United States Patent

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[54] **POUR SPOUT FOR CARTONS**
4 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **229/17**
[51] **Int. Cl.** **B65d 5/74**
[50] **Field of Search** 229/17; 221/305, 302; 222/528

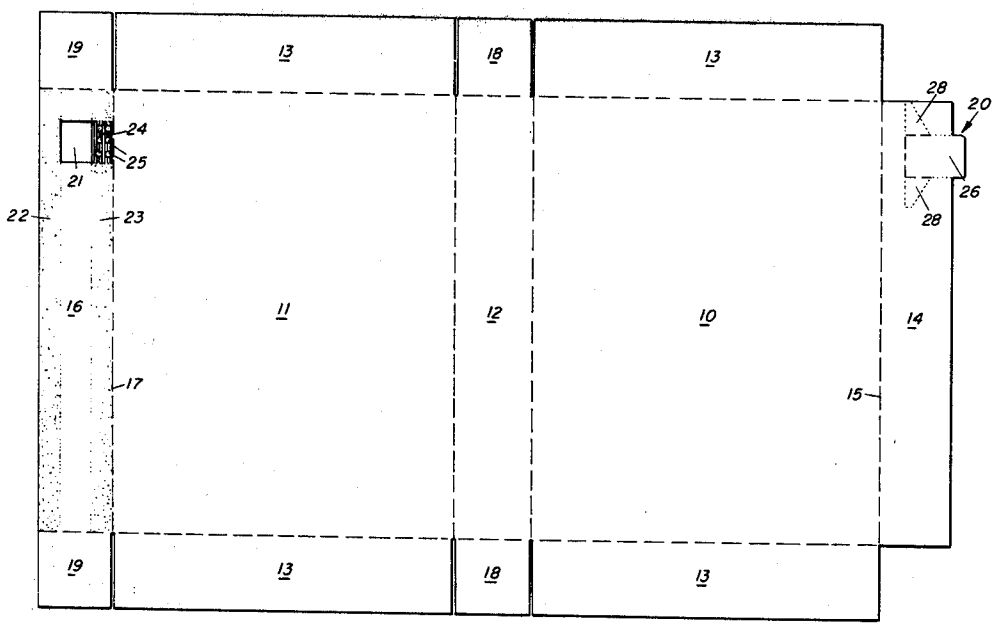
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ABSTRACT: A pour spout for a carton having sealable overlapping flaps jointly forming a top panel. The underlying flap has a pour spout opening and is provided on opposite sides of the opening with full length, longitudinally extending glue strips for sealing the overlapping flaps. The overlying flap has an erectile pour spout blank formed therein with a central pull-tab hingedly connected, at its base, to the flap immediately adjacent the corresponding boundary of the opening in the underlying flap and normally overlies the opening. Side wings, defined by severable score lines, are connected to the pull-tab at opposite edges thereof by hinge lines running perpendicular to the pull-tab hinge line, and the edge boundaries of the pull-tab adjoining the side wing hinge lines are severable from the overlying flap by means of score lines running to the outer edge of the flap. The glue line, which is engageable by the pull-tab when sealed is provided with a section treated to render the pull-tab easily detachable therefrom. In erecting the pour spout, the pull-tab is first pulled outwardly from the glue line of the underlying flap, which simultaneously detaches the boundaries of the side wings, which are then folded along their hinge lines and their outer edges pinched together and inserted in the opening. When released, the side wings tend to spring away from each other into frictional engagement with the boundaries of the opening and together with the pull-tab form a reclosable pour spout.



