United States Patent

[11] 3,568,910

[72] Inventor **Don J. McConnell**
Paramount, Calif.

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[73] Assignee **Continental Can Company, Inc.**
New York, N.Y.

[54] **CARTON WITH EASY TO OPEN POUR SPOUT**
13 Claims, 10 Drawing Figs.

[52] **U.S. Cl.** **229/17**
[51] **Int. Cl.** **B65d 5/72**
[50] **Field of Search** 229/17

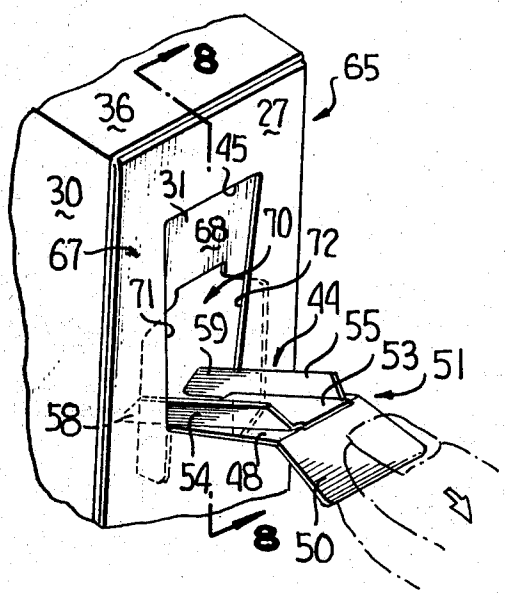
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Primary Examiner—Davis T. Moorhead
Attorney—Diller, Brown, Ramik & Holt

ABSTRACT: This disclosure relates to a carton including pour spout provisions defined by a first exterior pour spout defining panel and a second aligned interior pour spout defining panel. The first panel includes an inwardly depressible starting portion and an outwardly extensible gripping portion and the second panel includes a central portion affixed to the exterior first panel and pour spout sidewall forming portions hingedly connected with the central portion. Means located inwardly with respect to the exterior first panel blocks inward movement of the gripping portion to provide outward extension thereof upon depression of the starting portion.



