June 7, 1949. M. I. WILLIAMSON 2,472,183

CONTAINER

Filed Oct. 23, 1945 2 Sheets-Sheet 1

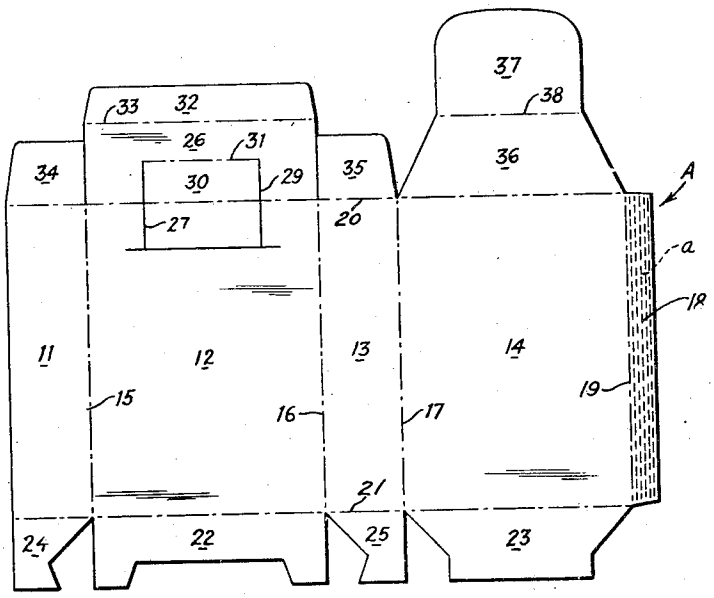

Fig. 1

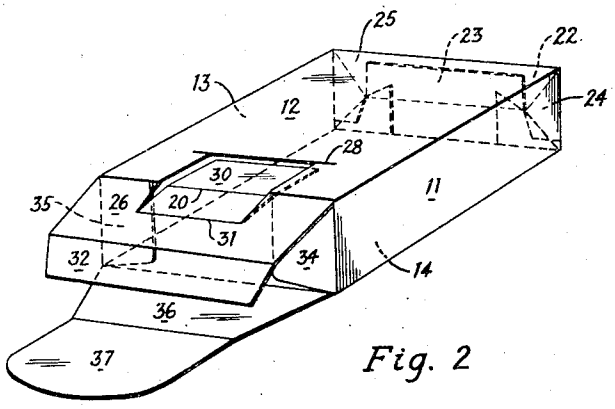

Fig. 2

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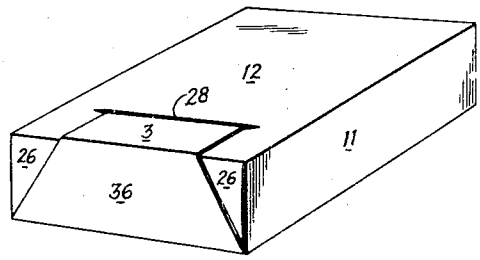

Fig. 3

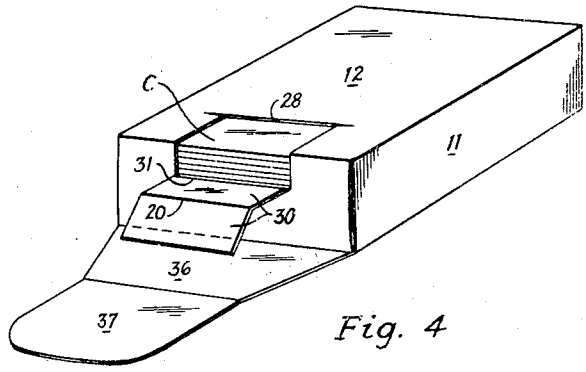

Fig. 4

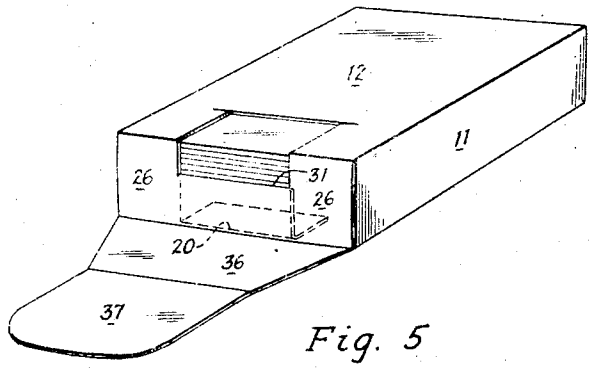

Fig. 5

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UNITED STATES PATENT OFFICE

2,472,183

CONTAINER

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Application October 23, 1945, Serial No. 623,977

6 Claims. (Cl. 206—45.31)

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This invention provides a carton of paperboard or similar foldable sheet material particularly suited for the packaging of merchandise which the customer may desire to inspect as well as examine with the hands, such as sheets, pillow cases, towels and other types of linens, or blankets and similar articles. The invention provides a carton for the protective and decorative packaging of such articles permitting visual and feel examination without removal of the contents from the carton.

