Sept. 6, 1949. J. CAGE 2,481,288

CARTON CLOSURE

Filed Feb. 5, 1945

Fig. 1

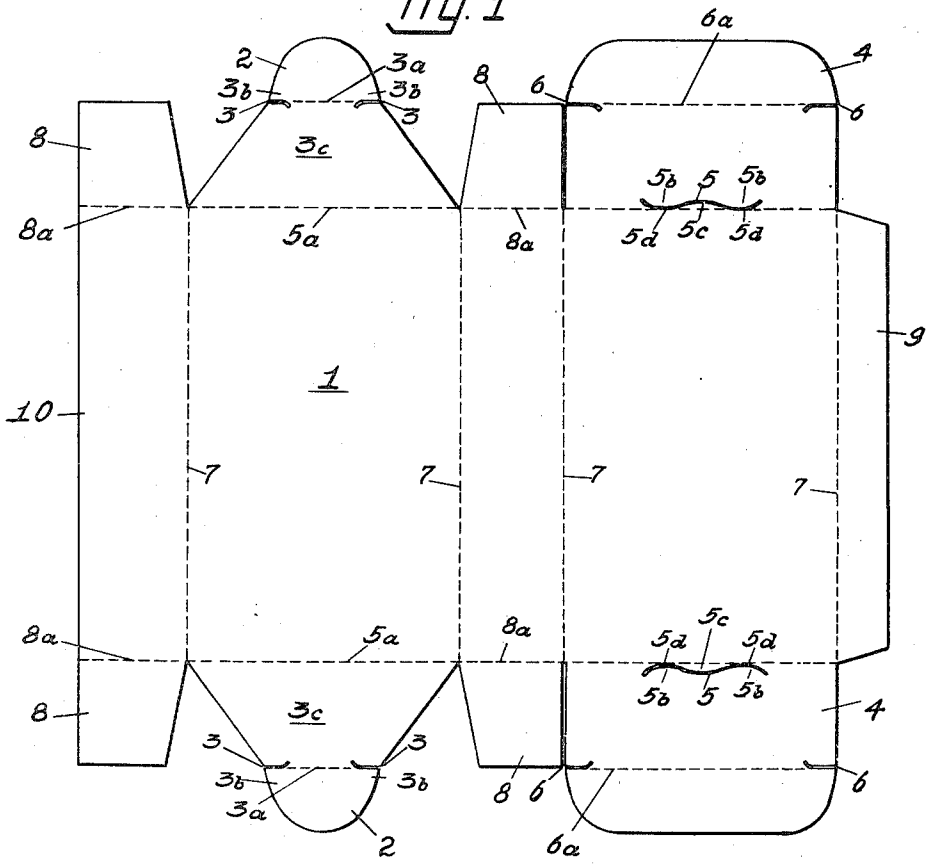


Fig. 2

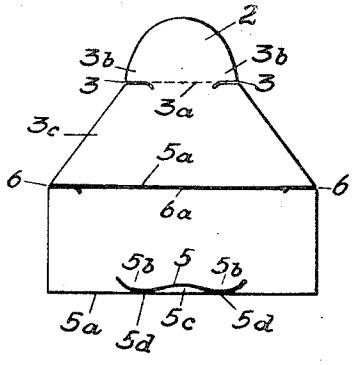
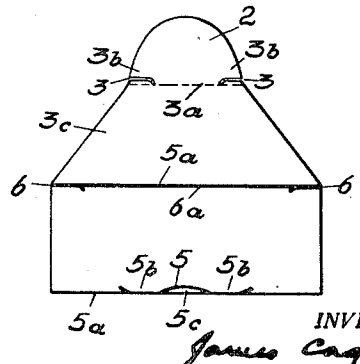


Fig 3



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CARTON CLOSURE

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1 Claim. (Cl. 229—39)

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In the usual types of carton closures various self-locking devices have been used, many employing shouldered latching tabs and cuts or slits in the carton body to receive said shouldered tabs. The object of the present invention is to improve upon such types of closures in order to secure greater ease in effecting the closing action after the carton has been filled, and to provide a closure of sufficient sureness and strength to enable mailing of the carton without tape sealing and without wrappings.

The principal features of the construction of the closure are an inserting tongue with slightly curved side incisions at the fold of the tab and forming shoulders for the tab. At the point of insertion of the tab, the carton is cut with a compound curve, the middle point of the curve is convex and forms a tongue-like guide for inserting the tip of the tab. On each side of the tongue the curved incision forms two yielding projections. In the initial operation of closing the carton, the tongue serves as a guide for the insertion of the tip of the tab.