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SHEET 1 OF 2

FIG.1

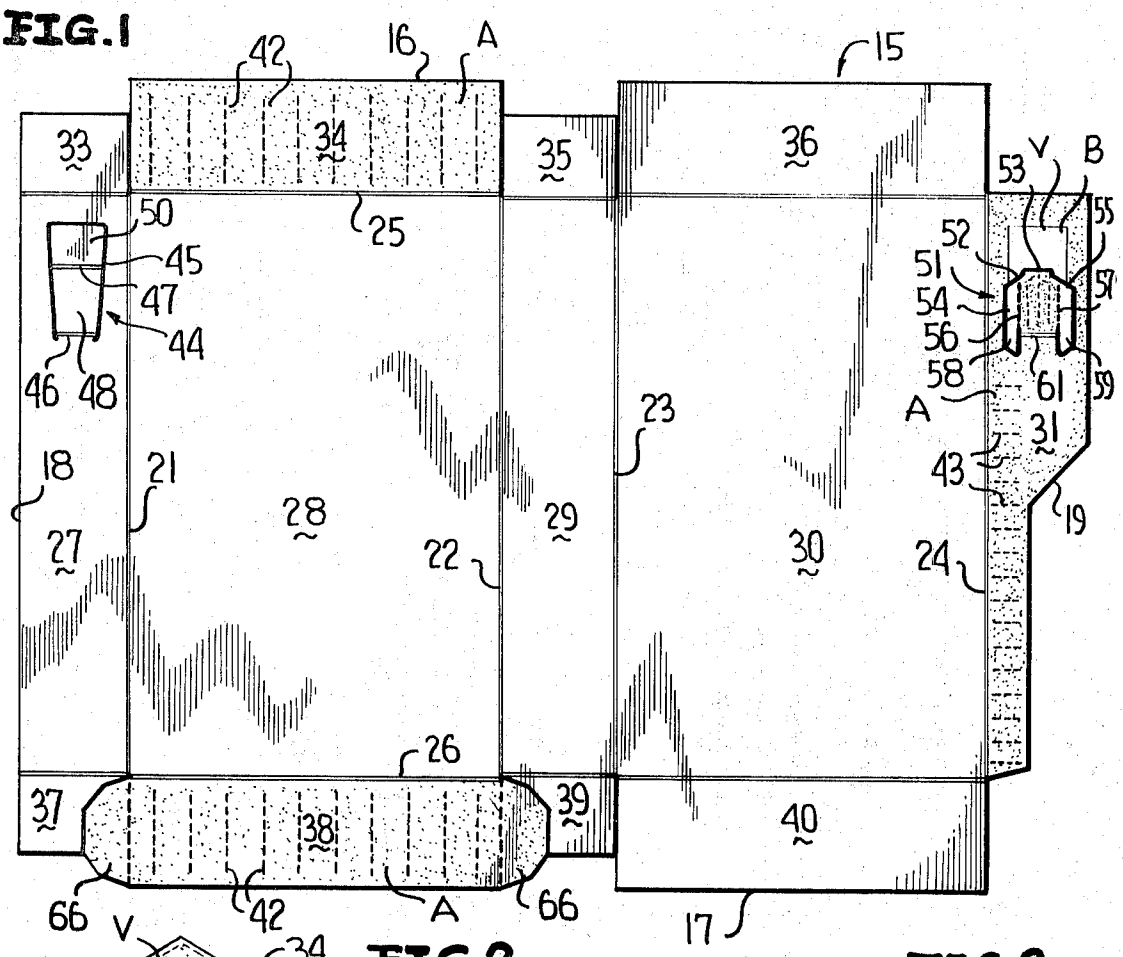


FIG.2

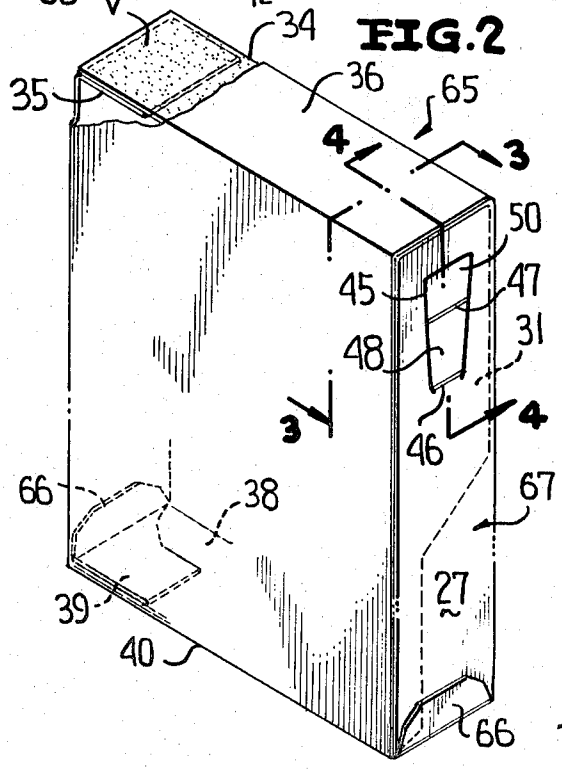
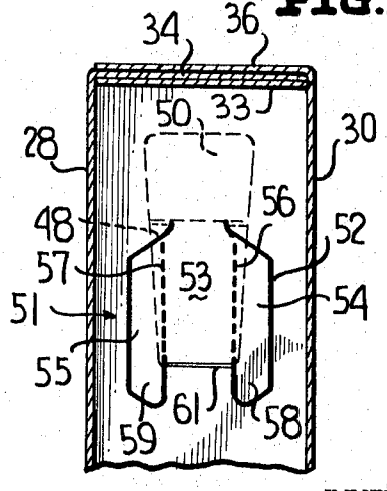