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SHEET 1 OF 2

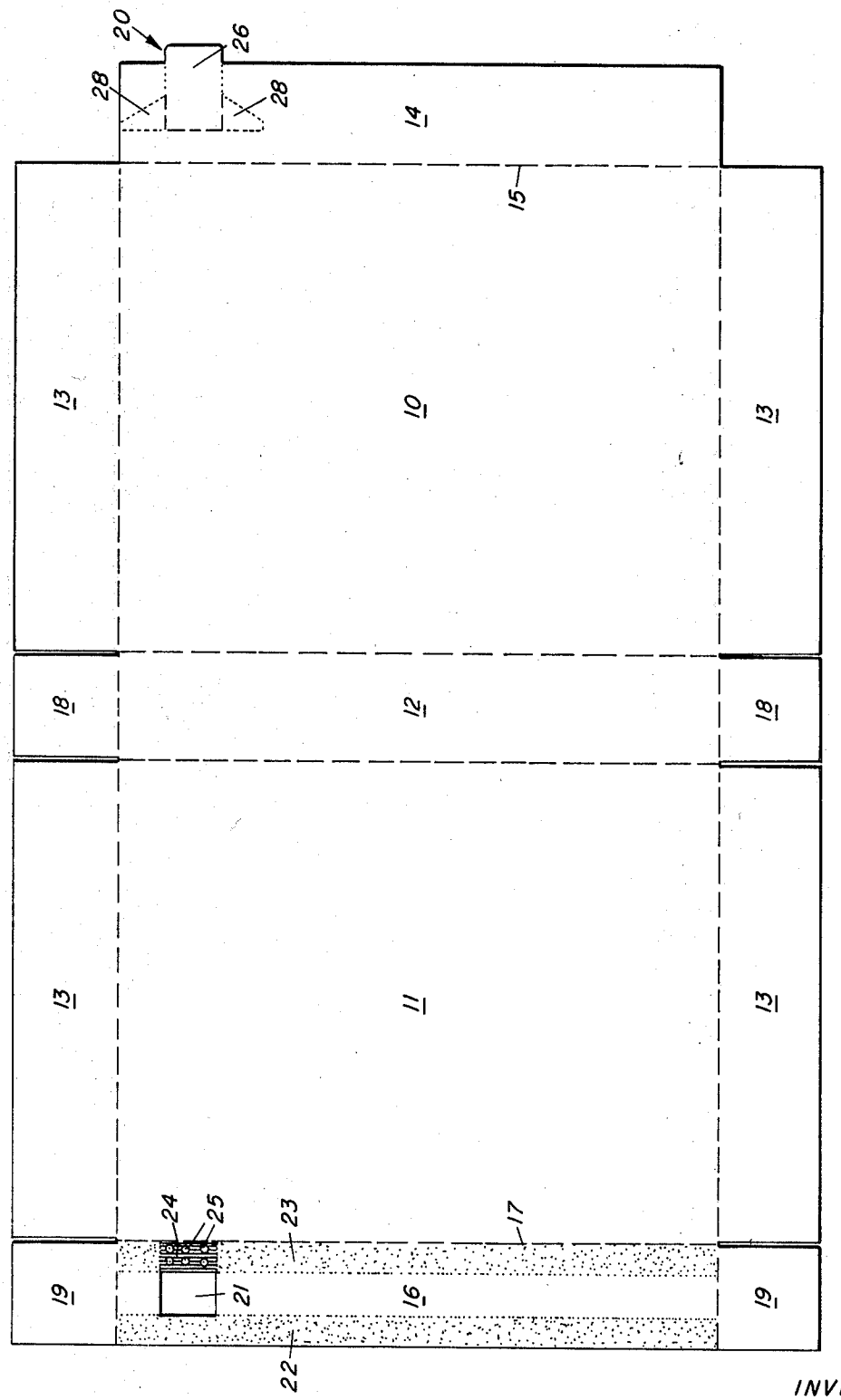


FIG. 1

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FIG. 2

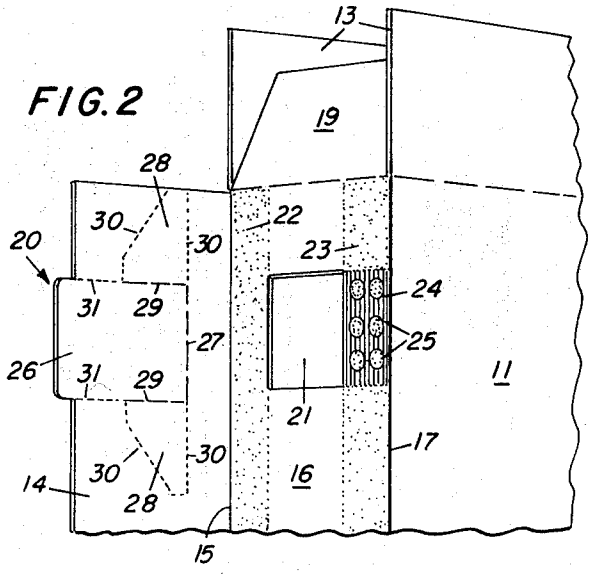


FIG. 3

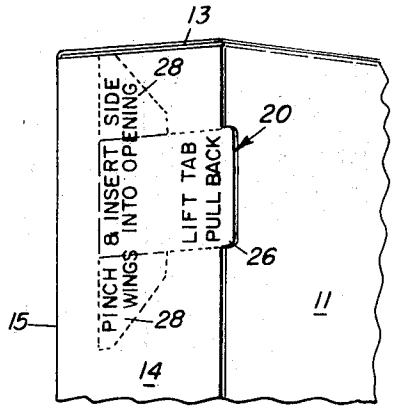


FIG. 4

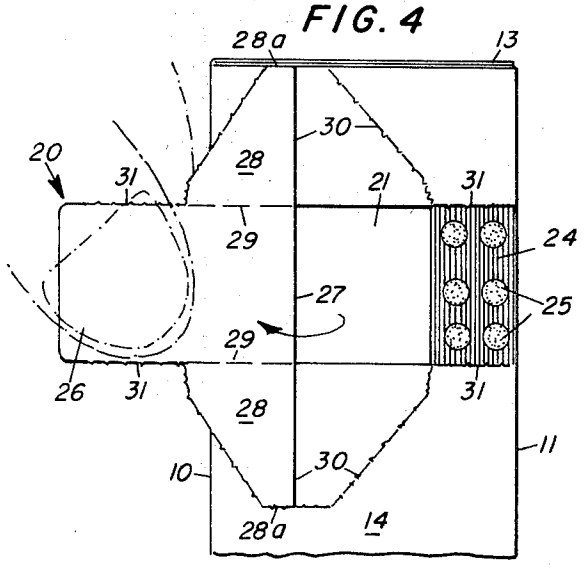
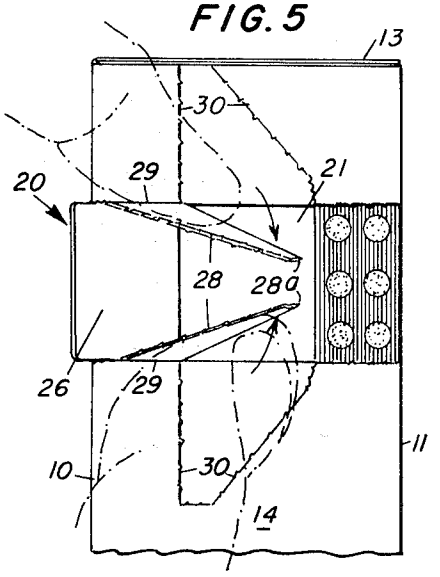


FIG. 5



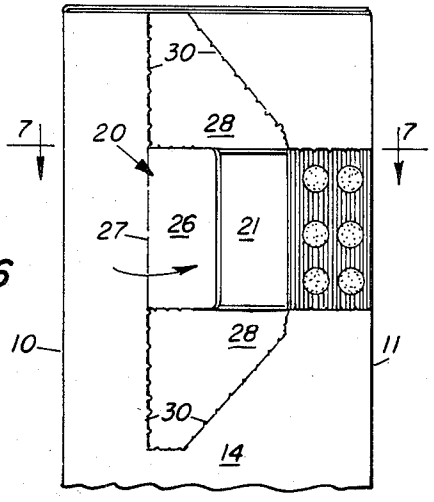


FIG. 6

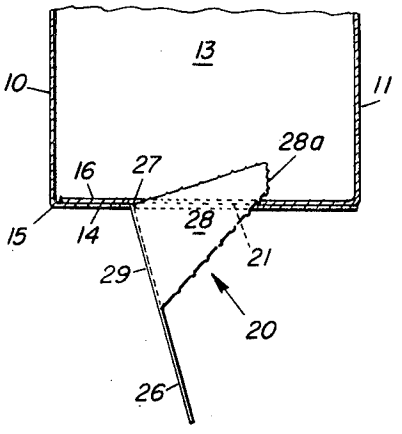


FIG. 7

POUR SPOUT FOR CARTONS

THE INVENTION

In the manufacture of cartons having pour spouts, considerable difficulty has been encountered because the usually complicated design of the pour spout and its relation to a particular panel of the carton has required manufacturing and gluing procedures not normally followed by carton manufacturers. Furthermore, these pour spouts have not provided the convenience desired by the consumer in opening and closing.

It is an object of the present invention to provide a pour spout carton which can be manufactured in blank form without unduly altering any of the normal procedures of the manufacturer.

