March 12, 1946. G. YUNGBLUT 2,396,310

RECLOSABLE CARTON

Filed April 15, 1944

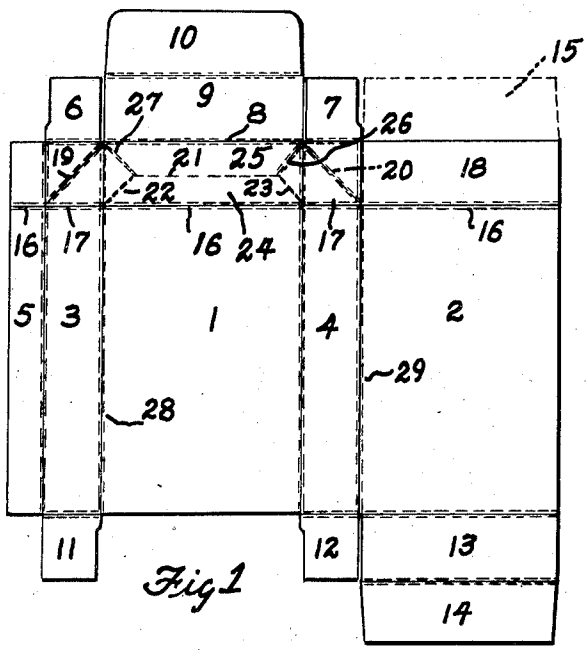


Fig. 1

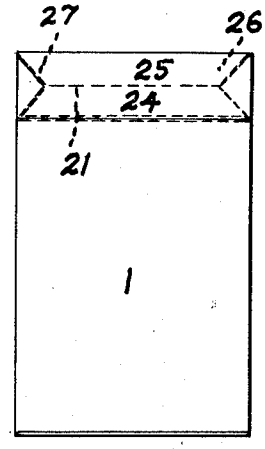


Fig. 2.

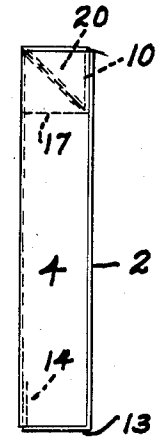


Fig. 3.

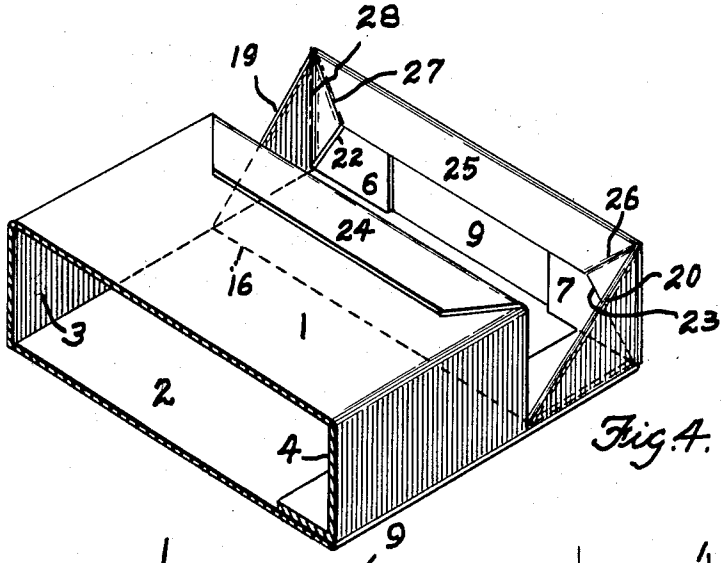


Fig. 4.

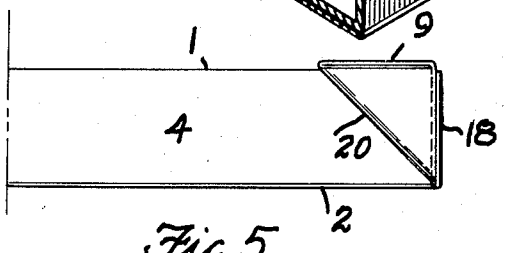


Fig. 5.