FIG.3



INVENTOR
DON J. McCONNELL

BY Mason, Porter, Miller & Brown
ATTORNEYS

FIG.4

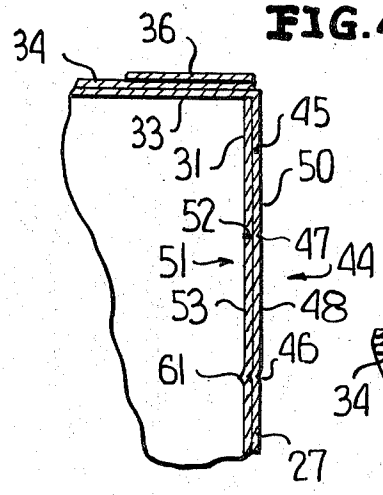


FIG.5

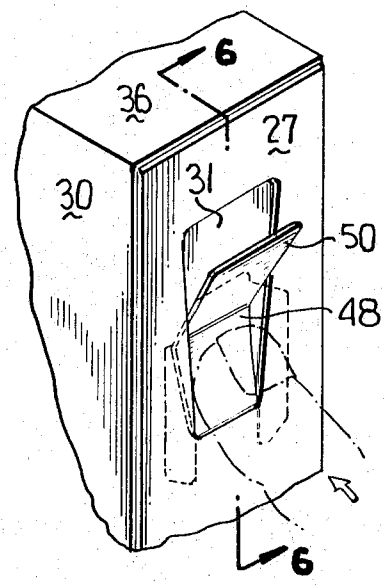


FIG.6

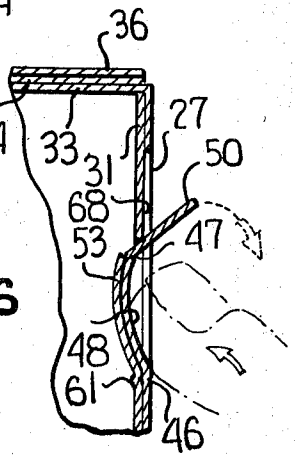


FIG.7

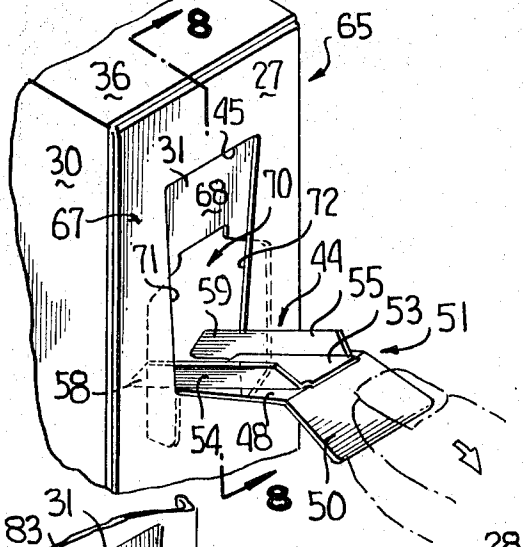


FIG.8

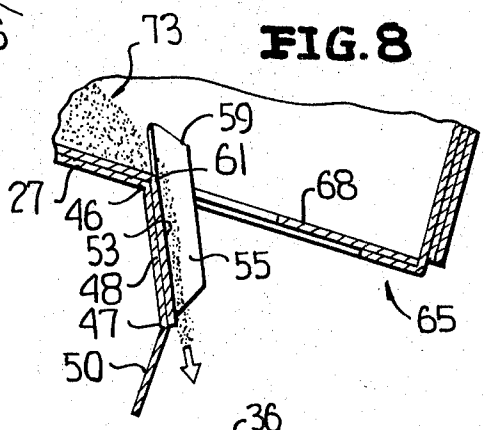


FIG.9

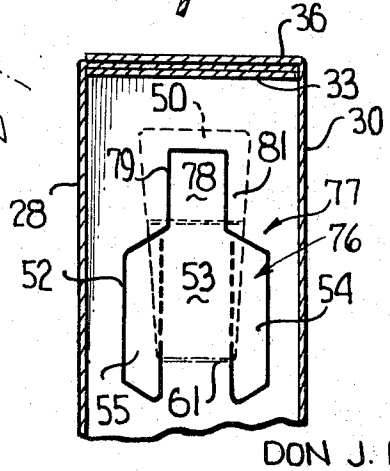
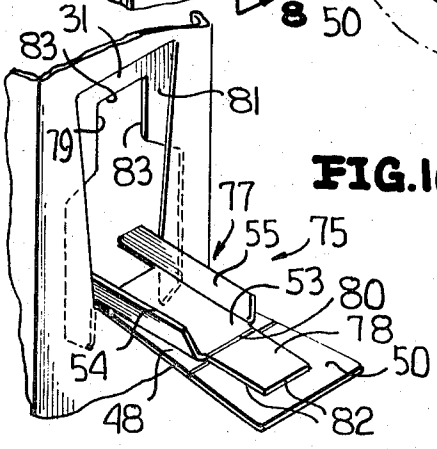


