United States Patent

[11] **3,616,987**

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[21] Appl. No. **15,331**
[22] Filed **Mar. 2, 1970**
[45] Patented **Nov. 2, 1971**

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[54] **CARTON WITH RECLOSABLE CORNER PORTION**
3 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** ..... **229/17 R,** 229/44 R, 229/7 R, 229/51 TC
[51] **Int. Cl.** **B65d 5/42**
[50] **Field of Search** ..... 229/44 R, 17 R, 51 SC, 51 TC, 7 R

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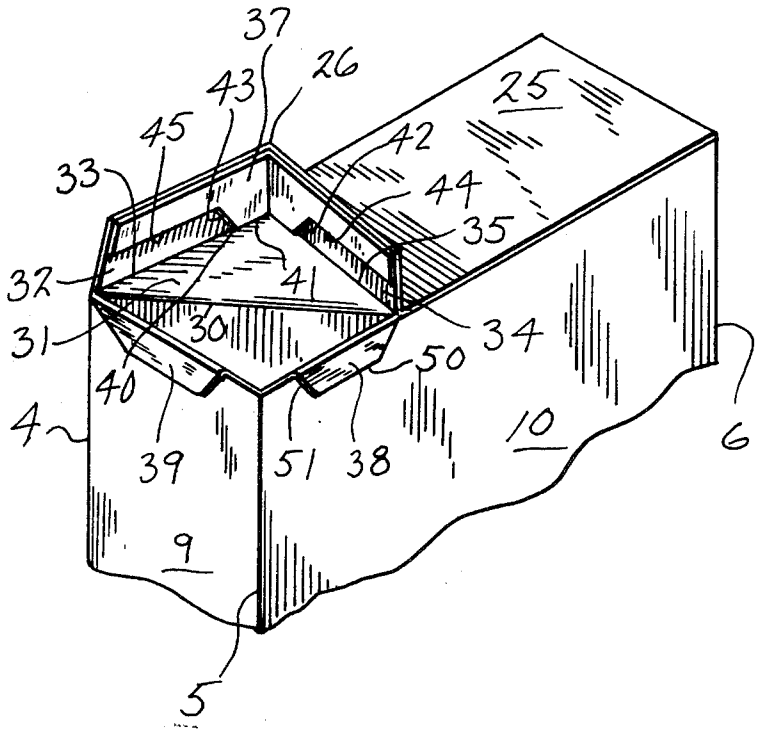
ABSTRACT: A carton, and a blank therefor, including a wraparound corner locking flap construction comprising a T-shaped first element joined to part of the carton and two other elements joined to another part of the carton. Reclosure after the initial opening of the carton is obtained by engagement of the T-shaped element with the other locking elements. The construction of the wraparound corner locking flap is of a particular configuration which will give especially effective reclosure of a carton having a wall panel with a corner portion which can be articulated about a diagonal fold line formed in such wall panel.



