

Jan. 26, 1965

L. E. BRAY

3,167,231

CONTAINER

Filed June 14, 1961

2 Sheets-Sheet 1

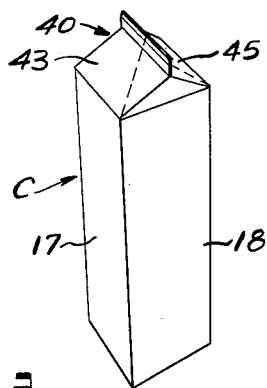
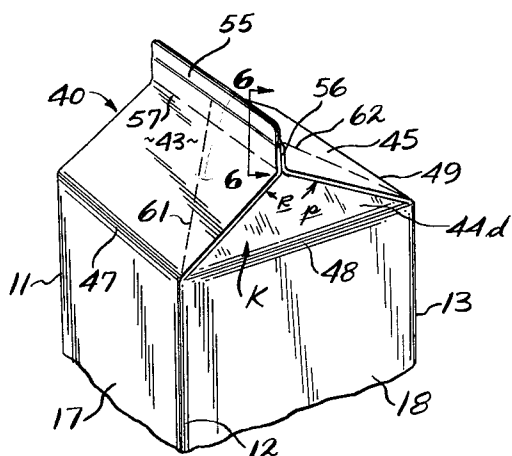
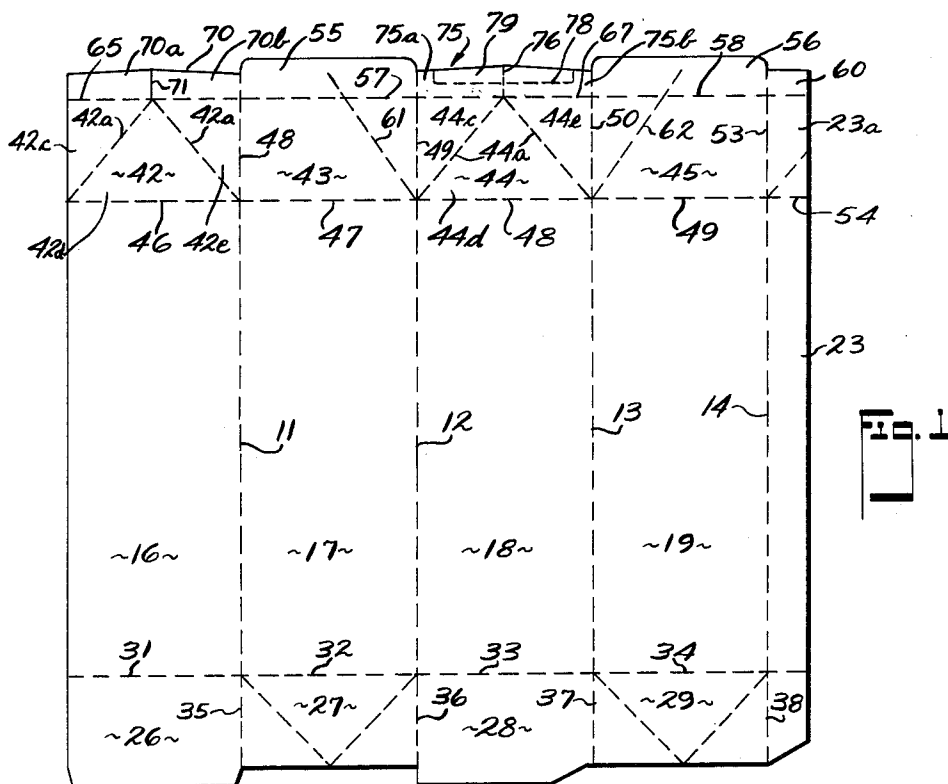