FIG.10



INVENTOR
DON J. McCONNELL

BY
Mann, Porter, Deer & Brown
ATTORNEYS

CARTON WITH EASY TO OPEN POUR SPOUT

Previously, cartons have been provided including pour spout provisions movable to effect opening of the carton. However, such previously known cartons have often been characterized by the need for separate pour spout provisions formed from other than the material of the carton itself and have commonly been characterized by difficulty in the opening of the carton resulting from the proximity of the pour spout provisions and the carton wall to which such provisions have been secured.

In accordance with the foregoing, it is a primary object of this invention to provide a carton or carton blank having pour spout defining provisions characterized by the ease of gripping thereof for employment by the user.

Additionally, it is an object of this invention to provide in a carton or carton blank pour spout provisions defined by the material of the blank and easily movable out of the plane of the carton wall in which they are formed to effect opening of the carton.

Yet another object of this invention is to provide pour spout provisions in a carton of carton blank including a first partially removable panel having starting and gripping portions and interiorly located means blocking inward movement of the gripping portion to effect outward extension thereof upon depression of the starting portion.

It is a further object of this invention to provide pour spout provisions in a carton or carton blank including first and second pour spout defining opening panels to be aligned and joined, the second of the pour spout defining panels including pour spout sidewall defining means pivotable with respect to a central portion of the second panel upon opening of the carton.

With these and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claimed subject matter, and the several views appearing in the accompanying drawings.

IN THE DRAWINGS

FIG 1 is a top plan view of a carton blank in accordance with this invention and illustrates a pair of terminal panels adjacent transverse edge portions of the blank which are adapted to be brought into overlying relationship, the terminal panels including first and second pour spout defining panels formed therefrom to be partially adhesively joined.

FIG. 2 is a perspective view of a carton formed from the carton blank of FIG. 1, and illustrates the disposition of the exterior one of the pour spout defining panels having a depressible starting end portion and an outwardly extensible gripping end portion.

FIG. 3 is an enlarged fragmentary sectional view taken along the line 3–3 of FIG. 2 shows the interior one of the pour spout defining panels having pour spout sidewall defining portions hingedly connected to a central portion thereof.

FIG. 4 is an enlarged fragmentary sectional view taken along the line 4–4 of FIG. 2 and illustrates the alignment of the interior and exterior pour spout defining panels.

FIG 5 is an enlarged fragmentary perspective view of the carton of FIG 2 and illustrates the manner in which the carton is opened by inward depression of the starting portion of the exterior pour spout defining panel with resultant outward extension of the gripping portion of the exterior pour spout defining panel.

Fig. 6 is a fragmentary sectional view taken along the line 6–6 of FIG. 5 and shows the engagement of an interior terminal panel blocking portion and outwardly extensible gripping portion of the exterior pour spout defining panel.

FIG. 7 is an enlarged fragmentary perspective view of the carton of FIG. 2 and illustrates outward withdrawal of the entire pour spout defining provisions, providing the production of pour spout sidewalls from the interior pour spout defining panel.

FIG. 8 is a fragmentary sectional view taken along the line 8–8 of FIG. 7 with the carton in tilted or use position and shows the relation of the pour spout defining provisions with a quantity of enclosed pulverant fill.

FIG. 9 is a fragmentary sectional view of a further carton embodiment and illustrates an alternative interior pour spout defining panel configuration assuring complete closure of the carton following use. FIG. 10 is a fragmentary perspective view of the arrangement of FIG. 9 and illustrates the pour spout defining provisions of FIG. 9 positioned for use in the dispensing of an enclosed product.