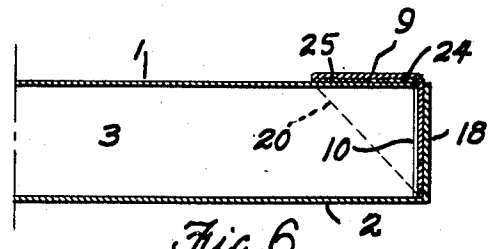


Fig. 6.

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RECLOSABLE CARTON

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Application April 15, 1944, Serial No. 531,217

8 Claims. (Cl. 229—44)

My invention relates to cartons of the reclosable type, having a hinged lid or cover member with top and front cover walls and cover side walls in articulation or other union. The cover is foldable down over the open box end, and a means is provided for releasably retaining the cover in closed condition. This means, in its usual form, embodies an abutment on the inside of the cover front wall, and an out-turned flap on the front wall of the carton body. When the cover is closed, the edge portion of the flap engages the abutment to hold the cover in place. The cover may be opened however, in spite of this holding action; and during opening there is sufficient flexing of the walls of the carton and/or the out-turned flap itself to permit the flap to swing on its line of articulation and release the cover. Cartons of this general type have been described in the co-pending application of Williamson and Carruth, Serial No. 451,711 filed July 21, 1942, Patent No. 2,369,387, February 13, 1945 entitled Hinged cover containers.

For the most part, such cartons require a special setting up operation for the cover part, entailing commercially the use of special machines. One of the objects of this invention is to provide a carton of the type described which does not require elaborate mechanism for the setting up of the cover portion.

It is an object of this invention to provide a carton which may be manufactured and tubed as such by methods current in the art, and on the standard carton tubing or folding devices, and which can be handled during filling and closure in the same ways as are current for the filling and closure of ordinary tuck-end or seal-end tubular cartons.

It is an object of my invention to provide in such a structure for the formation of the type of closure outlined above either wholly by hand, or with very simple mechanism, and either before or after the filling and final closure of the carton.

It is an object of my invention to provide a carton which, as initially produced, is a tubed structure, but from which a cover and associated inter-engagement parts may be simply set up utilizing portions of the initial side and end walls of the box for the purpose.

It is an object of my invention thus to provide a carton having severable portions in side and end walls for the purpose described, but requiring no bodily removal of any portions to produce the ultimate form.

It is an object of my invention to provide a carton in which not only is the abutment for the cover portion formed from a portion of the carton front wall, but in which additional portions of the carton front and side walls provide a means for holding the said abutment in place with respect to the cover as will hereinafter be described.

These and other objects of my invention which will be set forth below, or will be apparent to one skilled in the art upon reading these specifications, I accomplish by that certain construction and arrangement of parts of which I shall now describe an exemplary embodiment.

Reference is made to the accompanying drawing wherein:

Figure 1 is a plan view of a blank for my exemplary carton.

Figure 2 is a front elevation of the tubed and erected carton after closure.

Figure 3 is a side elevation thereof.

Figure 4 is a partial perspective view showing the arrangement of parts after the cover portion has been erected or set up from the structure of Figures 2 and 3, the cover portion being open.

Figure 5 is a partial side view of a completed structure with the cover closed.

Figure 6 is a longitudinal sectional view thereof.

In these figures solid lines are representative of lines of cut; a solid line with dotted lines on either side is representative of a line of score; a heavy dashed line is representative of a line of weakening in the blank upon which the blank may later be severed. The mode of formation of the line of weakening is not a limitation on this invention. It may be formed in any of the known ways, as by a line of perforations, a line of elongated or discontinuous slits, an elongated cut line, continuous except for small portions to hold the parts in initial assembly, or otherwise as may be desired.

In general, the carton comprises front and back walls 1 and 2, side walls 3 and 4, and a glue flap 5, in suitable order and articulation for tubing on conventional equipment. The ends of the side and end walls will be provided with closure flaps of any of the known types.

