United States Patent [19]

Forbes, Jr.

[11] **3,767,107**

[45] **Oct. 23, 1973**

[54] **POUR SPOUT CARTON**

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[22] Filed: **Nov. 7, 1972**

[21] Appl. No.: **304,465**

[52] **U.S. Cl.** ..... **229/17 R,** 222/556

[51] **Int. Cl.** **B65d 5/72**

[58] **Field of Search** ..... 272/526, 527, 533, 272/556, 574, 531; 229/17 R, 7 R, 17 M; 206/56 R

[56] **References Cited**

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Primary Examiner—Robert B. Reeves
Assistant Examiner—James M. Slattery
Attorney—Larry C. Hall et al.

[57] **ABSTRACT**

The present invention relates to a carton having integral collapsible pour spout opening which can either be extended into a spout or collapsed to form a flush top closed package. The pour spout portion of the carton is formed by a series of cut and scored triangular panels in the top closure flaps thereof which triangular panels include an attached cover panel for overlying the pour spout panels and the pour spout opening when the carton is not in use, the improvement comprising the arrangement of the various pour spout panels and the cover panel to permit access to the pour spout without the necessity of providing tear-away elements or perforated areas in the carton top.

4 Claims, 8 Drawing Figures

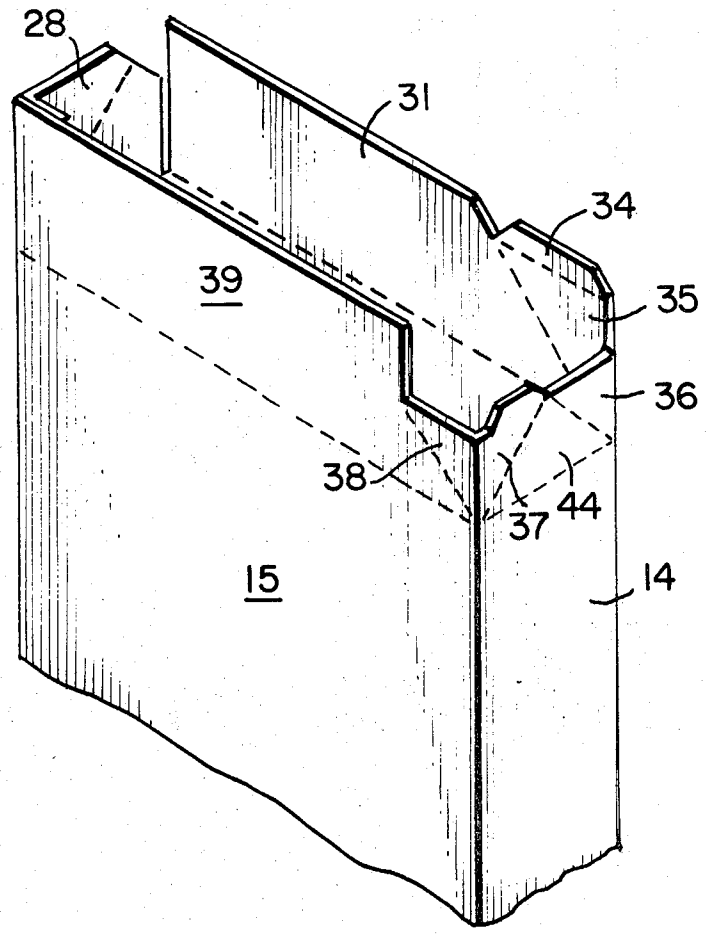


Fig 1.

