alternate possible inner flap arrangements in the erected carton;

Figure 13 is a plan view of a modified form of the type of blank shown in Figure 10 wherein one entire outer panel is uncut;

Figures 14 and 15 are sections, similar to Figures 3,

4, 6, 7, 9, 11 and 12, on line 14—14 of Figure 13 showing alternate possible inner flap arrangements in the erected carton; and

Figures 16 and 17 are sections, similar to Figures 3, 4, 6, 7, 9, 11 and 12, showing further modifications applicable to all forms of the novel cartons and carton blanks disclosed.

Referring now to the drawings wherein like reference numerals are used to indicate like and corresponding parts throughout the several views, Figure 1 shows a typical, fully-erected carton **20** embodying the present invention. Such a carton would be used, for example, to package a radio or television tube and for this particular use is substantially a rectangular parallelepiped being composed of four rectangular outer side wall panels **21**, and end closure flap assemblies **22**. As shown in Figure 1, the exterior of the carton **20** appears conventional in all respects except for the cut-out portion **23** which forms an inner flap for resiliently positioning the tube in spaced relation to the outer walls as will be fully explained in the description which follows.

Figure 2 illustrates one form of blank indicated generally at **24**, ready for but prior to the folding and gluing. Blank **24** is cut from sheet cardboard stock, of suitable weight and substance.

Blank **24** consists of a substantially rectangular body portion **26** divided into four contiguous rectangular panels **28**, **30**, **32** and **34** by three parallel fold lines **36** and **38** and **40**. These fold lines, which form the corners of the erected carton, as well as all others not yet specifically mentioned are formed or defined by suitable scores on the blank, usually regular scores, although other types known in the art, for example, cut scores, perforated scores, etc., may be employed depending on the character of fold desired, particularly its resiliency and degree of sharpness. Throughout this description, the term scores or fold lines indicate regular scores or fold lines although it will be understood that in most cases the type of score will be determined according to the requirements of a particular application.

One end of body portion **26** of the blank is formed with an integral extension **62** foldably related to the body portion along and divided into a glue lap panel **64** and an inner protective flap **66** by fold lines **48** and **50**, respectively.

Glue lap **64** is narrower than panels **28**, **30**, **32** and **34** which form the outer walls of the erected carton, being of a width sufficient only to provide an adequate gluing area, while flap **66** is of such a width that the total length of extension **62**, i. e., the combined widths of the glue lap **64** and flap **66** exceeds the width of individual panels **28**, **30**, **32** and **34** but is less than the distance separating diagonally opposite corners of the carton when the carton is in collapsed condition. The purpose for these dimensional requirements will become apparent as the description proceeds.

One end of panel **30** and the opposite end of panel **34** carry integral closure extensions **42** and **44**, respectively, each divided into main end closure flap **46** and a tuck flap **48** by fold lines **52**. As is well known, flaps **48** tuck inside the side wall opposite, in the erected carton, to that which they are attached, flaps **46** thus forming the end walls of the erected carton. The carton illustrated and described is of the "reverse tuck" type, i. e., wherein the respective end closures tuck in opposite directions. This type is the most economical to manufacture because it permits better nesting of blank outlines and so conserves board. It will be understood, however, that the "straight tuck" type of closure, i. e., wherein both closure flaps are on opposite ends of the same side wall panels may be used. Also, closure flaps may be used on all panels if a glued end carton is required.

Both ends of panels **28** and **32** are provided with secondary closure flaps **54** separated from the respective panels by fold lines **56**. These flaps fold inwardly and underlie main closure flaps **46** when the erected carton is closed. Accordingly, the location of flaps **54** is dependent on the location of the end closure flaps and therefore are placed on panels other than those carrying the main closure flaps and/or the panels opposite them in the erected carton.

In forming the carton blank, the flaps **46** and **54** are preferably separated by a line cut **58** which has been exaggerated in thickness throughout the drawings for sake of clarity.

Either or both of the end closure extensions **42** and **44** preferably are provided with short line cuts **60** (also exaggerated for clarity in the drawings) running substantially along the fold lines **50** between flaps **46** and **48** for locking the carton closed in a manner well known in the art.