Referring to the drawings in detail, a novel carton blank in accordance with this invention is designated generally by the numeral 15 in FIG. 1 and is defined by a pair of longitudinal edges 16, 17 and a pair of transverse edges 18, 19. The carton blank 15 is preferably paperboard or similar material bendable to allow folding into a usable carton and of sufficient structural rigidity to maintain the shape of the formed carton. A

A plurality of transverse fold lines 21—24 and longitudinal fold lines 25 and 26 cooperate to define a plurality of wall portions or panels 27—31 and a plurality of conventional closure flaps 33—40. The closure flaps 34 and 38 are provided with a plurality of score lines 42 providing a gripping surface for an adhesive A applied thereto and employed in the joining of the closure flaps 34, 36 and 38, 40 in conventional fashion. Similarly, a terminal panel 31 is provided with a plurality of score lines 43 providing a gripping surface for adhesive A applied thereto and employed in the joining of the terminal panel 31 with a remaining terminal panel 27.

A first pour spout forming or defining panel generally referenced by the numeral 44 is defined in the terminal panel 27 by an inverted U-shaped cut line 45 and a fold line 46 bridging the arms of the cut line 45. A fold line 47 divides the first pour spout defining panel 44 into a starting end portion 48 adjacent the fold line 46 and a gripping end portion 50 adjacent the bight of the inverted U-shaped cut line 45.

The remaining terminal panel 31 includes a second pour spout forming or defining panel generally referenced by the numeral 51, positioned for alignment with the pour spout forming panel 44 upon joinder of the two terminal panels 27 and 31 during carton formation. The second pour spout forming panel 51 is defined by a generally inverted U-shaped cut line 52 and includes a central portion 53 joined at each side by pour spout sidewall forming portions 54 and 55 defined, respectively, by perforated fold lines 56 and 57. The sidewall forming portions 54 and 55 terminate in extensions 58 and 59 adjacent a fold line 61 connecting the central portion 53 of the second pour spout forming panel 51 with the terminal panel 31.

The adhesive A applied to the terminal panel 31 is provided also upon the central portion 53 of the panel 51 whereas an area B of the terminal panel 31 is maintained free of adhesive, preferably by the application of a quantity of varnish V thereto. The adhesive-free area B includes the two pour spout sidewall forming portions 54 and 55 and extends upwardly from the second pour spout forming panel 51 for alignment with the gripping end portion 50 to the first-mentioned pour spout forming panel 44, maintaining the gripping portion 50 of the pour spout forming panel 44 free of adhesion with the terminal panel 31 upon overlapping of the terminal panels 27 and 31 during container formation.

The blank 15 is set up to for a carton 65 (FIG. 2—8) by securing the inner surface of the closure flap 40 upon the adhesively coated surface of the closure flap 38 and with the closure flaps 37 and 39 extending inwardly to the interior of the carton 65. A pair of closure flap end panels 66 may be provided at each end of the adhesively coated flap 38 for joinder with the exterior surfaces of the terminal panels 27 and 29.

Similarly, the interior surface of the closure flap 36 is joined with the adhesively coated surface of the closure flap 34 with the end closure flaps or tabs 33 and 35 extending into the interior of the carton 65.

The interior surface of the terminal panel 27 is joined with the adhesively coated surface area of the terminal panel 31 in

overlapping fashion to define a sidewall 67 of the carton 65. As will be best understood from FIGS. 3 and 4, the second pour spout defining panel 51 provided in the terminal panel 31 has the central portion 53 thereof adhesively secured to the interior surface of the starting end portion 48 of the exterior pour spout forming panel 44 provided in the terminal panel 27. Through the provision of the adhesive-free area B, the sidewall forming panel portions 54 and 55 of the second or interior pour spout defining panel remain free of adhesion to the interior surface of the terminal panel 27 and the gripping end portion 50 of the exterior pour spout panel 54 remains free of adhesion with the interior terminal panel 31.

When dispensing of a product from the interior of the carton 65 is desired, the starting portion 48 of the exterior pour spout panel 44 is depressed inwardly as best illustrated in FIGS. 5 and 6. The nonadhesive area of the interior terminal panel 31 underlying the gripping portion 50 defines blocking means 68, preventing inward movement of the gripping portion 50 adjacent thereto and providing pivotal outward extension of the gripping portion 50 in the direction indicated by the unnumbered arrow in FIG. 6. Outward extension of the gripping portion 50 allows easy engagement thereof by the user for outward pivoting of the combined pour spout provisions along the fold lines 46 and 61 to the position best illustrated in FIG. 7.