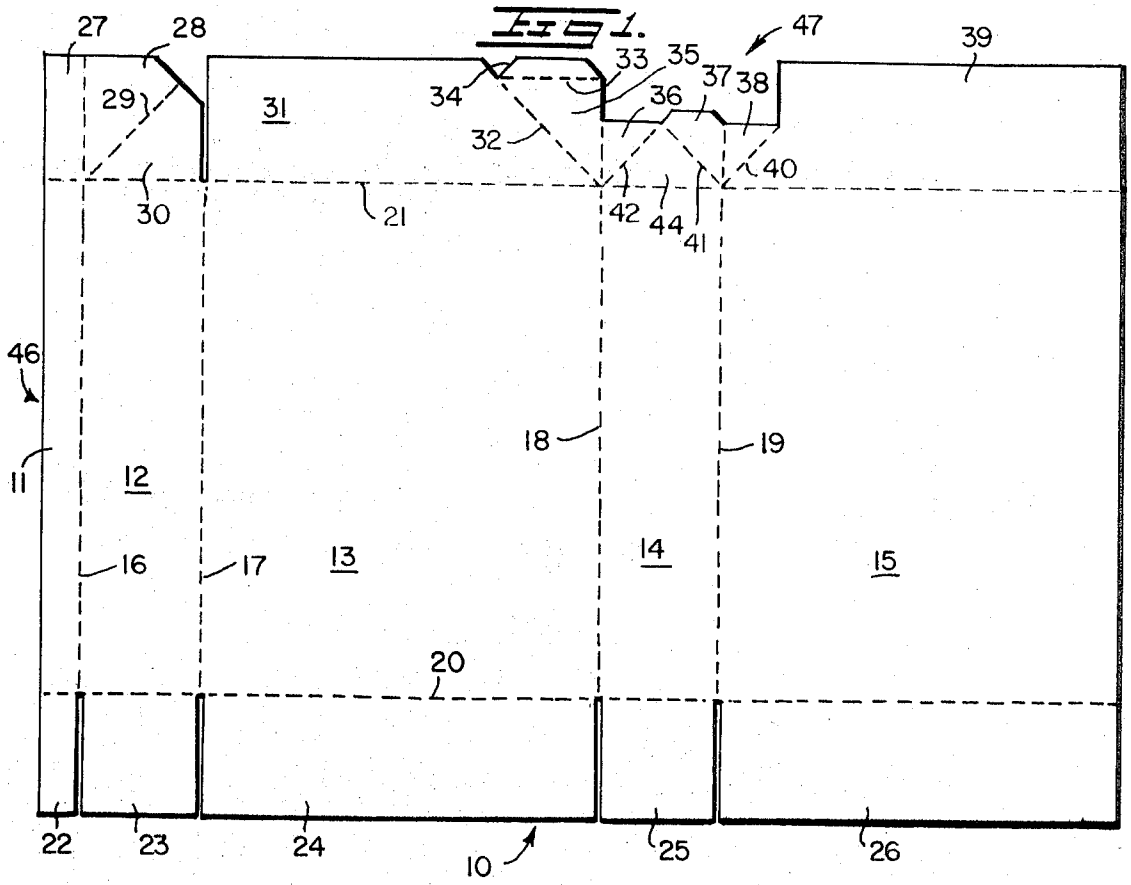


Fig 2

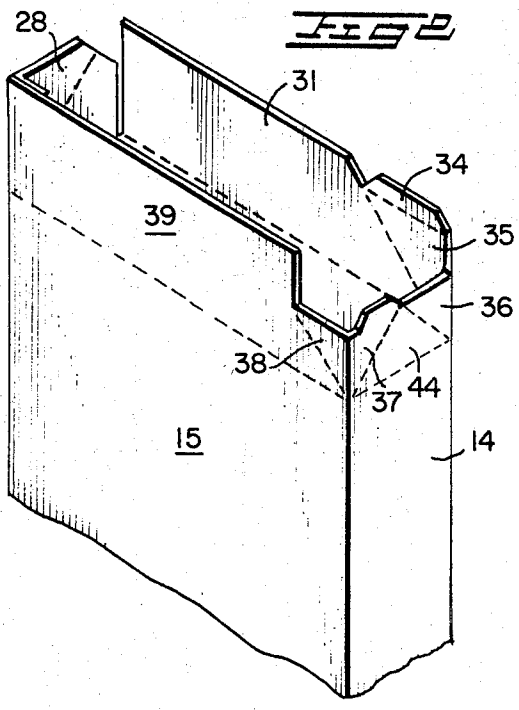


Fig 3.