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SHEET 1 OF 2

Fig. 1

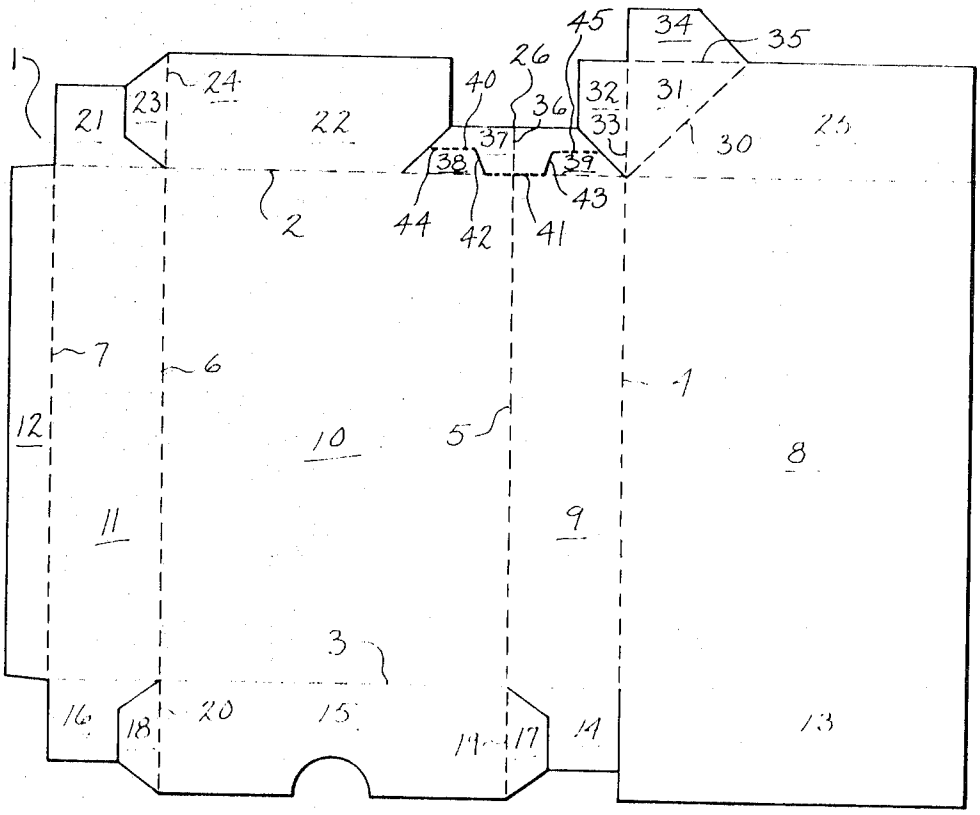

Fig. 5

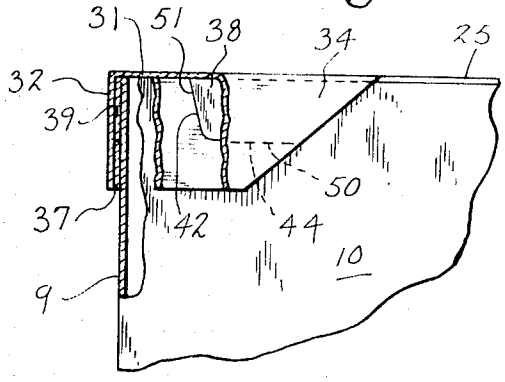

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Fig. 2

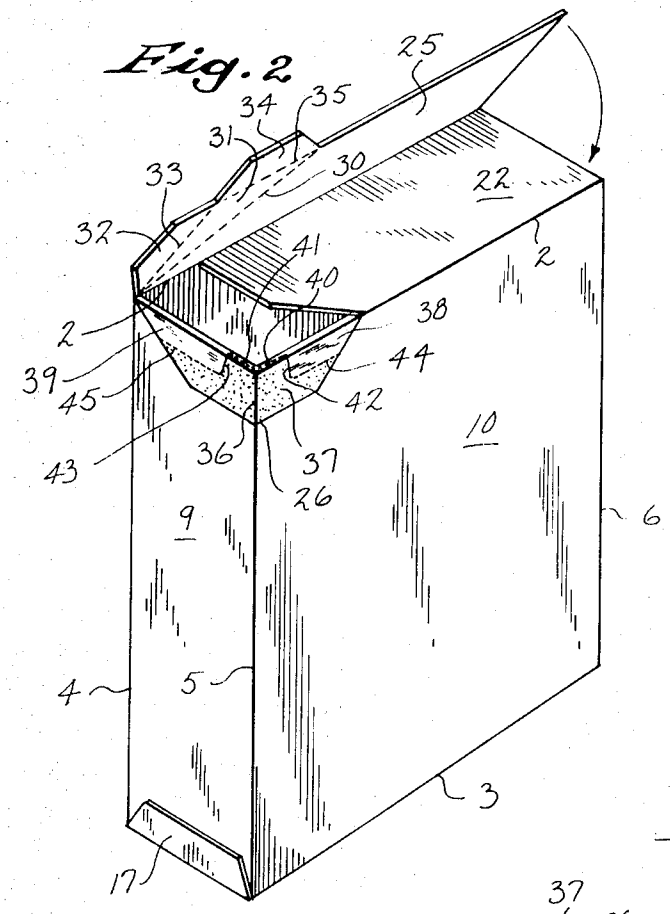


Fig. 4

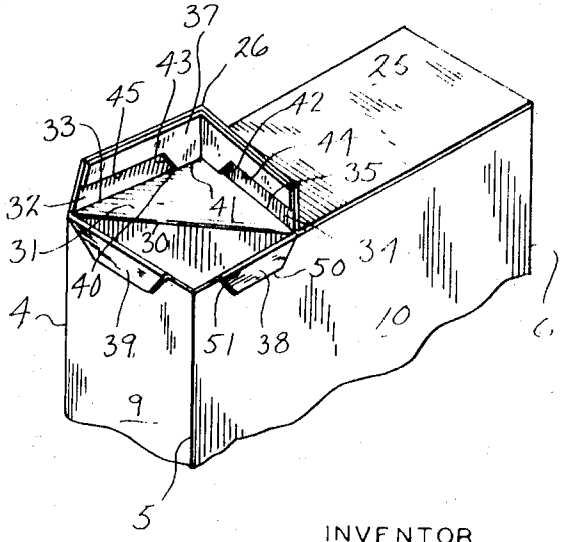
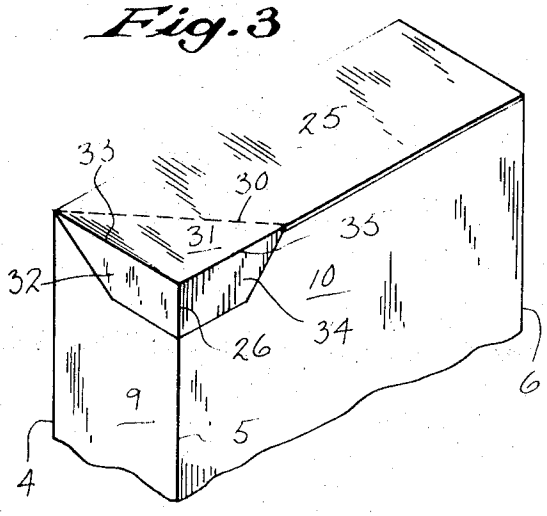


Fig. 3



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CARTON WITH RECLOSABLE CORNER PORTION

BACKGROUND OF THE INVENTION

1. Field

This invention relates to the field of cartons having a movable corner portion of the type adapted to provide an open corner through which packaged contents can be dispensed.

2. Prior Art

Although various types of reclosable cartons having a locking construction formed by coacting elements carried between the body of the carton and a cover of the carton are known, the prior art constructions have generally been suitable only for a trunk-style carton wherein an entire top wall is moved in order to achieve opening. The reclosure obtained with such constructions has usually been only single-edge contact between the cooperating locking elements. Normally, the locking structure has been attached either to only one wall of the carton or on two parallel sidewalls of the carton. For these reasons, the known carton constructions employing reclosure structure similar to that of the carton of the present invention have been unsatisfactory for or failed to achieve maximum effectiveness with a carton of the type having a movable corner portion.

SUMMARY OF THE PRESENT INVENTION

My present invention relates to a carton having a movable corner portion of one of its walls, skirt panels depending from two edges of the movable corner portion to overlie intersecting walls of the carton at a corner of the carton body, and a wraparound corner locking panel which in its initial condition is folded over two intersecting walls of the carton to underlie the skirt panels depending from the movable corner portion. The corner locking panel is divided into three sections: a central T-shaped flap and a pair of locking tabs or ears, with the T-shaped flap being joined to the skirt panels of the corner portion and the locking tabs joined to the body of the assembled carton. The T-shaped flap is joined to the two locking tabs before the carton is opened but upon opening, the T-shaped flap separates from the two locking tabs along a severance line defined in the corner locking panel. After part of the contents of the package is used, reclosure is obtained by folding the corner portion downwardly so that the T-shaped locking flap engages the two locking tabs along a side and end edge thereof.