I have shown in Figure 1, short top side wall flaps 6 and 7, articulated to the side walls 3 and 4 along the score line 8, a top flap 9 articulated to the front wall 1, and a tuck flap 10 articulated to the top flap 9. At the bottom of the blank there are flaps 11 and 12 articulated to the side walls 3 and 4, a bottom flap 13 articulated to the back wall 2, and a tuck flap 14 articulated to the bottom flap 13. This arrangement is characteristic of standard tuck-end construction. In

standard seal-end construction the tuck flaps 10 and 14 would be eliminated, while the front wall 1 at its bottom, and the back wall 2 at its top, would carry in articulation, other flaps similar to 9 and 13, so that the box could be sealed by adhesive applied between lapping pairs of top and bottom closure flaps. A seal-end flap on the top of back wall 2 is indicated in dotted lines at 15 in Figure 1. Other forms of closure structure such as interlocking flaps, may be likewise employed.

In my carton a score line 16 is formed in the front and back walls of the carton downwardly from the upper edges of these walls by a distance substantially equal to the thickness of the carton from front wall to back wall. This distance may be slightly exceeded to facilitate the operation of the cover as will hereinafter become apparent. The score line is preferably continued across the glue flap also as shown. In line with this score the side walls 3 and 4 are provided with lines of weakening 17. The score line 16 demarks an upper portion of the back wall 2 indicated at 18. The cut lines 17 demark upper portions of the side walls 3 and 4, which portions are provided with diagonal scores 19 and 20. A cut line, or line of weakening 21, extends partially across the upper portion of wall 1, and parallel to the score lines 8 and 16. At the ends of this score line there are others, 22 and 23, connecting it diagonally with the lines of weakening 17 as shown. The cut lines 21, 22 and 23 demark a flap 24, which is articulated to the front wall 1 by score line 16, and an abutment member 25, which is articulated to the top wall 9 by score 8.

I prefer to provide a diagonal score line 26 connecting the upper right-hand corner of front wall 1 with the juncture between cut lines 22 and 23, and also a diagonal score line 27 connecting the upper left-hand corner of front wall 1 with the juncture of lines 21 and 22. These last mentioned score lines facilitate the setting up of the cover portion as will hereinafter be explained; but where the board is sufficiently thin and flexible they may be omitted.

The blank structure of Figure 1, or the variants referred to, will be tubed in the usual fashion on standard carton machinery. This is done by bending the blank along the score lines 28 and 29, adhesive having been applied to the glue flap 5, in such a manner as to adhere the glue flap inside the outer edge of back wall 2. The cartons in this form are shipped to the user.

The user erects the tubed cartons by squaring them up as is the usual practice; and the cartons may likewise be filled and closed in the usual fashion and, where available, by the usual filling and closing machinery. The openable cover portion will be set up after the closure of the top of the carton in the normal fashion. This may be done before filling, and before the closure of the bottom of the carton so that the carton may subsequently be filled through the bottom. Or it may be done after the closure of the carton at both top and bottom, and prior to the shipment of the goods in the carton. Yet again, the filled and closed carton as illustrated in Figures 2 and 3, may be shipped to the ultimate consumer who can then open the carton up by bending back the top portion thereof so as to cause the carton to part in walls 3, 1 and 4 on the cut lines or lines of weakening 17, 21, 22 and 23. Then the ultimate consumer, after using a portion of the contents of the carton (assuming it to have been completely filled), can quite simply set up the cover portion so as to make use of the reclosable feature.

In any event, the top closure is set up by fracturing or parting the carton along the cut lines 17, 21, 22 and 23. This frees the flap 24 which then can be bent over outside the front wall 1, as shown in Figure 4. The abutment member 25 is bent over on the score line 8, inside and parallel to the top wall 9. The upper portions of the side walls bend respectively on the diagonal score lines 19 and 20, folding over inside the upper side wall portions; and the adjacent articulated triangular areas of the upper portion of the front wall demarked at the left by score lines 26 and 27, and cut line 22, and at the right by score lines 29 and 26 and cut line 23 form a structure to keep the abutment 25 in the position aforesaid.