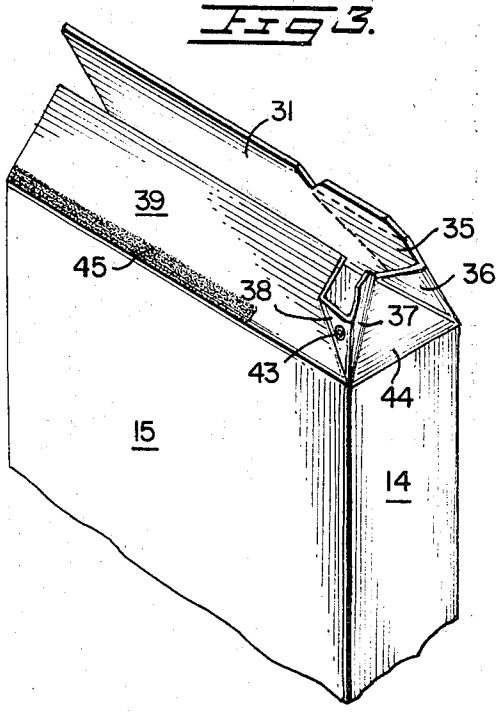


Fig 4.

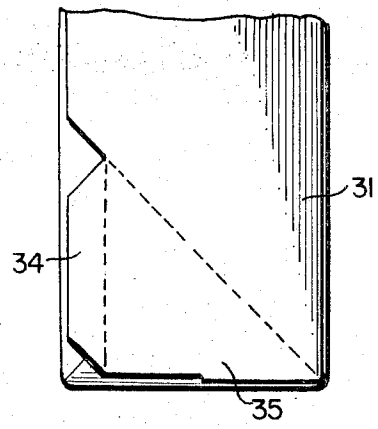


Fig 5.

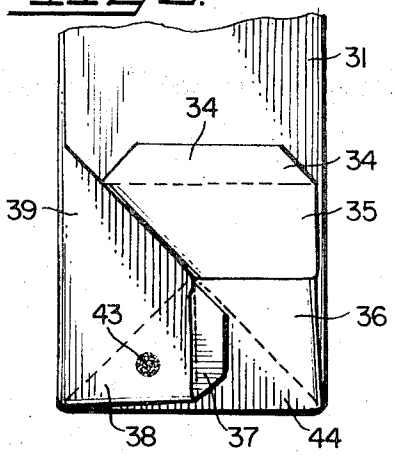


Fig 6.

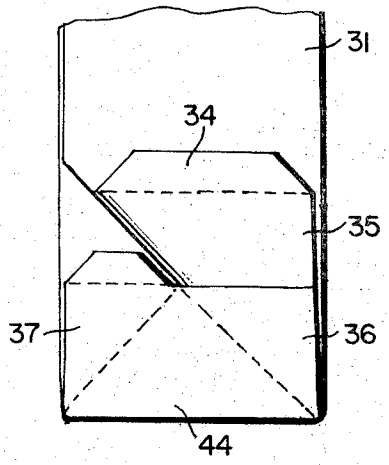


Fig 7.

