

Aug. 20, 1957

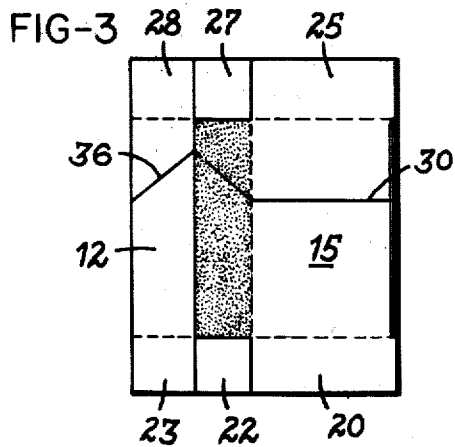
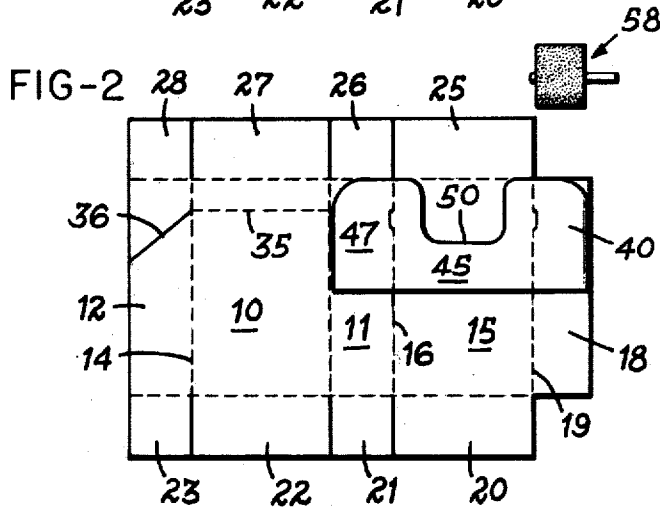
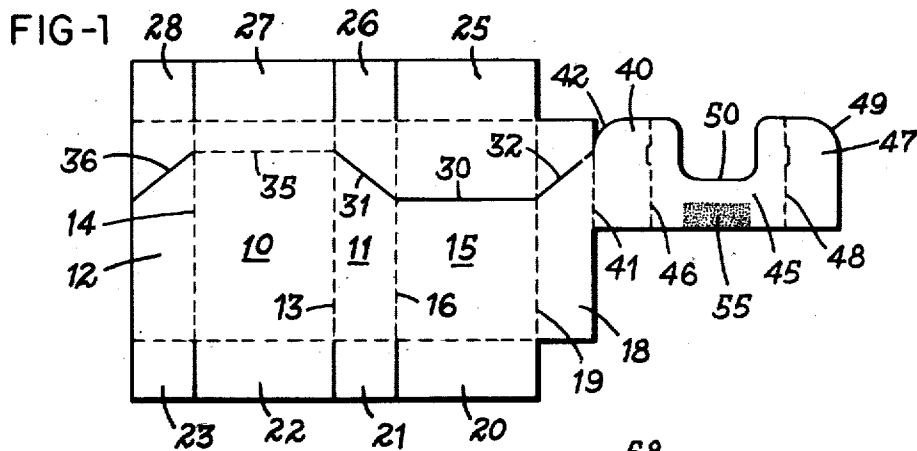
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2,803,394