The cover is shown in completely set up but open condition in Figure 4. It is closed by bending it forwardly and upwardly on score line 16 in back wall 2, and in the glue flap. In its final closed position as illustrated in Figures 5 and 6, the top wall 9 of the carton has become the cover front wall, while the upper portion 18 of the back wall 2 has become the cover top wall. The cover side walls are triangular in conformation and have been formed from the upper portions of side walls 3 and 4. In the closed position of the cover, the edge of flap 24 engages behind the edge of abutment 25 as shown in Figure 6.

The setting up of the cover portion as described may be done wholly by hand; but it may also be done by a simple mechanical plunger device for engaging and depressing those parts of the upper portions of front wall 1 and side walls 3 and 4, which are to be disposed inwardly of the cover proper. The infolded construction which has been described serves to maintain the abutment 25 in position against the cover front wall tightly enough to prevent the flap 24 from passing behind it. Hence no other attachment of abutment 25 to wall 9 is required, although the abutment may be stapled or otherwise attached if desired.

It will be evident that the improvement may be applied to cartons of widely varying dimensions, and further that it will be within the skill of the worker in the art so to position the upper ends of the score lines demarking the front wall from adjacent side walls as to relieve the binding effect of the formed cover at the sides of the carton when it is in the position shown in Figures 5 and 6, and also so to position the score line 16 in back wall 2 as to relieve the binding effect of the ultimate cover front wall.

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

1. A carton blank for the purpose described having in articulation enclosing walls and a glue flap, means at the wall ends to form end closures, a line of demarcation extending across the said walls inwardly from end portions thereof approximately the width of one of the walls, said line of demarcation in a pair of said walls being a score line and being a line of weakening in another pair of said walls, a line of weakening extending laterally in the upper portion of one of said first mentioned pair of walls and of less length, said last mentioned line of weakening being connected by other lines of weakening extending diagonally to the said score line at the edges of said wall, the demarked portions of the second mentioned pair of walls having diagonal score lines therein extending from said line of demarcation to the end

corners of said wall portion containing said intermediate line of weakening.

2. In a blank for the purpose described, a side wall, a front wall, a side wall and a back wall in articulation in the order named, together with a glue flap, means at the ends of said walls for forming closures for a carton erected from said blank, a line of demarcation extending laterally across said blank, spaced from an edge of said walls by substantially the width of said side walls, and constituting score lines in said front and back walls and lines of weakening in said side walls, said line of demarcation dividing upper portions of said walls from lower portions thereof, a line of weakening extending partially across the upper portion of said front wall intermediate said line of demarcation and the top edge of said wall, lines of weakening connecting the ends of said last mentioned line of weakening in said front wall with the said line of demarcation therein at the side edges of said wall, and diagonal score lines in the upper portions of said side walls extending from said line of demarcation at the edges of said side walls removed from said front wall to the upper corners of said side walls adjacent said front wall.

3. In a blank for the purpose described, a side wall, a front wall, a side wall and a back wall in articulation in the order named, together with a glue flap, means at the ends of said walls for forming closures for a carton erected from said blank, a line of demarcation extending laterally across said blank, spaced from an edge of said walls by substantially the width of said side walls, and constituting score lines in said front and back walls and lines of weakening in said side walls, said line of demarcation dividing upper portions of said walls from lower portions thereof, a line of weakening extending partially across the upper portion of said front wall intermediate said line of demarcation and the top edge of said wall, lines of weakening connecting the ends of said last mentioned line of weakening in said front wall with the said line of demarcation therein at the side edges of said wall, and diagonal score lines in the upper portions of said side walls extending from said line of demarcation at the edges of said side walls removed from said front wall to the upper corners of said side walls adjacent said front wall, and diagonal score lines connecting the meeting points of said lines of weakening in said front wall with the upper corners of said front wall.