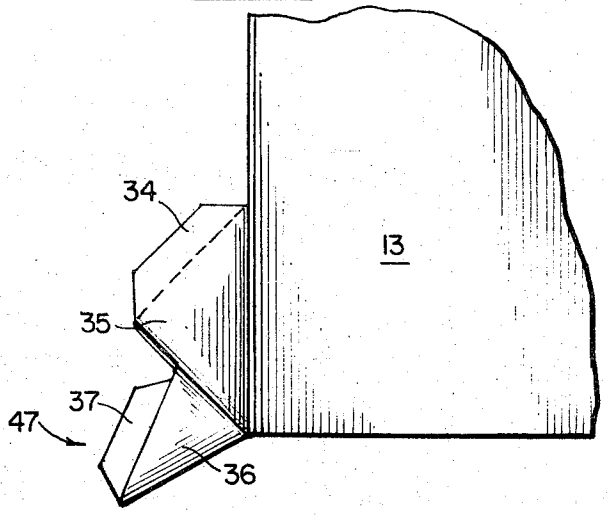
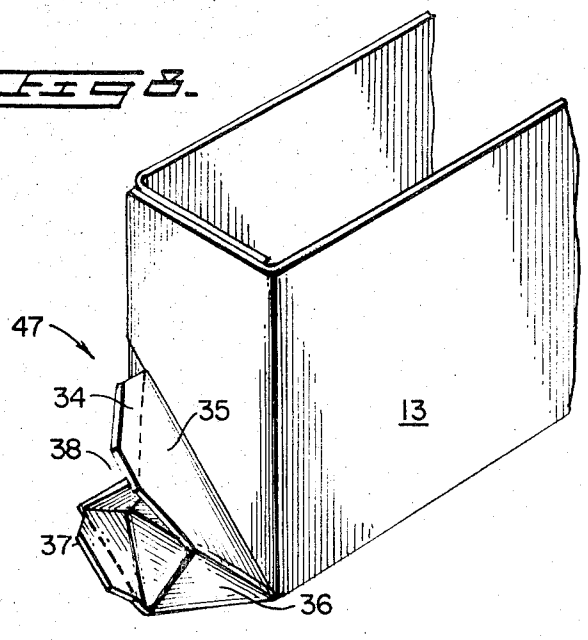


Fig 8.



POUR SPOUT CARTON

SUMMARY OF INVENTION

The present invention relates generally to a carton having a novel integral pour spout and cover therefor, which pour spout is selectively extended into a spout for dispensing the contents of the carton or collapsed to thereby form a flush top closed package.

In particular, the present invention relates to a carton having a pull-out pouring spout under the top of the carton and a means for obtaining access to the pouring spout which means is particularly characterized as being free from any requirement for perforated or tear-away panels to produce the desired results. In addition, because of the novel arrangment of the pour spout element of the carton, in conjunction with the top closure member, the carton of the present invention is provided with a unique integral cover panel for overlying the pour spout and the pour spout opening when the carton is not in use.

The carton of the present invention is especially intended for packaging granular or powdered materials such as soap powder, dried milk, sugar, salt and the like, with the primary objective being to eliminate the tempermental, unwieldly and unreliable opening schemes commonly employed on similar cartons throughout the industry.

Another object of the present invention is to provide a pour spout carton which overcomes the spillage problem and loss of contents due to sifting of the product often experienced with the prior art cartons.

Still another object of the present invention is to provide a carton wherein the individual components of the pour spout together with the novel pour spout opening cover member preserve the usual shape and configuration of the carton in the closed condition insofar as a flat, horizontal top is concerned.

A further object of the present invention is to provide a pour spout carton in which the spout includes an extension on one panel thereof which is frictionally received between other spout forming panel members in the closed condition of the pour spout, to maintain the pour spout in a closed condition, and an additional pour spout cover member as an extension on yet another panel of the pour spout, which pour spout cover member overlies and covers the pour spout when not in use.

An additional object of the present invention is to provide a pour spout carton wherein none of the various panels which make up the pour spout are adhered to one another.

Yet another object of the present invention is to provide in a pour spout carton a means for obtaining access to the pour spout mechanism without the need for tear-away elements or perforated panels are required with the prior art pour spout cartons.