While the tab is being inserted into the carton the end curves of the opening bend the sides of the tab. When the tab is fully inserted into the carton, the yielding projections force the bent sides of the tab against the inside face of the carton and the shoulders of the tab under the fold near the ends of the compound curved opening. Thus the tab is latched into place.

A modification of the construction of said carton is described below.

The modification consists of placing the cuts forming the shoulders of the tab slightly forward of the fold-down crease for the tab, that is, nearer to the tip of the tab. Also locating the compound curved incision so that the edge of the tongue cuts the scored folding line near it.

This modification allows more space for the said yielding projections. The improvement is that the yielding projections come to rest on the shoulders of the tab more readily and provide a larger latching surface.

The invention will be described with reference to the accompanying drawings in which:

Fig. 1 is a plan view of a carton blank from which a carton with the improved closure may be formed.

Fig. 2 is a top view of the carton with the top flap open showing location of the incisions.

Fig. 3 is a top view of the carton with the flap open showing location of the incisions described in the modifications.

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Similar characters refer to similar parts throughout the several views.

The carton blank 1 as shown in Fig. 1 may be manufactured of cardboard, kraftboard, pasteboard, or laminated sheets, etc., and is scored and cut as indicated. When folded along scored lines numbered 7 and flap 9 pasted inside the carton on side 10, a carton is formed open at both ends. The end flaps 8 are bent down along lines 8*a*. End section 4 is then folded along 5*a* and 6*a* and then tucked into place, the cuts 6, 6 engaging with end flaps 8, 8.

The flap 3*c* is then folded along scored line 5*a* and tab 2 is inserted into compound curved incision 5. The tongue 5*c* formed by the incision acts as a guide for speedy insertion.

In Fig. 2 a top view of the carton is shown with the flap open. As the top and bottom of the carton are identical in construction, one view will serve for both. In this view the location of the incisions 3, 3 of the tab 2 are shown more clearly cutting through the scored folding line 3*a*. The incision 5*d*, 5*d* forming the edges of the lips or yielding projections 5*b*, 5*b* is shown cutting through the scored folding line 5*a*.

As the tab 2 is inserted in 5 the end curves 5*d*, 5*d* bend the sides of the said tab. When the tab is completely inserted, the yielding lips 5*b*, 5*b* force back the sides of the tab against the inside face of the carton and the shoulders 3*b*, 3*b* under the fold near the ends of curves 5*d*, 5*d*. In this manner the tab 2 is securely locked in position.

The view in Fig. 3 is similar to Fig. 2 but shows the modification. The modification consists of placing the incisions 3, 3 of the tab 2 between the tip of the tab and the scored folding line 3*a* but close to the said line. Similarly the compound curved incision 5 is shown located so that the incision forming the tip of the tongue 5*c* cuts through the scored folding lines 5*a*.

The modified construction of the carton, that is, placing the cuts in a different location, allows the yielding projections to spring over the tab shoulders with greater ease and to cover a greater portion of the shoulders. In this way a greater latching surface is obtained and a more secure closure results.

My carton is particularly advantageous as a mailing carton which will not require wrapping or tape sealing, or tieing, and which may be very quickly closed. For example, very stringent requirements are made in the case of mailing bookmatches to insure that the package will remain closed through rough handling in ordinary mail usage. Heretofore secure wrapping and sealing

has been required, but after repeated tests of my carton, packed with book-matches, the carton being internally faced with aluminum foil, the closure means was found by the authorities so secure and satisfactory as to be approved, without the addition of sealing tapes, wraps or ties.

Having described by invention, what I claim and desire to secure by Letters Patent, is as follows:

A carton having side walls and end closure flaps, one of said flaps carrying a tab at its end, the tab having a fold line and formed with a cut at each edge adjacent said fold line, the tab being progressively decreased in width outwardly of said fold line, a closure flap opposite the tab-carrying closure flap having a fold line immediately connecting it to one of the side walls, and it being formed inwardly of said fold line with a continuous cut of double wave formation which provides yielding projections of said last named closure flap, at the ends of the cut therein, which

projections are adapted to yield when the tab is inserted into said cut and then to spring back within the edge cuts at the fold line of the tab to lock the tab in position.

JAMES CAGE.

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