CARTON

Filed Oct. 24, 1955

2 Sheets-Sheet 1



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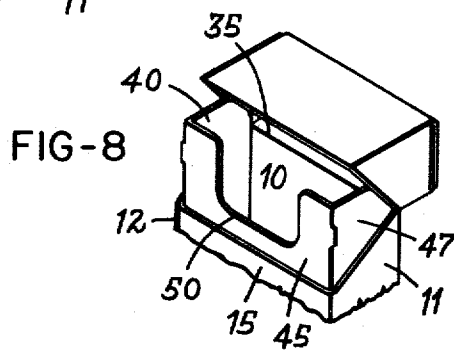
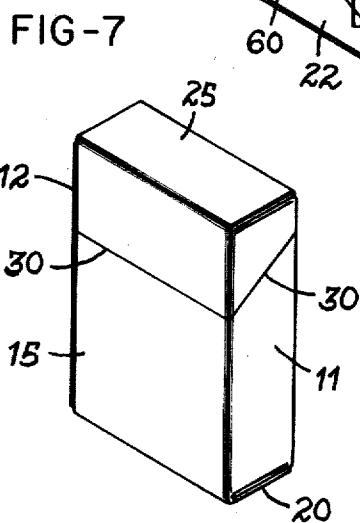
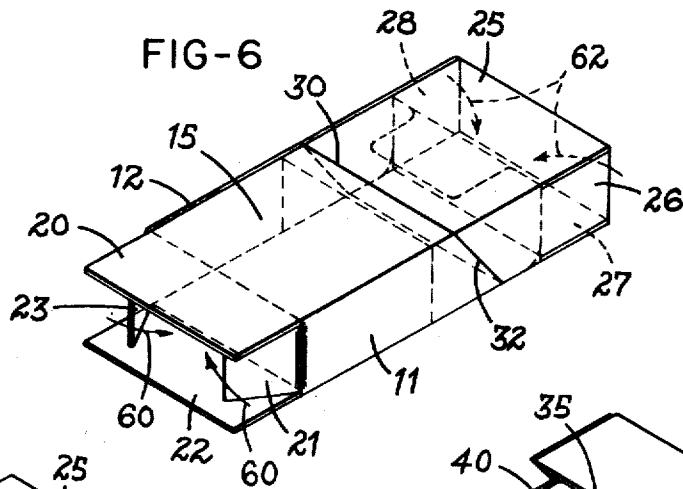
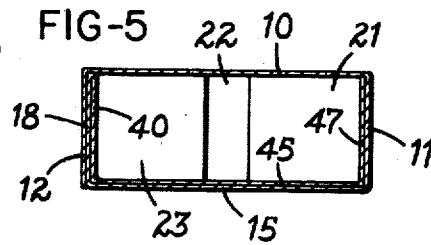
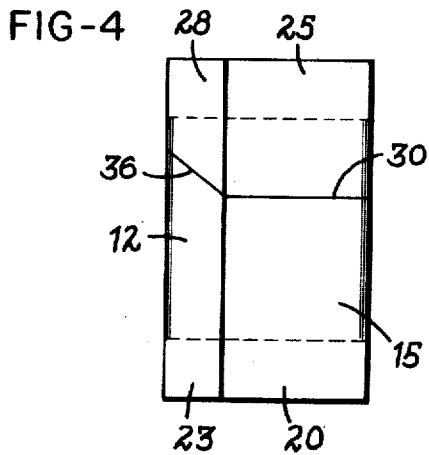
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2 Sheets-Sheet 2



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2,803,394

CARTON

William A. Ringler, Wayne, Pa., assignor to The Gardner Board and Carbon Company, Middletown, Ohio, a corporation of Ohio

Application October 24, 1955, Serial No. 542,325

3 Claims. (Cl. 229—44)

This invention relates to cartons, particularly to cartons having reclosable lids.

It is a primary object of this invention to provide a carton having a reclosable lid with an inner stiffening member which is an integral part of the carton, being formed from a portion of the carton blank, and which provides adequate stiffening with a minimum of material used in constructing the inner or stiffening member.

A further object of the invention is to provide such a carton wherein the inner member is integrally hinged to the carton glue flap, and wherein the inner member may be reversely folded into position overlying the main portion of the carton blank prior to assembly of the carton. Another object of the invention is to provide such a carton, and a blank for folding the carton, which are adaptable to high speed folding operations on machines now in commercial use.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawing and the appended claims.

In the drawing—

Fig. 1 is a plan view of the blank from which the carton is formed in accordance with the invention;

Fig. 2 is a view of the blank in Fig. 1, with the inner panels folded over upon the outer or main carton panels;

Fig. 3 is a view of the flat-folded blank prior to assembling the blank in tubular form;

Fig. 4 shows the blank assembled in flat-folded condition;

Fig. 5 is a horizontal section through the assembled and erected carton locking from the center thereof toward the bottom;

Fig. 6 is a perspective view of the carton during an intermediate stage in its erection;

Fig. 7 is a perspective view of the completed carton with the lid closed; and

Fig. 8 is a partial perspective view of the carton in Fig. 7 with the lid open.

Referring to the drawing, which illustrates a preferred embodiment of the present invention, and particularly to Fig. 1, the carton provided by this invention is formed from a unitary blank of sheet material, such as paper board, which is scored and cut to divide the blank into panels and flaps for forming an outer member, and panels for forming an inner member. The outer member includes a rear panel 10 and side panels 11 and 12 hinged to opposite sides of panel 10 along score lines 13 and 14, respectively. The side panel 12 has a free edge at the side thereof opposite from score line 14, this edge being one end of the carton blank. At the other side of side panel 11 a front panel 15 is hingedly attached along a score line 16, and a glue flap 18 is hinged along score line 19 to the other or opposite edge of front panel 15.

