Dec. 30, 1958 H. V. BOLDING 2,866,588

RECESSED AUTOMATIC BOTTOM CARTON

Filed March 23, 1955

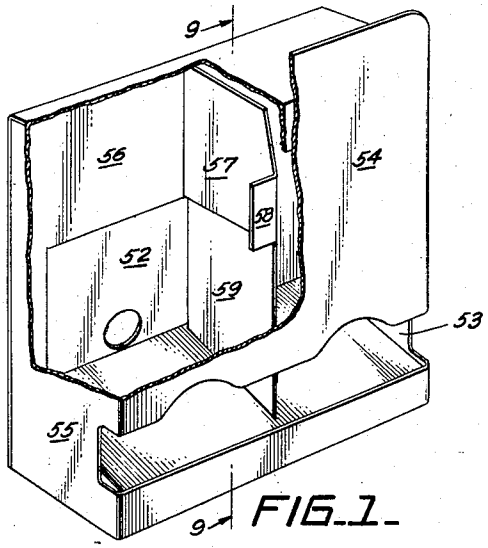


FIG. 1.

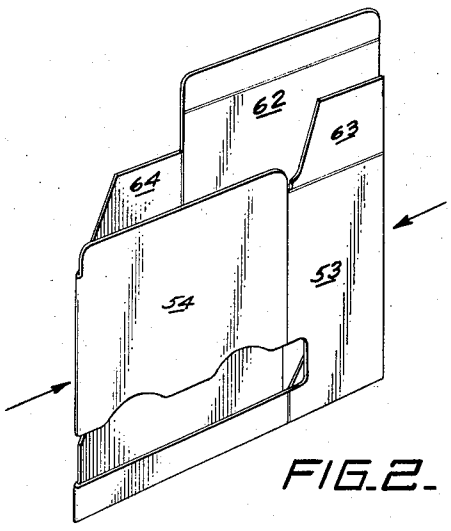


FIG. 2.

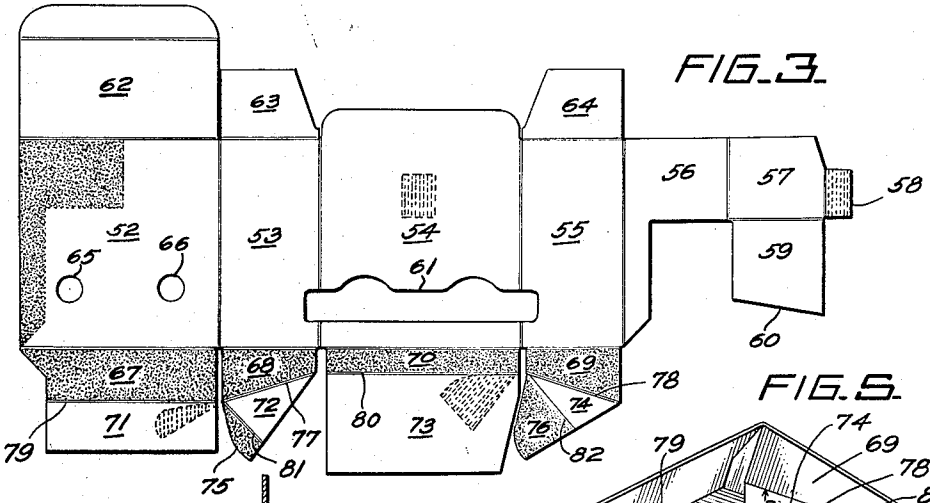


FIG. 3.

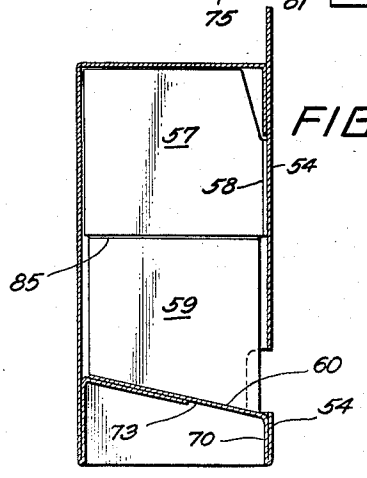


FIG. 4.

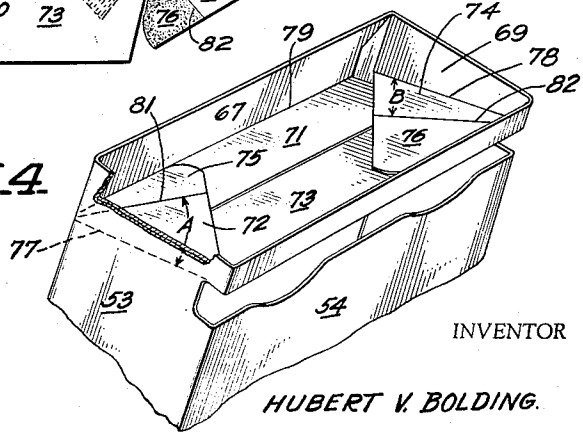


FIG. 5.