In the blank shown in Figure 2, the upper edge of flap **66** is inclined as at **72** to form a camming surface which facilitates loading the carton, closing the end flap assemblies and positioning the inner flap by the contained article as it is inserted. The lower edge of flap **66** is also provided with an inclined camming edge **74** but it will be understood that, where a carton adapted to contain an article such as a radio tube having a base which is relatively larger and more resistant to breakage than the glass upper part, the corresponding end of the panel can be cut away (as is the lower end of flap **66**) to accommodate the tube base.

The body portion **26** of the blank is formed with a second protective inner flap consisting of a tab **76** cut out of panels **30** and **32** and foldably hinged at one end to panel **32** along a fold line **78** substantially parallel to fold lines **36**, **38**, **40**. Tab **76** preferably is of a shape, such as shown in Figure 2, wherein the lateral edges **77** are inclined with respect to each other and preferably is foldably connected at its large end. The purpose of this preferred tab construction, as well as the tabs of the modified forms of the invention hereinafter described, will become apparent as the description proceeds.

As shown in Figure 2, tab **76** intersects fold line **38**. The score **38** may be discontinuous or, if desired, may be continuous and extend directly across tab **76**.

The carton blank as its appears in Figure 2 is completed and ready for folding and gluing. The folding, gluing, and erecting operations may be carried on by standard machinery adapted to perform the steps, and may be varied in order to achieve the particular positioning of the inner flap desired, the alternate positions possible being shown in Figures 3 and 4.

When the inner flaps are to be positioned as shown in Figure 3, the flap extension **62** (comprising flap **66** and glue lap **64**) is first folded to the left along fold line **68** and then tab **76** is folded to the right on fold line **78** so that the free end thereof overlies the end of extension **62** remote from fold line **68**. The operation is completed by fold panels **28** and **30** as a unit to the right along fold line **38** so that the free edge of panel **28** overlaps glue lap panel **64**. A suitable adhesive is applied to the appropriate surfaces of panel **64** and/or **28** before, during or upon completion of the folding operation. Thus the carton is completed in a collapsed condition ready for erection which may be accomplished in a standard loading machine by exerting pressure on the fold lines **38** and **68** which define diagonally opposite corners of the erected carton.

With the blank folded as described above, when the carton is erected the tab **76** and flap **66** are free to assume the position shown in Figure 3 when an article **79** is inserted into the carbon. In this position the inner flap, i. e., flap **66** and tab **76** span diagonally opposite corners of the erected carton and thus resiliently support the article **79** out of contact with the side wall panels of the carton.

By means of a variation in the folding procedure the tab **76** and flap **66** may be positioned as shown in Figure

4. To this end inner flap **66** is folded to the left along fold line **70** and then panel **34** is folded to the left along fold line **40** and finally panel **28** is folded to the right along fold line **36** and the carton glued in a suitable manner. In this case erection is accomplished by exerting pressure on corner fold lines **36** and **40** and during erection tab **76** is pushed inwardly to displace it from the side wall panels from which it is cut until the free end of the tab is in sliding abutment with the inner surface of panel **30**. When erection is complete inner flap **66** and tab **76** are free to assume the corner-spanning positions shown in Figure 4 when an article **79** is loaded into the carton. It will be understood and become more apparent as the description proceeds with the disclosure of modified forms of the invention, that the shape and location of tab **76** and inner flap **66** may be varied to suit the requirements of any particular case and may be suitably scored to achieve particular desired flap configurations.

The flap configurations disclosed herein are, however, preferred for the following reasons. In the first place, the inclined edges **77** function as camming edges to facilitate loading of the carton. Secondly, these inclined edges, coupled with the fact that tab **76** is hinged at its larger end, serves to more positively retain the tab in its article supporting position against the tendency of the article **79** to force it back into the aperture left in the side wall by displacement of the tab. This is because the tab will fit into said aperture only in one relative position as compared, for example, with a rectangular tab wherein the lateral edges are parallel with respect to each other and the corresponding edges of the aperture.

The dimensional limitations on the length of extension **62** relative of the width of the side wall panels mentioned earlier in the description, are such as to permit the carton to lie completely flat when collapsed and permit the inner flaps to assume a proper position when the carton is erected and loaded.