Another object of the invention is to provide a pour spout which is formed entirely by the overlapping end flaps which jointly form the top panel of a carton, and wherein the manufacturer has the full advantage of the normal glue line for both securing the overlapping flaps in sealed relation and reinforcing the jointly formed top panel adjacent the pour spout and its opening.

Another object is to provide a reclosable pour spout which may be easily erected from the overlying top flap for manipulation to form side wings, insertable in an opening in the underlying flap.

Still another object of the invention is to provide a carton having a pour spout formed by the overlapping end flaps which jointly form the top panel, wherein the overlapping flaps are provided with two longitudinally extending, full length glue strips running along both edges of the panels and spaced on either side of the pour spout opening in the underlying flap.

A further object of the invention is to provide a pour spout having side wings which are insertable in the pour spout opening and frictionally engage the boundaries of the opening to control the hinged movement of the pour spout in opening and closing.

With the above and other objects in view which will appear as the description proceeds, the invention consists in the novel features herein set forth, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

THE DRAWINGS

Referring to the drawings in which numerals of like character designate similar parts throughout the several views:

FIG. 1 is a plan view of the blank forming the carton and pour spout;

FIG. 2 is a fragmentary perspective view showing the overlapping top flaps of the carton in the course of being folded;

FIG. 3 is a similar view showing the flaps in folded position.

FIG. 4 is a plan view of the overlapping top flaps with the pour spout blank in its first position of erection;

FIG. 5 is a similar view showing the side wings of the pour spout folded inwardly for insertion in the pour spout opening;

FIG. 6 is a view similar to FIG. 5, but with the side wings inserted in the pour spout opening; and

FIG. 7 is a cross-sectional view showing the relationship of the pour spout to the overlapping flaps when in opened position.

SPECIFICATION

In the drawings, referring first to FIG. 1, the carton blank comprises front and rear panels **10** and **11**, hingedly connected to bottom panel **12** and provided along opposite edges with side panels **13**. The front panel **10** carries at its top extremity a top flap **14** which is hinged thereto along hinge line **15**. The rear panel **11** similarly carries a top flap **16** hinged to its extremity along hinge line **17**. Closure flaps **18** are hinged to the bottom panel **12** at its opposite ends, and closure flaps **19** are hinged to the top flap **16** at its opposite ends, thus completing the basic panels and flaps to be folded in forming the erected carton.

The top flap **14**, attached to the front panel **10**, is provided with an erectile pour spout blank, generally indicated at **20**, to be later described, and the top flap **16**, attached to the rear panel **11**, is provided with a preformed pour spout opening **21**, said flap **16**, when the carton blank is erected, underlying the top flap **14** and jointly forming therewith a top panel for the carton.

As best seen in FIG. **2**, which shows the carton blank in the course of being folded or erected, the underlying top flap **16** is provided along both of its longitudinal edges with glue lines **22** and **23** which extend the full length of the flap and are laterally spaced from one another on opposite sides and free of the pour spout opening **21**. It will also be noted in FIGS. **1** and **2** that the spacing of the glue lines is such as to be free of side wings **28** when the foldable flaps **14** and **16** are in overlapping relation, as in FIG. **3**. The glue line **23** is provided, immediately adjacent its joint boundary with the opening **21**, with an easy releasing adhesive section **24**, which, as will be described later, is employed for initially securing the pouring spout pull-tab in place. One form of easily releasable means is shown in the drawings, where the portion **24**, before the glue line is applied, is printed with ink, leaving a pattern of uninked open dots **25** so that when the glue line is applied in the normal manner, the adhesive, which will not adhere to the inked printed portion, adheres only to the blank dots **25**. Thus Thus, as will later appear, when the pull-tab of flap **14** is secured to the glue line, the inked portion provides an easily releasable section.

Still referring to FIG. **2**, the pour spout blank **20**, which is formed in the top flap **14**, comprises a central pull-tab **26** which is hingedly connected along hinge line **27** to the flap **14** and preferably projects in the opposite direction a predetermined distance beyond the edge of the flap to facilitate gripping between the fingers in erecting. On opposite edges of the pull-tab **26**, substantially triangular side wings **28** are connected to the pull-tab on hinge lines **29**, and their remaining boundaries are defined by score lines **30**. The depth of the side wings is substantially less than the length of the pull-tab **26**, and the edges of the pull-tab beyond the hinge lines **29** are scored as at **31**. Thus, the outer portion of the pull-tab and the unhinged edges of the side wings are severable from flap **14** upon the pulling of the pull-tab.