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RECESSED AUTOMATIC BOTTOM CARTON

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3 Claims. (Cl. 229—39)

My invention relates to a single blank collapsible carton having a recessed automatic bottom. This carton may be completely manufactured by automatic machinery, shipped to the user in collapsed condition, loaded into a packaging machine and automatically erected to article-receiving position.

While automatic bottoms have been employed in cartons for a number of years, the instant invention provides an automatically erectable carton which includes a recessed automatic bottom suitable for the resilient support of fragile articles, such as sealed beam headlights and the like, which may be placed in the carton with their most fragile portion resting on the bottom and through the recessed construction be protected from damage due to shock and rough handling.

For certain window display cartons used for dispensing items such as shoe polish and the like, the recessed bottom may be slanted in a unique fashion by my invention and all of the items raised to the level of the bottom of the window opening. In this manner, the concealment of the lowermost items behind the lower bracing structure panel for the window opening is avoided.

Other objects and meritorious features of the invention will be apparent from the following description taken in conjunction with the drawings wherein like numerals refer to like parts throughout the figures and wherein:

Fig. 1 is a perspective view of a dispenser-type carton in erected condition which embodies the instant invention;

Fig. 2 is a perspective view on a slightly reduced scale of the dispenser-type carton of Fig. 6 in collapsed condition;

Fig. 3 is a plan view of the single blank from which the carton of Figs. 6 and 7 is made;

Fig. 4 is a sectional view taken on line 9—9 of Fig. 1; and

Fig. 5 is a perspective view looking at the bottom portion of the dispenser-type carton of Fig. 6.

Referring now to the dispenser-type collapsible carton of Figs. 1–5, it will be seen that this carton is made from the single blank of Fig. 3 and is shipped to a user in the collapsed condition of Fig. 2. The automatic bottom of the dispenser carton is slanted to facilitate the dispensing operation.

The single blank of Fig. 3 is cut and scored to provide a rear wall **52**, a side wall **53**, a front wall **54** and a side wall **55**. Extending from side wall **55** is a rear wall anchor panel **56** and hinged thereto is an upper vertical dividing panel **57**, this panel **57** being hingedly connected to the front wall **54** by a front wall anchor panel **58**. A lower vertical dividing lock flap **59** hingedly depends from the dividing panel **57**, this lock flap **59** having an upwardly and rearwardly slanted bottom edge **60** which frictionally engages one of the bottom members to lock the carton is erected condition.

The front wall **54** and side walls **53** and **55** are provided with a continuously extending horizontal opening **61**, the lower edge of which is at the front upper edge of the automatic bottom (Figs. 1 and 4). Suitable top closure panels **62**, **63** and **64** extend from outer walls **52**, **53** and **55**, respectively. Dispensing finger holes **65** and **66** are provided in the rear wall **52** at the rear upper edge of the automatic bottom.

The recessed slanted automatic bottom is formed in part by means of a wide rear recessing panel **67**, side recessing panels **68** and **69**, and a narrow front recessing panel **70**. The recessing panels **67–70** which extend from the bottom edges of the outer walls **52–55** are glued in face-to-face engagement with the inner face of the outer walls. Four bottom members **71**, **72**, **73** and **74** are hinged to the upper edges of the recessing panels **67–70**, and these bottom members **71–74** in cooperation with the two diagonally opposed bottom folding tabs **75** and **76** complete the structure of the automatically erectable and collapsible recessed bottom.

It will be noted in Fig. 5 that the upper hinge edges **77** and **78** of the side recessing panels **68** and **69**, respectively, are slanted upwardly toward the rear wall **52**. The upper hinge edge **79** on the wide rear recessing panel **67** extends horizontally between the rear ends of the slant hinge edges **77** and **78**, and the upper hinge edge **80** on the narrow front recessing panel **70** extends horizontally between the front ends of the slant hinge edges **77** and **78**.

The opposed pair of bottom members **72** and **74** have tab hinge edges **81** and **82**, respectively, which extend substantially diagonally from diagonally opposite corners of the carton (Fig. 5). The bottom folding tabs **75** and **76** are hinged to the tab hinge edges **81** and **82**, respectively, and are fixedly secured to the remaining opposed pair of bottom members **71** and **73**, respectively. As seen in Fig. 5, the tab hinge edge **81** which extends from the upper end of slanted hinge edge **77** forms an angle A with the slanted hinge edge **77** which is more than 45 degrees. The tab hinge edge **82** which extends from the lower end of slanted hinge edge **78** forms an angle B with the slanted hinge edge **78** which is less than 45 degrees.