Due to the simplicity of the blank, cutting, scoring, folding, gluing and erecting operations of the carton may be carried out on standard machinery. The body portion **26** of the blank described above forms the body of the carton and is the same for all forms of the novel cartons contemplated by the invention with such variations between straight, reverse tuck or glued end closure flap arrangement and location as may be desired and/or necessary in view of the particular form of the inner flaps and the use to which the carton is to be put. For this reason, the remainder of this description is restricted primarily to variations in the inner flap construction.

In Figure 5 there is shown a modified form of blank designated at **80**, embodying the basic principles of the present invention. In this modification body portion **26** has an extension **81** corresponding to **62** in Figure 2 which is formed with a flap **82** which is symmetrical about the horizontal center line of the body portion. Flap **82** has cam surfaces **72** and **74** similar in form and function to those correspondingly numbered in Figure 2. In blank **80** an inner flap defining tab **83** corresponding to **76** in Figure 2 is cut from panels **32** and **34** and is separated from the former by a fold line **84**. If desired, tab **83** may be provided with a pair of parallel fold lines **85** and **86** defined by suitable score marks on the carton blank, the latter being coincident with corner fold line **40** of the carton body. Tab **83** is trapezoidal in the form and is centrally located relative to the upper and lower edges of the carton body portion **26**.

As in the case of the blank form shown in Figure 2, this modified blank may also be erected to achieve two distinct variations in the disposition and relative arrangement of the inner flap **82** and tab **83** as shown by Figures 6 and 7. The folding procedures for effecting these variations is entirely analogous to those already described for the initial embodiment. Thus, for the flap arrangement shown in Figure 6, extension **81** is folded to the left along line **68**, panels **28** and **30** as a unit are folded to the right along fold line **38** and tab **83** is pushed in during erection. For the flap arrangement in Figure 7 the tab **83** is folded to the left along line **84**, extension **81** is folded to the left along line **68** and panels **28** and **30** are folded as a unit to the right along line **38**.

It will be noted in these last folding steps that as the panels **28** and **30** are folded to the right, tab **83** will likewise move to the right and tend to return to its original position. In so doing, however, it will overlie the free end of flap **82**. Erection of parts by exerting pressure on the appropriate corners will result in the panels being free to assume the positions illustrated in Figures 6 and 7 when article **79** is inserted.

A third embodiment of the basic carton form is shown in blank **87** illustrated in Figure 8, this blank, it will be noted, is in all respects identical with that of Figure 5 except that the inner flap defining tab **88**, corresponding to tab **83** of Figure 5 is reversed, i. e., it is foldably connected to panel **34** along line **88***a* rather than to panel **32**. With such a blank only one flap arrangement is feasible in the erected carton, such arrangement being shown in Figure 9 as it appears with article **79** loaded in the carton. Folding of the carton is the same as described for obtaining the flap positions shown in Figure 6 from the blank shown in Figure 5.

It is pointed out that achieving inner flap positioning as shown in Figures 4, 6 and 9, that is, where the cut-out tab is not folded back on itself, it is necessary to press the tab inwardly so that the free end thereof slips within the carton and is in sliding abutment with the inner surface at the side wall panel from which it is cut. This may be done by suitable means incorporated in standard cartoning machinery and once the tab is so disposed, it will not become displaced in any normal usage to which the carton may be subjected.

The modifications of the present invention thus far described have the advantage that the amount of board or stock which normally is employed to form the inner flaps is reduced by reason of the fact that one of such flaps is cut from normally imperforate side wall panels.

Following, are still further modifications of the invention wherein the same amount of protection of the contained article achieved in a carton utilizing exactly the same amount of board necessary to form conventional cartons of the same size and shape but having no inner protective flaps whatsoever.

Referring now to Figure 10, there is shown a carton blank **89** comprising a body portion **26** identical with the body portion of the blank shown in and described in conjunction with Figures 2 and 5. It will be noted however that blank **89** comprises only the side wall panels **28**, **30**, **32**, and **34**; the end closure flap assemblies **42** and **44** and a glue lap **64**, i. e., there is no inner flap extension such as **62** of Figure 2 or **81** of Figures 5 and 8 extending from the glue lap **64**. Thus it will be appreciated that the total plane area of this blank utilizes only the amount of board required to form the outer side wall panels and end closures of a standard carton.