DESCRIPTION OF PRIOR ART

The United States patents to C. Ray U.S. Pat. No. 2,300,703; D. A. Clark et al., U.S. Pat No. 3,003,673; and, R. L. Harms, U.S. Pat. No. 3,059,826 disclose collapsable pour spout cartons which in each case require one or more of the pour spout forming panels to be adhered to one another and ripped apart along perforated lines for either obtaining access to the pour spout or permitting actual use of the pour spout.

DESCRIPTION OF DRAWING

FIG. 1 is a plan view of the blank from which the carton of the present invention is constructed;

FIG. 2 is a partial perspective view of the top end of the carton formed from the blank of FIG. 1, with the top closure flaps in their open extended condition;

FIG. 3 is a view similar to FIG. 2 with the top closure flaps of the carton in a partially closed condition;

FIG. 4 is a plan view of a portion of the top of the carton showing the top completely closed;

FIG. 5 is a view similar to FIG. 4 with the pour spout cover panel folded back;

FIG. 6 is a view similar to FIG. 5 showing the second step in opening the pour spout;

FIG. 7 is a side view of the pour spout in the open condition; and,

FIG. 8 is a partial perspective view of the pour spout of the carton in an open condition.

DETAILED DESCRIPTION

Referring first to FIG. 1, the carton is formed from a substantially rectangular blank, preferably of paperboard, which is suitably divided by cut and score lines into a series of panels, flaps and tabs to produce the novel pour spout of the present invention. In particular, the blank shown in FIG. 1 includes a plurality of side wall panels **12, 13, 14** and **15** connected to one another along the parallel fold lines **17, 18** and **19,** which panels comprise the carton rear panel **12,** side panels **13, 15** and front panel **14.** Attached to the rear panel **12** along a fold line **16** is a glue flap **11** which, with its extensions **22** and **27,** serves to adhere the carton together in its set-up condition. Each of the sidewall panels also include more-or-less conventional bottom closure flaps **23, 24, 25** and **26** foldably attached thereto along the lower fold line **20,** while a series of top closure flaps are attached to the upper ends of the sidewall panels. The top closure flaps designated generally as elements **30, 31, 44** and **39** are each attached to the sidewall panels along the upper fold line **21** and these flaps are scored in such a manner as to provide the carton with its novel pouring spout.

In this regard, the top closoure flap **30,** attached to the rear panel **12,** is divided by a diagonal score line **29** to form a substantially right triangular segment identified as element **28.** Top closure flap **31,** attached to the side panel **13,** includes a first diagonal score line **32** at one end thereof to form a substantially right triangular segment **35,** and a second score line **33** which forms an elongated opening tab **34** along one of the legs of the right triangle **35.** Meanwhile, the top closure flap attached to the front panel **14** is divided by a pair of intersecting, diagonal score lines **41, 42** to form the central isosceles triangular panel **44** and the two identical and opposed substantially right triangles **36, 37.** The latter two triangles are formed by the intersecting diagonal score lines **41, 42** and by continuations of score lines **18** and **19** which divide the top closure flap of front wall **14** from the top closure flaps **31** and **39** respectively. In addition, the right triangular portion **37** includes and an integral part thereof a small tab element which is positioned to aid in the opening and closing of the pour spout. Finally, the top closure flap **39,** attached to the side panel **15,** includes a diagonal score line **40** at one end thereof to form yet another right triangular portion **38.** Each of the scored areas of top clo-

sure flaps **31, 44** and **39** make up a part of the novel pour spout area **47** of the carton which is particularly characterized as being free from any requirement for perforated or tear-away panels to produce the desired results. In addition, because of the novel orientation of the different score lines in flaps **31, 44** and **39,** the carton of the present invention is provided with a unique separate cover member **35** for overlying the pour spout opening when the carton is not in use.