As the combined pour spout provisions are pivoted outwardly with respect to the carton 65, a dispensing opening 70 is defined in the wall 67. Opening edge portions 71 and 72 defined by the arm portions of the cut line 45 and located adjacent the two pour spout sidewall defining portions 54 and 55 provide blocking means effecting pivotal movement of the sidewall defining portions 54 and 55 out of the plane of the central portion 53 of the interior pour spout panel 44. The spout thus assumes a channel shape facilitating flow of the enclosed fill in dispensing thereof.

FIG. 8 illustrates the disposition of the pour spout provisions with the carton 65 in tilted or use position with a quantity of pulverant fill 73 passing between the sidewall portions 54 and 55 in the direction of the unnumbered arrow shown in that FIG. It will be noted that the end portions 58 and 59 of the sidewall portions 54 and 55 extend inwardly into the carton 65, channelling the fill to the central portion 53 of the pour spout and between the upstanding sidewall portions 54 and 55 and preventing locking of sidewall portions 54 and 55 on the exterior surface of the panel 27.

In FIGS. 9 and 10 there is illustrated an alternative arrangement of the pour spout provisions described hereinabove. An alternative pour spout arrangement generally indicated by the numeral 75 includes an exterior pour spout forming panel 76 similar in details to the exterior panel 51 discussed hereinabove with respect to FIGS. 1—8. An interior pour spout defining panel 77, like the hereinabove described interior panel 51 includes the central portion 53, adhesively affixed to the interior surface of the starting portion 48 of the interior pour spout defining panel 76. Again, the central portion 53 is joined on each side by sidewall defining portions 54 and 55. The interior spout defining panel 77, however, includes a further terminal portion 78, joining the central portion 53 at a fold line 80. The terminal portion 78 of the interior panel 77 is provided by a further inverted U-shaped extension 79 of the cut line 52 defining the interior spout forming panel 77.

An area 81 of the inner terminal panel 31 adjacent the extended cut line 79 is provided in alignment with the gripping portion 50 of the exterior pour spout forming panel 77 to provide blocking means engageable with the gripping portion 50 upon inward depression of the starting portion 48 of the exterior spout forming panel 76, providing blocking of inward movement of the gripping portion 50 and outward extension thereof in the manner discussed hereinabove with respect to FIGS. 5 and 6.

The terminal portion 78 of the inner spout forming panel 77 is adhesively affixed to the gripping portion 50 of the exterior spout forming panel 76 and includes edge portions 82 defined by the extended cut line 79. The edge portions 82 are engageable in frictional contact with the edge portions 83 defined in the interior terminal panel 81 by the cut line 79 for facilitating complete closing of the spout provisions 75 after the dispensing of a portion of the enclosed fill. It should be noted that the edge portions 82 through their close proximity with the central area of the gripping portion 50 are less subject to fraying and wear by repeated operations than are the edge portions of the exterior spout forming panel 76. Thus, continued adequate reclosure of the carton 65 is assured through continued good frictional engagement of the edge portions 82 and 83 maintaining the spout provisions 77 in their initial position even following numerous employments thereof.

While the structures shown and described hereinabove represent preferred forms of the invention, it will be readily apparent to one skilled in the art that variations may be made in the structures set forth without departure from the scope and spirit of the invention embodied herein.

I claim:

1. A carton having overlapping exterior and interior joined wall defining panels, an exterior pour spout forming panel pivotally connected with said exterior wall defining panel, said exterior pour spout forming panel including inwardly depressible starting means for initiating opening of the carton and outwardly extensible gripping means for gripping in opening of the carton, and said interior wall defining panel including dispensing opening means aligned with said pour spout forming panel and blocking means adjacent said opening means for blocking inward movement of said extensible gripping means and providing outward movement of said gripping means upon depression of said starting means.