In the preferred embodiment of the invention an inspection window or aperture is provided extending partially into one end panel and the adjoining side panel. This aperture may be closed by a hinged flap whose circumferential cut lines form the aperture and covered by an end panel arrangement which may be opened and reclosed at will. When the end panel arrangement is opened the inspection window permits access to the contents and visual as well as feel examination of the contents while the contents are still in the carton. If desired, it is possible to seal the inner end panel into whose body the inspection aperture extends so that removal of the contents from the carton is not possible without cutting or tearing the carton open, while at all times the carton may be partially opened and reclosed to permit inspection of its contents.

The various objects, features and advantages of the invention will appear more fully from the detailed description which follows accompanied by drawings, showing, for the purpose of illustration, a preferred embodiment of the invention. The invention also consists in certain new and original features of construction and combination of parts hereinafter set forth and claimed.

Although the characteristic features of the invention which are believed to be novel will be particularly pointed out in the claims appended hereto, the invention itself, its objects and advantages, and the manner in which it may be carried out, may be better understood by referring to the following detailed description and the accompanying drawings forming a part thereof, in which

Fig. 1 is a plan view of a blank from which a carton embodying the invention may be formed, the inside surface of the blank facing the observer;

Fig. 2 shows a hollow empty carton formed from the blank of Fig. 1, the bottom structure of the carton being closed, the top structure being in the process of closing;

Fig. 3 shows the carton of Fig. 2 fully closed;

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Fig. 4 shows the carton of Fig. 3 after opening of the outer top panel to expose the inspection aperture;

Fig. 5 shows an optional manner of folding the flap cut from the carton walls to form the inspection aperture, the flap being folded into the carton and thus out of the way.

In the following description and in the claims, various details will be identified by specific names for convenience. These names, however, are intended to be as generic in their application as the art will permit. Like reference characters refer to like parts in the several figures of the drawings.

In the drawings accompanying and forming part of this specification, certain specific disclosure of the invention is made for the purpose of explanation, but it is understood that details may be modified in various respect without departure from the broad aspects of the invention.

The blank A shown in Fig. 1 is substantially rectangular in outline resulting in a minimum of waste of material. The blank may be cut and scored from a large sheet or roll of paperboard or other suitable foldable sheet material on automatic cutting and creasing machines. Only one side of the blank need be decoratively finished or imprinted, since only one surface of the blank is presented as the outside surface of the assembled carton.

Fig. 1 shows the blank A in a position in which the inside surface faces the observer. The blank comprises enclosing side wall panels 11, 12, 13 and 14 hingedly connected along side fold lines 15, 16 and 17. A terminal glue flap 18 is hingedly connected to the outermost side wall panel 14 of the blank along a fold line 19. The ends of the side wall panels are defined by end fold lines 20 and 21 extending at right angles with respect to the side fold lines.

The bottom end structure of the cartons embodying the present invention is entirely optional and may assume any of the various conventional forms. In the illustrated embodiment, the bottom end structure comprises bottom end panels 22 and 23 hingedly connected to the side walls 12 and 14 along the bottom fold lines 21 and bottom side panels 24 and 25 hingedly connected to the wall panels 11 and 13. The bottom panels have a somewhat complex configuration to permit instantaneous interlocking upon assembly as will be described hereinafter. Since, however, the form and the interlocking feature of the bottom panels are conventional, no detailed description is required of the configura-

tion of the bottom panels in addition to the illustration in the drawings.

The opposite or top end of the carton is formed by a number of panels including an inner end panel 26 hingedly connected to the side panel 12 along the fold line 20. Cut lines 27, 28 and 29 extend across the body of the inner end panel 26 and the side wall 12 and define a flap 30 hinged to the remainder of the inner end panel 26 along a fold line 31. The flap is subdivided into two portions by the fold line 20 running across it and may be folded with respect to the remainder of the blank to expose an inspection aperture defined by the lines 27, 28, 29 and 31. A tuck flap 32 is hingedly connected to the end of the inner end panel along a fold line 33. Top side flaps or panels 34 and 35 are hingedly connected to the side walls 11 and 13 respectively along the top fold line 20.

An outer end panel 36 is hingedly connected to the side wall panel 14 along the top end fold line 20 and has connected thereto an end flap 37 along a fold line 38. The width of the end flap 37 is greater than the width of the inspection window, that is, the distance between the cut lines 27 and 29. It is slightly narrower than the total length of the cut line 28 extending beyond the juncture with the cut lines 27 and 29 to provide a tuck-in slit for the end flap 37, as will appear from the following description describing the assembly and use of the carton.