At the bottom of the front and side panels there are provided flaps 20, 21, 22 and 23, each of which is hinged to the adjacent panel by a suitable score line and each of which is independently hinged about the score line with

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respect to the other bottom flaps to form a bottom wall on the carton. In like manner, at the top of the blank flaps 25, 26, 27 and 28, are hinged to the outer front, rear and side panels, and the blank is slit between each of these flaps to provide for independent swinging movement of each of them.

A continuous slit or cut extends across the blank through the front panel and the side panel 11 and glue flap 18. This slit includes a horizontal main portion 30 extending transversely of the front panel 15, spaced from the top thereof, and slanted or bias cut portions 31 and 32 which extend from opposite ends of slit 30 upwardly across the side panel 11 and the glue flap 18, respectively, terminating at opposite edges of side panel 11 and the glue flap, below the top edges thereof. A score line 35 extends transversely of rear panel 10 from the end of the bias slit 31 to the opposite edge of rear panel 10, adjacent side panel 12. Score line 35 is substantially parallel to and spaced upwardly from the main slit 30, and provides a hinge line for the reclosable lid of the carton as will presently be described. Another bias slit or cut 36 extends across side panel 12, beginning at the intersection of score line 35 with score line 14, and extending angularly across panel 12 to the free edge thereof, with the point of intersection of slit 36 with this free edge being equally distant from the top of the blank as the lower end of cut 31.

The inner member includes a side panel 40 integrally hinged along a score line 41 to the upper end of glue flap 18, with the adjacent upper corner 42 of panel 40 being rounded to the point where slit 32 intersects score line 41, thereby precluding connection of panel 40 with flap 18 above slit 32. An inner front panel 45 is hinged at 46 to panel 40, and an inner side panel 47 is hinged at 48 to the other edge of panel 45, with the free upper corner 49 of panel 47 being rounded complementary to the corner 42. The upper central portion of inner front panel 45 is cut away at 50 to provide an access opening, as will be more fully described later on.

Figs. 2, 3 and 4 show progressive steps in the assembly of the blank of Fig. 1 from flat blank form to an assembled or flat tubular form. The first step in such assembly is illustrated in Fig. 2, wherein the inner member comprised of panels 40, 45 and 47 is folded over as a unit along score line 41. Suitable adhesive may be applied to the face of panel 45 prior to such folding, the preferred location of such adhesive being shown by the spotted portions 55 in Fig. 1. As will be seen in Fig. 2 the inner panels overlie the continuous slit 30, 31 and 32, and extend from a point substantially midway of the blank to the upper edge of the outer panels. Suitable adhesive having been applied to the undersurface of glue flap 18, as by a glue wheel 58, the next fold is made along line 16, with the glue flap 18 consequently being folded over adjacent to side panel 12. The side wall 12 is then folded over along line 14 upon the glue flap and upon adherence thereto the carton is finished in flat blank or flat tubular form, ready for shipping and/or storage.

Referring to Fig. 6, the finished blank of Fig. 4 is shown in an erected condition, prior to assembly of the top and bottom of the blank from the top and bottom flaps. Such assembly may be accomplished either by hand or in an automatic folding and gluing machine, and the flaps are held in closed or wall-forming position by suitable adhesive. Thus, to form the bottom wall the bottom flaps 21 and 23 are folded inwardly in the direction of arrows 60 in Fig. 6 until these flaps extend at right angles with respect to the side panels 11 and 12. The flap 22 is then folded upwardly across the bottom of the box and finally flap 20 is folded over and adhered to flap 22 to complete the bottom wall. In like manner,

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the top wall is formed by folding flaps 26 and 28 inwardly as shown by arrows 62, then flap 27 is folded upwardly upon flaps 26 and 28, and finally flap 25 is folded over and adhered to flap 27.

The completed carton is shown in Figs. 7 and 8, with the lid opened in Fig. 8 to indicate the relation of the inner member panels with respect to the lid. The portions of the main outer panels 10, 11, 12 and 15 below slits 30, 31, and 32 provide an open top box, and the inner member panels 40, 45 and 47 provide an upward continuation of the box with the cut away portion 50 affording an access opening at the upper frontal portion of the box. The upper portions of the outer front and side panels, together with that portion of rear panel 10 above hinge line 35, provide front, side, and rear walls which form a lid for the box hinged along line 35, and including the closed top wall provided by flaps 25, 26, 27 and 28.

The upper edges of the box, particularly the free upper edge of panel 45, extend into the path of movement of the lid front wall, and thus the front wall will slide against the upper front edges of the box and the lid will be retained in its closed position.