One of the main objects of my invention is to provide a carton with a movable corner portion which can be used as a pour spout and which can be easily reclosed by engagement of structure carried by the movable corner portion with other structure remaining attached to the body of the carton. A further object is to provide a reclosable carton with a corner pour spout construction embodying a T-shaped panel as one of the locking elements adapted to cooperate with two other elements attached to intersecting walls of the carton to thereby provide a strong, rigid but effective reclosure corner construction. A more specific object is to provide the particular carton and blank constructions hereinafter specifically claimed.

DESCRIPTION OF THE DRAWINGS

The present invention is described herein with reference to the accompanying drawings which illustrate a presently preferred embodiment. The drawings are meant to illustrate, not limit, this invention inasmuch as it is anticipated that those skilled in the art will be able to devise changes from the illustrated embodiment that will remain within the true scope of this invention and it is intended to embrace all such changes within the scope of the claims. In the drawings:

FIG. 1 is a plan view of a carton blank constructed in accordance with this invention;

FIG. 2 is a perspective view of a carton assembled from the blank of FIG. 1;

FIG. 3 is a partial perspective view illustrating the carton with its movable corner portion in its closed condition;

FIG. 4 is a partial perspective view illustrating the movable corner portion in its open condition; and

FIG. 5 is a view partly in section and partly broken away which illustrates the reclosure action obtained with the carton construction of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates a sheet of carton material cut and scored to define a carton blank 1 wherein spaced horizontal fold lines 2 and 3 and spaced vertical fold lines 4, 5, 6 and 7 divide the blank into sidewall 8, end wall 9, sidewall 10, end wall 11 and glue flap 12. The vertical fold lines 4–7 extend between the two horizontal fold lines 2 and 3. At the bottom of the blank 1, closure flap 13 is hinged to sidewall 8, end closure flap 14 is hinged to end wall 9, closure flap 15 is hinged to sidewall 10, and end closure flap 16 is hinged to end wall 14, with fold line 3 forming the hinged connection between the foregoing wall panels. Closure flap 15 includes ears 17 and 18 connected to its main panel along short fold lines 19 and 20 respectively, formed as extensions of vertical fold lines 5 and 6. At the top edge of blank 1, end closure flap 21 is hinged to end wall 11 and closure flap 22 is hinged to sidewall 10, both flaps being hinged to their respective walls along horizontal fold line 2. Flap 22 includes ear 23 hinged thereto along fold line 24 extending from vertical fold line 6.

The present invention relates to the configuration, and locking function achieved thereby, of the top closure flap 25 and wraparound corner locking panel 26. The flap 25 is hinged to sidewall 8 along horizontal fold line 2 and the corner locking panel 26 is hinged to end wall 9 and a portion of sidewall 10 along horizontal fold line 2.

The top closure flap 25 is formed as a rectangular panel including a diagonal fold line 30 extending from a corner of the flap 25 (adjacent end wall 9 along the fold line 2) across to its outer edge at a 45° angle to thereby define a movable corner portion 31 of the flap 25. A foldable skirt panel 32 is connected to one side of the corner portion 31 along fold line 33, which is an extension of fold line 4, and a similar skirt panel 34 is connected to the other side of the corner portion 31 along fold line 35 which is aligned with the outer edge of the flap 25.

The corner locking panel 26 is hinged to the horizontal fold line 2 and is twice as long as the width of the end wall 9 for the purpose hereinafter explained and includes a center fold line 36 extending from the vertical fold line 5. Panel 26 is divided into a generally T-shaped locking flap 37 and locking tabs 38 and 39 along a severance line 40 which includes a central section 41 disposed along the horizontal fold line 2, vertical legs 42 and 43 extending from each end of the section 41 about halfway across the panel 26, and horizontal arms 44 and 45 extending from the ends of each leg 42 and 43, respectively, outwardly to the inclined side edges of the locking panel 26.