From the positions of the panels and flaps shown in FIG. **2**, the carton is folded and sealed as shown in FIG. **3**, where it will be seen that the pull-tab **26** of the pour spout blank **20** overlies the opening **21** in flap **16**, and flap **14** is secured by glue lines **22** and **23**, the easily releasable portion **24** of the glue line **23** underlying the severable portion of pull-tab **26**. Here, it will be seen that the extremity of the pull-tab **26** projects beyond the composite top panel formed by the overlapping flaps **14** and **16**.

In erecting the pour spout, the projecting portion of the pull-tab **26** is grasped between the fingers and pulled outwardly, severing the pull-tab along score lines **31** and the side wings along the angular score lines **30**. The pull-tab folds along hinge line **27**, and after it is completely folded outwardly, the glue-free side wings are manually severed along their base score lines **30** so that they may be hinged outwardly on their respective hinge lines **29**.

As seen in FIG. **5**, the partially severed and outwardly hinged side wings **28** are pinched together at an angle so that their end extremities **28***a* may be inserted in the pour spout opening **21**, after which they are released. The hinge lines **29** are such as to cause said side wings to have a normal tendency to straighten out and lie in their original plane. Thus, upon the release of the side wings, they tend to swing outwardly toward the edges of opening **21** and cause a frictional engagement with the adjacent boundaries of the pour spout opening, so as to retain the pour spout in the desired extended position until the spout is closed and retracted into the opening **21**. It will also be apparent that this normal tendency of the wings to straighten out on their hinge lines will retain the spout in closed position due to the engagement of the wings with the edges of the opening.

It is also preferable to have the length of the side wings greater than the depth of the corresponding boundaries of the opening **21**, so that when they are released after insertion in the opening, their tips **28***a* lie beneath the adjacent boundary of the opening and prevent the complete removal of the side wings from the opening unless they are again pinched together at an angle.

While this pour spout carton is primarily designed for the rice industry, it will be apparent that it is readily adaptable for use with any dry product that tends to flow freely and can be packaged in a carton that is of sufficient size to meet the minimum specifications for gluing and providing an opening large enough to dispense the product. The carton can be manufactured by normal procedures, and the use of the double glue line insures the sealing of the top flaps on both sides of the pour spout opening, thus strengthening the entire pour spout arrangement.

From the foregoing, it is believed that the invention may be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details of construction without departing from the spirit of the invention.

I claim:

1. In a carton formed of paperboard or the like having one end closed by foldable overlapping flaps, a pour spout opening preformed through the underlying flap, an erectile pour spout blank formed solely in the overlying flap adjacent said opening, said pour spout blank having a central pull-tab connected at its base to said overlying flap by a hinge line, side wings hinged to opposite edges of said pull-tab, adjacent its base hinge line, the remaining boundaries of said side wings and of that portion of said pull-tab which extends beyond the hinge lines of said side wings being severably connected to said overlying flap by score lines, adhesive means comprising two glue lines extending longitudinally along opposite edges of said underlying flap and laterally spaced on opposite sides and free of said pour spout opening for securing said flaps in overlapping relation, the width of said side wings in a direction parallel to their hinge lines being no greater than the width of said spout opening, the spacing of said glue lines being such as to be free of said side wings when the foldable flaps are in overlapping relation, and easily releasable adhesive means adjacent said opening for normally securing said pull-tab to the underlying flap over said opening, whereby said pour spout may be erected by disengaging the boundaries of said pull-tab and wings from said overlying flap along their respective score lines, folding said wings along their hinge lines, pinching the outer extremities of said wings toward each other at an angle against their normal tendency to straighten out, inserting said pinched wings in said opening, and releasing them to form the sides of said pour spout, said wings being in frictional engagement with the adjacent boundaries of said opening.

2. A carton as claimed in claim **1**, wherein said easily releasable adhesive means comprise an area in the glue line printed with an adhesive rejecting substance, said area having a series of nonprinted adhesive accepting spaces, whereby said pull-tab is secured to said underlying flap only at said spaces.

3. A carton as claimed in claim **1**, wherein said side wings, when folded for insertion in said opening, are under a normal tendency to straighten out to the plane of said overlying flap and thereby frictionally engage the boundaries of said opening.

4. A carton as claimed in claim **3**, wherein the length of said side wings is greater than the depth of said opening, whereby said wings can be inserted in said opening only when they are pinched together at an angle, and, when released, their ends engage the boundaries of said opening to prevent complete removal therefrom.