A pair of identical trapezoidal inner tabs **90** and **92**, are cut from the medial adjacent portions of side wall panels **28**, **30** and **32**, **34** and are foldably connected to side wall panels **28** and **32** along fold lines **94** and **96**, respectively.

It will be noted that in the case of both tabs **90** and **92**, the scores defining respective corner fold lines **36** and **40** extend directly across the tabs so that the tabs will bend along these fold lines when an article is inserted in the carton as clearly shown in Figures 11 and 12. It is pointed out, however, that if desired the scores defining respective fold lines **36** and **40** may be made

discontinuous so that tabs **90** and **92** are unscored, such as is the case of tab **76** in Figure 2, or a plurality of score marks such as **85** and **86** on tabs **83** and **88** of Figures 5 and 8, respectively, may be provided.

As in the case of the first and second described embodiments, the blank **89** may be folded in order to obtain two distinct variations in the position of the flaps, such positions being shown in Figures 11 and 12. In order to have the flaps arranged as in Figure 11, the blank is folded by first folding glue lap **64** to the left along fold line **68** and then folding panels **28** and **30** as a unit to the right along fold line **38** so that the free edge of panel **28** overlaps glue panel **64** and may be secured thereto with adhesive in any suitable manner. To achieve the flap positioning shown in Figure 12, glue lap **64** and tabs **90** and **92** are folded to the left along fold lines **68**, **94** and **96** respectively and then panels **28** and **30** are folded as a unit to the right along line **38**. During this last folding step it will be noted that panel **30** tends to fold tab **92** back to its original position and while this is taking place tab **90** is allowed to spring back so that the free edge thereof slides under the free edge of tab **92** before the latter is moved completely back to its original position whereupon folding and gluing is completed. Erection of both forms of cartons may be achieved by exerting pressure on the appropriate diagonally opposite corners of the carton whereupon the inner flaps are automatically freed to assume the corner-spanning positions shown in Figures 11 and 12 upon the insertion of the article therein.

While the blank form shown in Figure 10 is highly desirable from the standpoint of conserving the amount of stock used in the carton it may have a drawback in certain applications because all four side wall panels **28**, **30**, **32** and **34** are cut by the tabs **90** and **92** and therefore the amount and shape of space remaining for advertising and like printed matter on the carton is limited. This possible disadvantage has been overcome in still another form of the invention, shown in Figures 13, 14 and 15, in which an entire side wall panel is left intact for advertising purposes without the use of any additional board.

Referring then to Figure 13, it will be seen that the carton blank **97** is in all respects identical to blank **89** shown in Figure 10 except that tab **98** which corresponds to tab **92** of blank **89** is cut from panels **30** and **32** and faces oppositely with respect to tab **90**, being foldably connected to panel **32** along fold line **100**. Thus panel **34** is left intact.

The alternate positions in which the tabs **90** and **98** may be arranged are shown in Figures 14 and 15. Inasmuch as both tabs **98** and **90** are scored on lines **102** and **104** coincident with fold lines **36** and **38**, respectively, an alternative form of carton erection will now be described and it will be understood that this method of folding and erecting may be availed of in any of the embodiments described herein. In this method, which is the same as far as the actual folding procedure is concerned for both of the alternative flap positions, glue lap **64** is folded to the left along line **68** and panels **28** and **30** folded to the right along fold lines **38**. It will be noted that in folding panels **28** and **30** along fold line **38** the free end portion of tab **98**, which lies in panel **30**, will also be folded over on the hinge end portion which lies in panel **32**. Furthermore when the blank is folded, glued and erected by squeezing the proper corners in the manner already described, the tab **90** will fold along line **102** as the corner defined by line **36** takes shape during erection. Thus, when erection has been completed, both tabs remain in place in the respective side wall panel openings from which they are cut.