For producing a particular desired slant to the recessed bottom, there is a predetermined number of degrees which must be added to 45 degrees to obtain angle A and a predetermined number of degrees to be subtracted from 45 degrees to obtain angle B.

As seen in sectional view Fig. 4, the lock flap **59** is horizontally hinged on the flap hinge line **85** of the upper vertical dividing panel **57**. The bottom edge **60** of the lock flap frictionally engages the top surface of the large bottom member **73** and thereby prevents upward collapsing movement of the bottom members **71–74** to the collapsed form of the carton shown in Fig. 2. When it is desired to collapse the carton, the lock flap **59** must be swung upwardly into face-to-face contact with the dividing panel **57**.

The dividing panel is secured in position by the rear wall anchor panel **56** which is glued to the rear wall **52** (Fig. 1) and the front wall anchor panel **58** which is glued to the front wall **54**.

The collapsed carton of Fig. 2 may be erected by automatic carton loading machinery which applies pressure on the side edges of the flattened cartons in the direction of the arrows as shown. Various portions of the blank are cut-away to facilitate assembly and reduce erection stresses. Stapling, stitching, and the like, as well as gluing may be employed to fixedly secure the panels in proper relation.

Various modifications within the spirit of this inven-

tion will be apparent to those skilled in the art and for that reason I wish to limit myself only within the scope of the appended claims.

I claim:

1. A single blank collapsible carton cut and scored to provide four outer walls hingedly connected together to provide a continuous and collapsible outer wall structure, opposed outer walls being of equal length, four bottom recessing panels, each of said bottom recessing panels extending upwardly from the bottom edge of one of said outer walls in fixed face-to-face relation to the inner face of its respective one of said outer walls, a first opposed pair of said bottom recessing panels having opposed similarly slanted upper hinge edges, a second opposed pair of said bottom recessing panels having opposed vertically spaced horizontal upper hinge edges, one extending horizontally between the lower ends and the other extending horizontally between the upper ends of said slanted upper hinge edges, four bottom members, each of said bottom members being integrally hinged to the upper hinge edge of one of said bottom recessing members, a first opposed pair of said bottom members having tab hinge edges extending substantially diagonally from a pair of diagonally opposite corners formed by said outer walls, and two diagonally opposed bottom folding tabs, each of said tabs being integrally hinged to one of said tab hinge edges and fixedly secured to one of the remaining opposed pair of said bottom members, the tab hinge edge extending from the lower end of one of said slanted hinge edges forming an angle with said one of said slanted edges of less than 45 degrees, the tab hinge extending from the upper end of the other of said slanted hinge edges forming an angle with said other of said slanted edges of more than 45 degrees.

2. A single blank collapsible carton cut and scored to provide four outer walls including a front wall, first and second side walls, and a rear wall, four bottom recessing panels, each of said recessing panels extending upwardly from the bottom edge of one of said outer walls in fixed face-to-face relation to the inner face of its respective one of said outer walls, a first opposed pair of said recessing panels at the side walls having upwardly and rearwardly slanted upper edges, the recessing panel at the front wall having an upper edge extending horizontally between the front ends of said slanted upper edges, the recessing panel at the rear wall having an upper edge extending horizontally between the rear ends of said slanted upper edges, four bottom members, each of said bottom members being integrally hinged to the upper edge of one of said recessing members, the opposed pair of bottom members integrally hinged to the recessing panels at the side walls (being triangular in shape) and having hinge edges extending substantially diagonally from a pair of diagonal front and back corners formed by said outer walls, and two diagonally opposed bottom folding tabs, each of said tabs being integrally hinged to one of said hinge edges and fixedly secured to one of the remaining opposed pair of said bottom members, the hinge edge and the slanted edge extending from said back corner forming an angle of a predetermined number of degrees greater than 45 degrees, the hinge edge and the slanted edge extending from said front corner forming an angle of said predetermined number of degrees less than 45 degrees, said front wall having an opening extending upwardly from the front ends of said slanted upper edges.

3. A single blank collapsible carton in accordance with claim 2 and including a vertical dividing panel hingedly connected to and extending between the upper portions of said front wall and said rear wall, said dividing panel having a lower dividing lock flap hingedly depending therefrom, said lock flap having an upwardly and rearwardly slanted bottom edge in frictional engagement with one of said bottom members.

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