In the assembly of the carton adhesive *a* is first applied to the underside of the terminal glue flap 18 and the blank is then folded about the fold line 17 so that the side panel 14 overlies the side panel 13 and a portion of the side panel 12. The blank is then folded about the fold line 15 to bring the side panel 11 over and into adhesive engagement with the terminal glue flap 18. Thus folded and glued the blank forms a flat collapsed tubular structure which may be stored and shipped in flat condition requiring a minimum of space and may be expanded and completed into hollow carton form as needed by the packer or manufacturer.

After expansion of the blank into hollow tubular form the bottom structure of the carton is first assembled. This is done by first infolding the bottom end panel 22, folding of the bottom side panels 24 and 25 thereover and finally folding the bottom end panel 23 over the three previously folded bottom panels. The bottom end panel 23 is then pressed inwardly beyond the position which it assumes in the finished carton causing its tongue to slide and snap beneath the cut out notched portion of the bottom end panel 22 whereafter the folding pressure may be released, permitting the panels to return to the position illustrated in Fig. 2 in which they are securely interlocked forming a closed bottom end for the carton.

The carton may then be filled with merchandise, for example, linen, the folding of the linen being preferably such that a single thickness of the material lies directly underneath the inspection window so that it may be examined conveniently by the customer.

After insertion of the contents the top side flaps 34 and 35 are infolded and the inner end panel brought into contents retaining position by insertion of the tuck flap 32 which is frictionally held between the inner surface of the side wall panel 14 and the tapered edges of the top side flaps 34 and 35. Adhesive may be applied to the tuck flap 32 to attach the tuck flap

adhesively to the inner surface of the side wall panel 14 when it is desired to close the carton to prevent removal of its contents while yet permitting the examination of the contents.

The closing of the carton is completed by folding the outer end panel 36 over the inner end panel 26 and insertion of the end flap 37 through the slit 28 in which it is frictionally held.

Thus closed, the filled carton as shown in Fig. 3 may be shipped or presented to the ultimate customer. If an inspection of the contents is desired, the carton top is partially opened by withdrawing the end flap 37 from the slit 28 and folding the outer end panel 36 into the position shown in Fig. 4 exposing an inspection window. The inspection window may be opened by folding the flap 30 about its fold line 31, as shown in Fig. 4, exposing the contents C underneath the window. The contents may then be inspected or examined by hand while still in the carton. After examination, the carton may be reclosed simply by folding the flap 30 back into window closing position and by folding the outer end panel 36 and inserting the end flap 37 through the slit 28 as shown in Fig. 3.

It is of course not necessary to leave the flap 30 for manipulation by the customer. It may be tucked away during the filling and first closure of the carton as shown in Fig. 5. For this purpose it is advantageous to arrange the fold line 31 of the flap half way between the fold lines 20 and 33 so that in the tucked away position the end of the flap overlies the wall panel 14 and the tuck flap 32, the portion of the fold line 20 which extends across the window flap 30 lying next to the fold line 33. This position is illustrated in Fig. 5. In this arrangement the inspection window is closed and covered by the outer end wall panel 36 and its end flap 37. The closed or reclosed carton is identical in appearance with the carton shown in Fig. 3.

Thus an extremely attractive and practical carton is provided which has a wide range of uses not only for packaging fabrics but also in other fields. It is, for example, extremely practical as a dispensing carton for tissues or paper napkins in which event the window is made somewhat wider than shown in the accompanying drawing to permit convenient withdrawal of the contents, one by one, through the window. Other uses readily suggest themselves.

It is of course not indispensible that all the illustrated details of construction be incorporated in the cartons according to this invention. Other forms of bottom structures may be employed which may be closed either by folding, tucking or sealing or otherwise. The shape and outline of the window is likewise optional. The slit through which the end flap on the outer end panel may be inserted may be separate and spaced from the outline of the window. The window flap may be entirely removed in the cutting operation of the blank. This, however, will entail a stripping operating of the blank which the illustrated construction avoids. The outline of the blank may also be modified to arrange the various panels in a different position with respect to each other to permit folding of the blank on automatic machines of the Brightwood type. Such modifications are easily apparent to persons skilled in the art. These various changes, modifications, omissions, additions and substitutions may be made without departure from the basic aspects of this invention.

What is claimed is:

1. A folding box or carton comprising enclosing side walls, and panels forming end walls, one of said end walls comprising an inner end panel hingedly connected to one of the side walls along a fold line, said inner end panel and said one side wall having a flap cut therefrom hinged to said inner end panel providing upon folding of the flap an inspection aperture extending across said fold line; side flaps hingedly connected to side walls adjoining said one side wall; means for securing said inner end panel in carton contents retaining position; an outer end panel hingedly connected to a second side wall opposite said one side wall; an end flap, wider than said aperture, hingedly connected to said outer end panel, said outer end panel and said end flap being adapted to overlie and cover said inspection aperture, said one side wall having a slit therein extending substantially from the end edge of said cut flap, said end flap being insertable through said slit to maintain said outer end panel and end flap in aperture covering position, said slit extending beyond the width of said cut flap.