In order to form the carton of the present invention using a carton blank as shown in FIG. **1,** the blank is initially either straight line glued or applied with spots of adhesive on the backside of the glue flap **11** and its extensions **22, 27** as shown generally by the reference character **46.** The carton blank is then folded first along fold line **17** to expose the adhesive at **46** and secondly along fold line **19** to adhere the side panel **15** to the glue flap **11** while simultaneously adhering glue flap extensions **22** and **27** respectively to the bottom closure flap **26** and the top closure flap **39.** By providing extensions at **22** and **27** to the glue flap **11,** a leak proof seal is provided for the carton along the fold line **16** in both the bottom and top of the carton. In this condition, the carton may be shipped to the user in the flattened condition and ready to be filled and sealed.

When the carton is to be used, it is squared and set up as indicated in FIG. **2.** The carton may be first closed at the bottom and filled through the top, or the top can be closed and the carton then filled from the bottom. In either case, after filling, the remaining open end of the carton is closed. However, for the purpose of the present invention, where more-or-less conventional bottom closure flaps are used, the sequence for filling and closing would be first, the bottom is closed using readily available carton forming machinery and then the carton is filled before closing the top. For the purpose of illustrating the novel top closure and pour spout provided herein, reference to FIG. **3** clearly shows the steps to be taken.

With the upper end of the carton in the FIG. **3** position, the inner panel **44** at the front of the carton and the inner panel **30** at the rear of the carton are folded inwardly to draw the intermediate rear triangular panel **28** and the paired intermediate front triangular panels **36, 37** downwardly into a closed position. This movement, accompanied by simultaneous downward movement of top closure flap **39,** places the top closure flap **39** and the attached front triangular panel **38** in a position for the application of adhesive for sealing the top of the carton.

As will be appreciated, when the rear inner panel **30** and the rear triangular panel **28** are folded into contact with one another an effective leak proof seal is achieved at the rear upper end of the carton. Similarly, as the inner panel **44** is folded downwardly the attached intermediate front triangular panels **36, 37** tend to overlap the inner panel **44** to produce an effective leak proof seal at the front upper end of the carton.

Subsequently, with the top closure flap **39** folded downwardly as described above, adhesive is applied thereto as shown at **45** in FIG. **3** while at the same time, a spot of adhesive **43** is appled to the attached front triangular panel **38** for adhering the pour spout closure panel **35** thereto. It should be obvious that the adhesive applied at **45** is intended to more-or-less permanently adhere top closure flap **39** to the top closure flap **31.** Of course, if desired either a permanent adhesive, or one having resealable characteristics could be applied at the spot **43.** Where a resealable adhesive is used at spot **43,** the pour spout closure panel **35** can be returned to its closed position when the carton is not in use. Alternatively, and where gluing machinery of the type which printed a continuous line of adhesive was used, the same releasable effect for the extension panel **35** could be achieved by overprinting the panel **38** in the region of spot **43** with an ink or varnish that would permit release. For this latter embodiment, the adhesive at **45** could then be extended completely along flap **39** and panel **38** without affecting the releasable nature of extension **35.**

FIG. **4** shows the appearance of the top of the carton in the filled and sealed condition. In this Figure, the pour spout closure panel **35** is illustrated with the opening tab **34** attached thereto. When the carton as shown in FIG. **4** is to be used, the top is opened and the pour spout **47** exposed for use as shown in FIGS. **5–7.** Note in FIG. **5,** that when the opening tab **34** is grasped for pivoting the pour spout closure panel **35** about its fold line **33,** the adhesive applied at spot **43** whether it be of the permanent type or a resealable type, offers no substantial resistance to the movement of the panel extension **35** to expose the pour spout **47.** Thus, the adhesive at **43** breaks free as the pour spout closure panel extension **35** is pivoted up, about its fold line **33,** to expose the pour spout panels. It is believed that this particular feature represents a major advantage of the carton of the present invention since no tear-away elements or perforated panels are required in order to obtain complete access to the pour spout mechanism as has always been required with the prior art pour spout cartons.