2. The carton according to claim 1 further including an interior spout forming panel pivotally connected to said interior wall defining panel at least partially affixed to said exterior spout forming panel and including means for forming spout sidewalls upon outward pivotal movement of said interior and exterior spout forming panels.

3. The carton according to claim 2 wherein said means for forming sidewalls includes first and second side portions of said interior spout forming panel pivotally connected to a central portion thereof, said exterior wall defining panel including means aligned and engageable with said first and second side portions for providing pivotal movement thereof with respect to said central portion.

4. The carton according to claim 1 further including an interior panel portion affixed to said exterior spout forming panel and defining means engageable with said interior wall defining panel for maintaining said exterior spout forming panel closely proximate said interior wall defining panel upon reclosing of said carton.

5. A carton having overlapping exterior and interior joined wall defining panels, an exterior pour spout forming panel defined in said exterior wall defining panel by a first cut line terminating at each end thereof proximate a first fold line, said exterior pour spout deforming panel including a depressible starting portion adjacent said first fold line and an outwardly extensible gripping portion spaced from said first fold line, an interior pour spout forming panel defined in said interior wall defining panel by a second cut line terminating at each end thereof adjacent a second fold line, said interior spout forming panel being in alignment with said exterior spout forming panel for outward pivotal movement therewith, at least one portion of said second cut line being removed from said first cut line toward the center of said gripping portion and defining a portion of said interior wall defining panel adjacent said gripping portion for engagement with said gripping portion to provide blocking of inward movement of said gripping portion and to provide outward extension of said gripping portion upon inward depression of said starting portion.

6. The carton according to claim 5 wherein said interior and exterior wall defining panels are adhesively joined and said portion of said interior wall defining panel adjacent said gripping portion is adhesive-free to allow movement of said gripping portion away therefrom.

7. A carton blank for use in forming a carton having a pivotal pour spout and including first and second panel portions adapted to be aligned in overlapping relation, a first pour spout forming panel pivotally connected with said first panel portion including a depressible starting portion and a gripping portion, a second pour spout forming panel pivotally connected with said second panel portion and positioned for alignement with said first pour spout forming panel, blocking means adjacent said second pour spout forming panel and positioned for alignement with at least a portion of said gripping portion for blocking inward movement of said gripping portion to effect outward extension of said gripping portion in opening of the completed carton.

8. The blank according to claim 7 wherein said second pour spout forming panel includes a central portion and spout sidewall forming means on opposite sides thereof for pivotal movement with respect to said central portion to define spout sides extending out of the plane of said central portion.

9. The blank according claim 8 wherein said second panel portion includes means positioned for alignment with said sidewall forming means for engagement therewith to effect pivoting thereof with respect to said central portion.

10. The blank according to claim 7 wherein said second pour spout forming panel includes means defined by a cut line in said second panel portion and aligned with said first pour spout forming panel for joinder thereto for frictionally engaging said second panel portion along edges formed by said cut line to maintain said first and second pour spout forming panels in closed position upon reclosing of the completed carton.

11. A carton blank for use in forming a carton having a pivotal pour spout and including first and second panel portions adapted to be aligned in overlapping relation, a first pour spout forming panel defined in said first panel portion by a first cut line terminating at each end thereof proximate a first fold line pivotally connecting said first panel portion and said first pour spout forming panel, said first pour spout forming panel including a depressible starting portion adjacent said first fold line and an outwardly extensible gripping portion spaced from said first fold line, a second pour spout forming panel defined in said second panel portion by a second cut line terminating at each end thereof adjacent a second fold line pivotally connecting said second panel portion and said second pour spout forming panel, said second pour spout forming panel being positioned for alignement with said first pour spout forming panel for outward pivotal movement therewith, at least one portion of said second panel portion adjacent said second cut line being positioned for alignement with said gripping portion providing blocking means for preventing inward movement of said gripping portion and for providing outward extension thereof upon depression of said depressible starting portion toward the interior of the completed carton.

12. The carton as defined in claim 1 wherein said blocking means is defined by an edge of said dispensing opening means disposed in general alignment with a junction between said depressible starting means and said extensible gripping means.

13. The carton as defined in claim 12 wherein said extensible gripping means is disposed above said depressible starting means and said edge is disposed in a generally horizontal position.