FIG. 2 illustrates a carton assembled from the blank 1 formed upon folding the panels 8, 9, 10 and 11 about their respective vertical fold lines, and folding the glue flap 12 inwardly and joining it, as by a suitable adhesive, to the inner edge portion of the sidewall 8, thereby forming a rectangular carton. The bottom portion is closed by folding the end closure flaps 14 and 16 inwardly across the open bottom, then folding the closure flap 13 over the two end flaps, joining them to the flap 13 by adhesive if desired, and thereafter folding the closure flap 15 over and joining it to the flap 13 while at the same time folding the ears 17 and 18 over and joining them to the end walls 9 and 111 respectively. The wraparound corner locking panel 26 is folded downwardly about the fold line 2 so that it lies over the end wall 9 and a portion of the sidewall 10. Closure of the top of the carton is obtained by first folding end closure flap 21 inwardly and then folding closure flap 22 over part of the top end of the carton, joining flap 21 to flap 22 by means of adhesive if desired, and gluing ear 23 of flap 22 to the upper portion of the end wall 11. The final step is to fold over the top closure flap 25 and join it to the closure flap 22, this final condition being illustrated in FIG. 3. Skirt panels 32

and 34 are each adhesively secured to the T-shaped flap 37 of the locking panel 26 by means of adhesive as indicated by the stippling of the flap 37 in FIG. 2.

The carton, of course, is filled with the commodity which is to be packaged therein prior to achieving the final closure, it usually being preferable to complete the top closure first, load the carton through the open bottom, and then close the bottom end after loading is completed. The carton of this invention may be used to package both food and nonfood items, such as soap powder, cereal, granular products in general, snack food items, etc. The packaged contents can be contained inside the carton directly or in a liner or interior bag carried inside the carton if the packaged materials need special protection.

The user opens the carton by grasping the skirt panels 32 and 34 of the movable corner portion and pulling the corner portion upwardly about the diagonal fold line 30. This opening action severs the wraparound corner locking panel 26 into two sections along the severance line 40 formed therein to obtain the condition illustrated in FIG. 4. It will be noted from FIG. 4 that the locking tabs 38 and 39 remain attached to the body of the carton whereas the T-shaped locking flap 37 remains adhered to the skirt panels 32 and 34 attached to the movable corner portion 31. This provides an open corner of the carton which is used as a dispensing opening through which the contents of the carton which is used as a dispensing opening through which the contents of the carton can be poured.

When only a portion of the contents packaged in the carton is to be dispensed, the user can reclose the carton by moving the corner portion 31 and its attached skirt panels 32 and 34 downwardly to its original position as illustrated in FIG. 3. The corner portion will be held in this position by the locking action achieved through engagement of the T-shaped locking flap 37 adhered to the skirt panels 32 and 34 with the locking tabs 38 and 39 that remain attached to the body of the carton. Referring now to FIG. 5, upon closure of the corner portion the T-shaped flap 37 will engage the end and lower edge of each of the tabs 38 and 39 to secure the corner portion in place. As indicated with reference to tab 38, the lower arm of the T-shaped flap 37 engages the bottom edge 50 of the tab 38 and the edge of the central portion of the T-shaped locking flap 37 engages the end 51 of the tab 38. The end and bottom edges of the ear 39 will be engaged in the same fashion.