2. A folding box or carton comprising enclosing side walls, and panels forming end walls, one of said end walls comprising an inner end panel hingedly connected to one of the side walls along a fold line, said inner end panel and said one side wall having a flap cut therefrom hinged to said inner end panel providing upon folding of the flap an inspection aperture extending across said fold line; side flaps hingedly connected to side walls adjoining said one side wall; a tuck flap hingedly connected to said inner end panel for maintaining said inner end panel in carton contents retaining position; an outer end panel hingedly connected to a second side wall opposite said one side wall; an end flap, wider than said aperture, hingedly connected to said outer end panel, said outer end panel and said end flap being adapted to overlie and cover said inspection aperture, said one side wall having a slit therein extending substantially from the end edge of said cut flap beyond the width of said cut flap, said end flap being insertable through said slit to maintain said outer end panel and end flap in aperture covering position.

3. A reclosable end structure for a carton having four side walls to permit visual and feel inspection of the carton contents without removal from the carton, the end structure comprising, an inner end panel hingedly connected to one side wall along a fold line; an outer end panel hingedly connected to the side wall opposite said one side wall; side flaps hingedly connected to the remaining side walls; a tuck flap hingedly connected to said inner end panel and adapted to be tucked between the edges of said side flaps and said opposite side wall to maintain said inner end panel in carton contents retaining position; an inspection flap hingedly connected to said inner end panel, said inspection flap being cut from the body of said inner end panel and of the said one side wall, said inspection flap comprising two hinged portions of such length as to be foldable back upon said inner end panel and the opposite side wall to expose an inspection aperture in said inner end panel and said one side wall through which the carton contents may be examined; an end flap hingedly connected to said outer end panel, said end flap being wider than said inspection flap, said one side wall having a slit therein adapted to receive said end flap in tucked-in relationship, whereby the outer end panel and the end flap are maintained in inspection aperture covering reclosable position, said slit forming part of the cut severing said inspection flap from the body of said one side wall and extending beyond the width of said inspection flap.

4. A reclosable end structure for a carton having four side walls to permit visual and feel inspection of the carton contents without removal from the carton, the end structure comprising, an inner end panel hingedly connected to one side wall along a fold line; an outer end panel hingedly connected to the side wall opposite said one side wall; means for maintaining said inner end panel in carton contents retaining position; an inspection flap hingedly connected to said inner end panel said inspection flap being cut from the body of inner end panel and of the said one side wall, said inspection flap being foldable to expose an inspection aperture in said inner end panel and said one side wall through which the carton contents may be examined; an end flap hingedly connected to said outer end panel, said end flap being wider than said inspection flap, said one side wall having a slit therein adapted to receive said end flap in tucked-in relationship, whereby the outer end panel and the end flap are maintained in inspection aperture covering reclosable position, said slit forming part of the cut severing said inspection flap from the body of said one side wall and extending beyond the width of said inspection flap.

5. A blank, more particularly for a reclosable carton permitting visual and feel inspection of its contents, the blank comprising, hingedly connected side wall panels, panels for forming one end wall, and means for forming the other end wall, said means comprising an inner end panel hingedly connected to one side wall panel; a tuck flap hingedly connected to said inner end panel; an outer end panel hingedly connected to another side panel; an end tuck flap hingedly connected to said outer end panel; and a flap cut from the body of said inner end panel and said one side wall, said cut flap having a hinged connection with said inner end panel, one of the cut lines severing said cut flap from the body of said one side wall being extended beyond the width of said cut flap to permit insertion of said tuck flap into the slit formed by said extended cut line.

6. A blank, more particularly for a reclosable carton permitting visual and feel inspection of its contents, the blank comprising, side wall panels hingedly connected along side fold lines, a securing flap hingedly connected to an outermost side wall panel of the blank along a side fold line; bottom flaps hingedly connected to one end of certain of said side wall panels along bottom fold lines; an inner top panel hingedly connected to the other end of one of said side wall panels along a top fold line; an extension flap hingedly connected to said inner top panel along a fold line parallel to said top fold line; a flap cut from the body of said inner top panel and of the side wall panel to which the inner top panel is hinged, the flap having a hinged connection with said inner top panel; an outer top panel hingedly connected to another side panel along a top fold line; and an end flap hingedly connected to said outer top panel along a fold line parallel to said last named top fold line, the side wall panel to which the inner top panel is hinged having a slit therein for frictionally receiving said end

flap, said slit forming a portion of the cut severing said cut flap from the body of said side wall panel.

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