4. In a blank for the purpose described, a side wall, a front wall, a side wall and a back wall in articulation in the order named, together with a glue flap, means at the ends of said walls for forming closures for a carton erected from said blank, a line of demarcation extending laterally across said blank, spaced from an edge of said walls by substantially the width of said side walls, and constituting score lines in said front and back walls and lines of weakening in said side walls, said line of demarcation dividing upper portions of said walls from lower portions thereof, a line of weakening extending partially across the upper portion of said front wall intermediate said line of demarcation and the top edge of said wall, lines of weakening connecting the ends of said last mentioned line of weakening in said front wall with the said line of demarcation therein at the side edges of said wall, and diagonal score lines in the upper portions of said side walls extending from said line of demarcation at the edges of said side walls removed from said front wall to the upper corners of said side walls adjacent said front wall, and diagonal score lines connecting the meeting points of said lines of weakening in said front wall with the upper corners of said front wall, said means for closure constituting flaps articulated to the upper and lower ends of said side walls, top and bottom flaps articulated respectively to the upper end of said front wall and the lower end of said back wall and tuck flaps articulated to said top and bottom flaps.

5. In a blank for the purpose described, a side wall, a front wall, a side wall and a back wall in articulation in the order named, together with a glue flap, means at the ends of said walls for forming closures for a carton erected from said blank, a line of demarcation extending laterally across said blank, spaced from an edge of said walls by substantially the width of said side walls, and constituting score lines in said front and back walls and lines of weakening in said side walls, said line of demarcation dividing upper portions of said walls from lower portions thereof, a line of weakening extending partially across the upper portion of said front wall intermediate said line of demarcation and the top edge of said wall, lines of weakening connecting the ends of said last mentioned line of weakening in said front wall with the said line of demarcation therein at the side edges of said wall, diagonal score lines in the upper portions of said side walls extending from said line of demarcation at the edges of said side walls removed from said front wall to the upper corners of said side walls adjacent said front wall, and diagonal score lines connecting the meeting points of said lines of weakening in said front wall with the upper corners of said front wall, said means of closure comprising seal end flaps articulated respectively to the ends of said walls.

6. A tubed carton structure comprising body walls in articulation and means at the ends of the body walls for forming closures for the tubed structure, a line for severance extending about certain of said walls, and in an opposite pair of said walls lying at a distance from the top of the carton substantially equivalent to a transverse dimension of said carton, said line for severance being configured in an intermediate wall to provide a flap of less width than said dimension turnable outside said wall and an abutment means turnable inside the top closure of said carton, additional walls being scored above said line of severance to provide portions for infolding, which portions are connected with said abutment means, and when infolded serve to retain said abutment means inwardly against said top closure of said carton.

7. A tubed carton comprising a plurality of body walls in articulation, and means at the ends of said body walls to provide closures for said carton, said carton having a line of demarcation running about said body walls and spaced from the ends thereof a distance substantially equivalent to one transverse dimension of the erected carton, said line of demarcation comprising a score line in two of said walls and lines for severance in other walls, one of said scored walls having a line of weakening intermediate said line of demarcation and the upper edge thereof, said line of weakening being less in length than the width of said wall, and connected at its ends with the edges of said wall at said line of demarcation by additional lines of weakening, a top portion of said carton being severable along said lines of weak-

ening from the remainder thereof excepting in one of the said scored walls so as to provide a hinged cover, the disposition of said lines of weakening as aforesaid being such as to leave upon the opposite wall a flap bendable outwardly and to leave upon the cover an abutment member bendable inwardly, together with adjacent articulated portions of the same and other walls bendable inwardly to maintain said abutment means in folded position.

8. In a tubed carton, front, back and side walls in articulation, a closure at each end of the said tubed structure forming top and bottom walls respectively, the front and side walls terminating short of the top wall, an outwardly turned flap at the top edge of the front wall, cover wall portions integral with said top wall structure at front and side edges thereof, a portion of said wall at the front edge thereof being turned inwardly to form an abutment, and additional wall portions at the front and side edges of said top wall structure and integral with said abutment being turned inwardly to maintain said abutment in folded position.

GIBSON YUNGBLUT.