The locking action achieved upon reclosure of the corner portion as described above provides for effective yet rapid reclosure of the carton. Because the T-shaped flap 37 is attached to skirt panels of the movable corner portion, a strong rigid double-layer locking element is formed. The flap 37 is used as a structural member to hold the skirt panels in the desired configuration, in addition to its function as part of the locking structure. Furthermore, when in the reclosure position, the T-shaped locking flap 37 engages or surrounds the two locking tabs 38 and 39 along two of their sides so that it is impossible not to achieve the desired locking engagement between the flap 37 and tabs 38, 39. The central section of the T-shaped locking flap 37 remaining connected to the corner portion of the top further adds strength and rigidity to the reclosure structure, in distinction to the type of locking action, achieved in which one flap may extend horizontally without being connected to the corner portion about a central section. The locking action is an improvement over that wherein there is only a single edge engagement utilized between the two elements of the locking structure. Also, the fact that locking is achieved on two walls of the carton rather than only one wall seems to enhance the reclosure action.

The carton and the blank therefor as described herein can be formed of any suitable carton material typically used in the converting art such as paperboard, cardboard, plastic material, etc. The material may be uncoated or include a functional coating such as a barrier coating, heat seal coating, etc. and may be of single layer or multiple layer construction. The several panels and flaps can be cut from the material of the blank by the usual converting diecutting operations, and the fold lines and severance lines can be formed therein by suitable scoring, creasing, slitting or perforating operations. The term fold line as used herein is defined as any construction along which the material of the blank can be hinged or articulated and includes a continuous crease extending partly through the material, a series of slits extending partially or entirely through the material, etc. A severance line as used herein means any construction along which the panel or flap can be separated and can be a line of perforations, a line of short or long slits interrupted by short portions of the carton material or similar constructions. As mentioned previously, the carton of this invention is useful for the packaging of a variety of both food and nonfood items and can be combined with an interior liner or inner pouch. A convenient manner of supplying the carton blank to a packager is by folding the blank about the fold lines 4 and 6, joining glue flap 12 to the side wall 8, and folding the locking panel 26 over the walls 9 and 10; this forms a flattened sleeve which the packager can open quickly, close the top, fill through the open bottom and then close the bottom to complete the container enclosure.

I claim:

1. In a carton blank for assembly into a rectangular container having first and second side walls hinged to opposite sides of an end wall, the improvement comprising the combination therewith of:
   1. a closure flap hinged to the first sidewall along a first fold line and adapted to extend to the second sidewall,
      a. a diagonal fold line defined in the closure flap to form a movable corner portion thereof,
      b. a first skirt panel hinged to a first side of the corner portion and adapted to extend over the end wall when the blank is assembled into a carton,
      c. a second skirt panel hinged to a second side of the corner portion at right angles to the first side and adapted to extend over the second sidewall when the blank is assembled into a carton,
   2. a wraparound corner locking panel hinged to the end wall and to a portion of the second sidewall along the first fold line,
      a. a severance line dividing the corner locking panel into a generally T-shaped locking flap having its central section connected to the first fold line and a pair of locking tabs hinged to the first fold line,
      b. the corner locking panel adapted to be positioned between the skirt panels of the movable corner portion and the end wall and second sidewall when the blank is assembled into a carton.

2. A carton blank according to claim 1, wherein:
   the severance line in the corner locking panel has a central portion arranged along the first fold line, a first leg extending from each end of the central portion about halfway across the panel, and a second leg extending from the end of each first leg to the adjacent edge of the corner locking panel.

3. In a carton having first and second sidewalls connected by end walls to define a container body, the improvement comprising the combination therewith of:
   1. a top closure flap connected to one of the sidewalls and extending across the top of the carton, a diagonal fold line defined across a corner of the top closure flap to form a movable corner portion thereof, a skirt panel depending from each side of said movable corner portion, with one of the skirt panels extending over one end wall of the carton and the other extending over a sidewall of the carton,
   2. a corner locking panel hinged to the top edge of said one end wall and an adjacent sidewall and being positioned between said depending skirt panels and the carton walls, the corner locking panel including a severance line dividing it into a central T-shaped locking flap and two locking tabs, the T-shaped locking flap having its central section connected to the top edge of the carton and being adhered to said depending skirt panels of the corner portion.