If the flap arrangement in Figure 14 is desired, tab **90** is first pushed into the interior of the carton and folded back on itself and then tab **98** is similarly pushed in until the free edge of itself is in sliding abutment with the inner surface of panel **30**. Upon insertion of the article **79** tabs **90** and **98** will assume positions shown in Figure 14.

To position the flaps as shown in Figure 15, the same folding and erection procedure is followed but the flaps are pushed in reverse order, that is, tab **98** is pushed in first and folded back on itself and then tab **90** is pushed in until the free edge thereof is in sliding contact with the interior surface of side wall panel **30**.

As mentioned above the folding procedures outlined for all of the embodiments disclosed herein may be varied by pushing the cut-out tabs into position after the carton is erected. This may be accomplished by suitable means incorporated in standard carton loading machinery.

In all embodiments of the invention thus far described, the cartons comprise two inner flaps spanning diagonally opposite corners of the carton and at least one of which flaps is a tab cut from side wall panels of the carton. It is to be understood that the tabs described may be varied extensively in regard to shape, size, position relative to the length of the carton, location of the hinge line and selection of the panels from which any particular tab is cut. Also, the flaps may be arranged in the erected carton so as to span adjacent rather than opposite corners if desired for the particular article to be packaged. Furthermore, if cartons having but a single inner flap, for example, like those disclosed in the aforementioned application Serial No. 379,180, are desired, such cartons may be constructed according to a further modification of the present invention, now to be described, at a very substantial saving in the amount of stock required.

The single inner flap type carton **106** according to this modification of the present invention is shown in cross section in Figures 16 and 17 with the inner flap **82** disposed in its two alternative positions respectively. It is pointed out with reference to Figures 5, 6 and 7, that carton **106** may be constructed from blank such as **80** (Figure 5) with flap **72** omitted. It is further pointed out that all the blanks disclosed herein may be similarly modified to achieve a single inner flap carton. Thus blanks **24** and **87**, Figures 2 and 8, respectively, may be so modified by omission of flaps **66** and **82**, respectively, and blanks **89** and **97**, Figures 10 and 13, by the omission of one of the tabs **90**, **92** or **98**. If a single inner flap type carton is desired, this modification of blanks such as **24**, **80** and **87** has the advantage of conserving board, while in blanks such as **10** and **13** it additionally conserves space for advertising or other printed matter since two of the outer side wall panels are left intact.

From the foregoing description of certain preferred carton forms embodying the present invention it will be appreciated that all are characterized by simplicity and economy through all stages of manufacture and loading in that all are formed of single unitary blanks, require only a single glue seam, fold flat for stacking, and are easily folded, glued and closed by operations capable of being performed by standard carton making and loading machinery. Furthermore, the cartons disclosed have resilient inner flaps which substantially isolate the contained article from contact with any of the exterior side walls and can be produced, in the case of the blanks shown in Figures 10, 13, 16 and 17 from the same quantity of stock as would ordinarily be utilized just to form the exterior portions of the carton. The embodiments shown in Figures 1, 5 and 8 also effect a substantial saving in the quantity of board needed inasmuch as only one inner flap is defined by means of an extension on the normal body portion of the carton blank.

This invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing descrip-

tion, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. A carton for the protective containment of fragile articles comprising a body portion formed of a plurality of side wall panels, and a pair of protective inner flaps for resiliently positioning an article in said carton, each of said flaps comprising a tab cut from a pair of adjacent side wall panels and each being foldably connected to one of the pair of panels from which it is cut, each of said tabs being adapted to assume a position within the carton spanning a respective corner thereof defined by the panel to which the tab is foldably connected and a panel adjacent thereto and, in said position, having a free end in sliding abutment with the inner surface of a panel adjacent the one to which the tab is foldably connected.

2. An integral collapsible carton for fragile articles comprising a body portion having side walls and end walls, a glue lap joining a pair of adjacent side walls, a protective inner flap integral with and foldably connected to said glue lap, said protective inner flap being adapted to span a corner of the carton formed by one of said adjacent side wall panels and a panel adjacent thereto and having a free end slidably abutting the interior surface of said carton, and a second protective inner flap comprising a tab cut from a pair of adjacent side wall panels and foldably connected at one end to one of the side walls from which it is cut, said tab being adapted to span a second corner of said carton.