Subsequently, moving on to FIG. **6,** the next step required for opening the pour spout element **47** is shown, wherein the paired right triangular panels **37, 38** are folded to the side to expose the inner central triangular panel **44** by grasping the integral tab attached to panel **37.** This step readies the pour spout for the final opening step illustrated in FIGS. **7** and **8.** For the final step, the integral tab of panel **37** is simply pulled outwardly to cause the pour spout panels **36, 37, 38, 44** and part of **35** to complete the formation of the pour spout in its open condition shown in FIG. **8.**

FIG. **7** illustrates from the side the open pour spout **47** in the dispensing condition. Further attention to the different views of the pour spout opening mechanism shown in FIGS. **5–8** clearly show the symmetrical nature of the opened pour spout. It should also be noted that the diagonal score lines **41** and **42** describe an angle there-between that is approximately **90** degrees, but as a practical matter is preferably slightly less than **90** degrees. By making the angle between the score lines **41, 42** slightly less than **90** degrees, the inner panel **44** is urged upwardly and into contact with the right triangular panels **36, 37** to promote a tight seal and cause the paperboard at the intersection of the score lines **41, 42** to become jammed to eliminate any opening at that point. Of course, as the pour spout opening is being closed, either initially or after subsequent use, the integral tab on the right triangular panel **37** tends to insert itself between the pour spout closure flap **35** and the right triangular panel **36.** This action provides a friction lock to the pour spout in the closed condition since there is a frictional resistance of the integral tab on panel **37** to being removed from its in-

serted position. The friction lock is easily broken simply by lifting the tab **34** of panel **35**, however, where it is not desired nor feasible to use a resealable adhesive at spot **43** the friction lock still provides a limited reclosure locking ability to the carton of the present invention.

Thus it may be seen that the present invention describes a convenient and economical reclosable pour spout dispensing carton that requires no perforated or tear-away panels for providing access to the integral pouring spout. The carton construction described and illustrated represents only a preferred embodiment of the invention and it should be clear that modifications and changes in the preferred form could be made without departing from the invention as claimed. The terms used in describing the invention have been used in their descriptive sense only, and not as terms of limitation, it being intended that all equivalents thereof be included within the scope of the appended claims.

I claim:

1. A pour spout carton having spaced front and rear panels joined on each side by a pair of side panels, a glue panel foldably attached to the rear panel and adhered to one of said side panels, a plurality of top closure flaps and bottom closure flaps fold-ably attached to the ends of said front, rear and side panels, and a pull-out pouring spout for the top of said carton, said spout including a central triangular panel which forms a part of the top closure flap attached to said front panel, a pair of intermediate traingular panels disposed one on each side of said central triangular panel along the substantially perpendicular fold lines which form said central triangular panel and connected to the adjacent top closure flaps by parallel fold lines, and a second pair of triangular panels disposed one on each side of said intermediate triangular panels along the parallel fold lines and foldably attached to the respective adjacent top closure flaps along diagonal fold lines, each of said traingular panels and the central triangular panel forming the spout portion of said carton, one of said second triangular panels including an extension thereof which completely covers the spout portion of said carton in the closed condition, and an integral carton opening tab foldably attached to said second triangular panel, the improvement comprising means for obtaining access to the carton pouring spout in the absence of any tear lines or perforated panels in the carton top closure which means consists of grasping the integral carton opening tab and folding the second triangular panel extension member back along its diagonal fold line to expose the carton pour spout portion.

2. The carton of claim **1** wherein the second triangular panel extension member is releasably adhered only to one of said first intermediate triangular panels.

3. The carton of claim **2** wherein one of the first intermediate triangular panels includes an integral extension thereof which is utilized to open the pour spout of said carton.

4. The carton of claim **3** wherein the integral extension portion of said first triangular panel is inserted between the remaining first triangular panel and one of the second triangular panels when the pour spout is closed to form a friction lock for assisting in retaining the pour spout in a closed condition.

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