It will thus be seen that the present invention provides a carton including an open top box and a reclosable lid which is integrally hinged to the box. The entire carton is formed from a unitary blank of sheet material which is so designed that when the blanks are cut from a sheet of paperboard material or the like very little of the material is wasted. For example, two flat blanks such as shown in Fig. 1 could be laid out end to end on a sheet of material, with one blank reversed with respect to the other so that its inner panel members occupied the space below the panels 40, 45 and 47. The blank is easily assembled into both flat-folded form and into erected or finished form, and is readily adaptable to folding operations by modern high speed machines. Furthermore, the outside walls of the carton are all integral, and this may be printed with any desired pattern, extending across slit 30, if desired, since no problem of register is involved.

The completed carton is especially adaptable for packaging cigarettes, in combination with an inner foil wrapper which covers the cigarettes within the carton, and an outer transparent wrapper, such as cellophane, which covers the entire carton until it is opened for use. Such a package is shown in detail in my pending application S. N. 542,326 (Docket 3245) filed of even date with this application and assigned to the same assignee.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. In a carton of the character described, a blank divided into front, rear and side panels with one of said side panels at the edge of said blank and said rear panel attached to said one side panel, a glue flap hinged to said front panel on the opposite side thereof from said other side panel, a series of three inner panels all of a height substantially less than said front and rear panels for forming an inner member in said carton, said inner panels being hinged in side by side relation to said glue flap adjacent the upper end thereof, said glue flap and said front and other side panels having a continuous slit therein extending from adjacent the connection between said inner panels and said glue flap, said inner panels being foldable into a position overlying said slit, said rear panel having a score line therein extending from the end of said slit in the adjacent said other side panel parallel to the top of said carton, said one side panel having a slit therein extending from the adjacent end of said score line and arranged to register with the portion of said continuous slit in said glue flap to provide a reclosable lid on said

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carton hinged thereto along said score line, and said inner panels extending upwardly across said slit and into said top in the closed position thereof.

2. In a carton of the character described, a unitary blank of sheet material scored to provide a series of panels for forming inner and outer members of said carton, a first outer side panel having a free edge along one side of said blank, a rear panel, a second outer side panel, and an outer front panel integrally hingedly connected in that sequence to each other and to said first outer side panel, a glue flap hinged to the other side of said outer front panel and adapted to be adhered to the inner surface of said first outer side panel in the assembled carton, flaps extending from the top and bottom of all said outer panels for forming top and bottom walls on said carton, inner side and front panels having a height substantially less than said outer panels, said inner panels being arranged with one of said inner side panels integrally hingedly connected to said glue flap and said inner front panel being between said inner side panels, said inner panels being foldable along the connection thereof with said glue flap into super-position upon said glue flap, said outer front panel, and said second outer side panel respectively, said rear panel having a score line therein extending entirely across said rear panel parallel to and spaced below said top wall, and the remainder of said outer panels and said glue flap having slits therein extending from opposite ends of said score line completely around said carton to separate the portions thereof above said slit from the remainder of said carton to provide a reclosable lid hinged to said carton along said score line, said inner panels extending upwardly beyond said slits and into said lid in the closed position thereof.

3. A blank for forming a carton having a reclosable lid as an integral part thereof, comprising a unitary blank of sheet material scored to provide an outer member including outer side, rear, side, and front panels integrally hingedly connected in that order, said front and rear panels being of substantially greater width than said side panels, a glue flap of substantially the same width as said side panels extending from the edge of said outer front panel opposite the last mentioned outer side panel, flaps extending from the upper and lower edges of said outer panels for forming top and bottom walls on the assembled carton, said rear panel having a score line extending transversely thereof spaced below and parallel to the upper edge thereof, said outer front panel having a transverse slit therein spaced below said score line in said outer rear panel, complementary slits in said last mentioned outer side panel and in said glue flap extending from opposite ends of said slit in said front panel and upwardly on a bias to connect said slit in said front panel with opposite ends of said score line in said rear panel in the assembled carton, a slit in the first mentioned outer side panel extending from the adjacent end of said score line in said rear panel and arranged to register with the slit in said glue flap in the assembled carton, an inner member including inner front and side panels all of substantially less height than said outer panels, one of said inner panels being integrally hingedly connected to the free edge of said glue flap providing for folding of said inner panels into superposition upon said outer member extending across said slits, and the upper corners of said inner member being dimensioned to engage portions of the inner surfaces of said outer panels above the slits therein to resist opening of the lid provided by the portions of said outer panels above said slits and said score line.

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