3. A carton for the protective containment of fragile articles comprising a single blank having first, second, third and fourth side wall panels separated by fold lines and angularly related in the erected carton, a glue lap panel extending from said fourth side wall panel and adapted to be overlapped by said first side wall panel and rigidly secured thereto, an internal flap extending integrally from said glue lap and having a free end in sliding abutment with the internal surface of said carton, and a second internal flap comprising a tab cut from a pair of adjacent side wall panels and having a free end in sliding contact with the internal surface of said carton.

4. A collapsible carton of substantially rectangular cross section for the protective containment of fragile articles consisting of a single blank having first, second, third and fourth side wall panels separated by fold lines and angularly related in the erected carton, a glue lap panel extending from said fourth side wall panel and adapted to be overlapped by said first side wall panel and rigidly secured thereto, and protective inner flaps adapted to span diagonally opposite corners in the erected carton comprising a tab cut from said first and second side wall panels and foldably connected to one of said first and second side wall panels, and a second tab cut from said third side wall panel and a panel adjacent thereto and foldably connected to said third side wall panel each of said flaps having a free end in sliding engagement with the interior of said carton.

5. A collapsible carton of substantially rectangular cross section for the protective containment of fragile articles consisting of a single blank having first, second, third and fourth side wall panels separated by fold lines and angularly related in the erected carton, a glue lap panel extending from said fourth side wall panel and adapted to be overlapped by said first side wall panel and rigidly secured thereto, and a pair of protective inner flaps adapted to span diagonally opposite corners in the erected carton comprising a tab cut from said first and second side wall panels and foldably connected to said first side wall panel and a second tab cut from said third and fourth side wall panels and foldably connected to said third side wall panel each of said flaps having a free end in sliding engagement with the interior of said carton.

6. A collapsible carton of substantially rectangular cross section for the protective containment of fragile articles consisting of a single blank having first, second, third and fourth side wall panels separated by fold lines and angularly related in the erected carton, a glue lap panel extending from said fourth side wall panel and adapted to be overlapped by said first side wall panel and rigidly secured thereto, and a pair of protective inner flaps adapted to span diagonally opposite corners of the erected carton comprising a tab cut from said first and second side wall panels and foldably connected to said first side wall panel and a second tab cut from said second and third side wall panels and foldably connected to said third side wall panel each of said flaps having a free end in sliding engagement with the interior of said carton.

7. A collapsible carton of substantially rectangular cross section for the protective containment of fragile articles consisting of a single blank having first, second third and fourth side wall panels separated by fold lines and angularly related in the erected carton, a glue lap panel extending from said fourth side wall panel and adapted to be overlapped by said first side wall panel and rigidly secured thereto, and a pair of protective inner flaps integral with said blank and adapted to span diagonally opposite corners of the erected carton, one of said protective inner flaps comprising an extension integral with said glue lap and the other comprising a tab cut from a pair of adjacent side wall panels, said tab being connected at one end to one of said pair of panels and having a free end in sliding abutment with the inner surface of said carton.

8. The carton defined in claim 7 wherein said tab is cut from said second and third side wall panels and is connected to said third side wall panel.

9. The carton defined in claim 7, wherein said tab is cut from said third and fourth side wall panels and is connected to said third side wall panel.

10. The carton defined in claim 7, wherein said tab is cut from said third and fourth side wall panels and is connected to said fourth side wall panel.

11. A carton for the protective containment of fragile articles comprising a body portion formed of a plurality of foldably connected side wall panels, a pair of protective inner flaps for resiliently positioning an article in said carton, one of said flaps comprising a tab cut from a pair of adjacent side wall panels and foldably connected at one end to one of said pair of panels, said tab being adapted to extend across one corner of the carton formed by said one side wall panel and a second side wall panel adjacent thereto and having a free end in sliding abutment with the inner surface of said second side wall panel, and the other of said flaps comprising an inner panel foldably connected to a side wall panel other than said one side wall panel, said inner panel being adapted to span a corner of the carton other than said one corner and to have its free end in sliding abutment with the inner surface of said carton.

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