Fig. 2

INVENTOR.
Leonard E. Bray

BY

BY
Meyer, Baldwin, Doran & Young
Attorneys

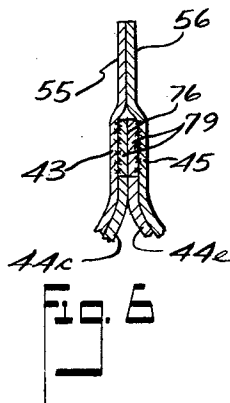
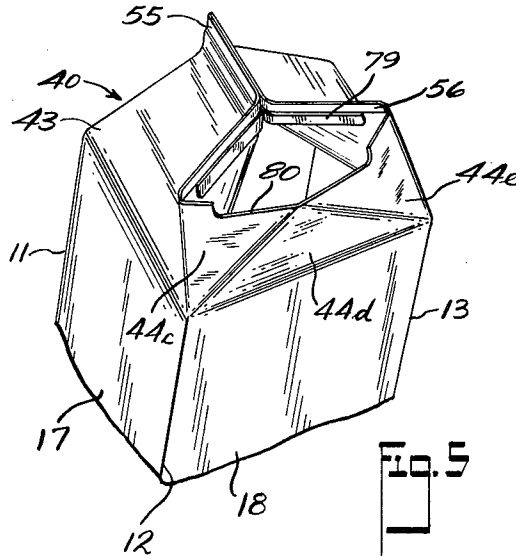
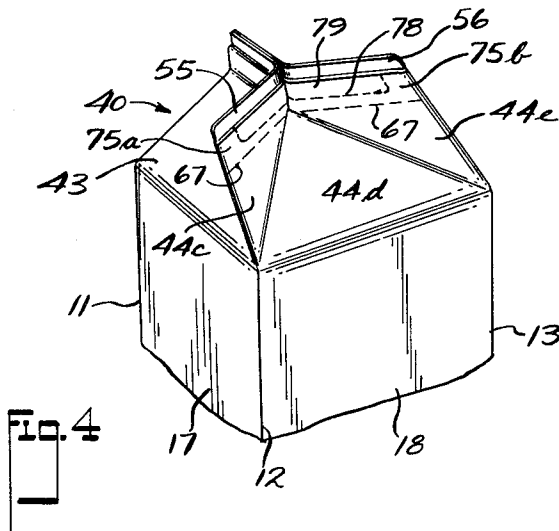
Jan. 26, 1965

L. E. BRAY
CONTAINER

3,167,231

Filed June 14, 1961

2 Sheets-Sheet 2



INVENTOR.
Leonard E. Bray
BY
Meyer, Baltimore, Doran & Young
Attorneys

1

3,167,231

CONTAINER

Leonard E. Bray, Fort Worth, Tex., assignor, by mesne assignments, to Champion Papers Inc., Hamilton, Ohio
Filed June 14, 1961, Ser. No. 117,129
11 Claims. (Cl. 229-17)

This invention relates to improvements in paperboard containers and more particularly to a new and improved paperboard container especially designed for the packaging and dispensing of liquids.

The primary object of the present invention is the provision of a new and improved paperboard container especially designed for the packaging and dispensing of liquids, and which container is formed to readily provide a pouring spout upon being opened.

Another object of the present invention is the provision of a new and improved paperboard container especially designed for the packaging and dispensing of liquids, and which container includes a gable-type closure capable upon being opened to accommodate the dispensing of liquid therefrom, to form a pouring spout and thus facilitate a directional dispensing of said liquid, and wherein said closure may be reclosed after dispensing a portion of the contents therein, being thereby effective to close said container and prevent the contents remaining in said container from being spoiled, and/or contaminated.

Still another object of the present invention is the provision of a new and improved paperboard container having a closure as above referred to, and which closure embodies a structure that is economical in its manufacture and which likewise is substantially simple in its erected assembly, being in addition readily and conveniently manually manipulated to provide a pouring spout or opening for said container.

Additional objects and advantages of the paperboard container of the present invention will be apparent to one skilled in the art to which it pertains and upon reference to the following disclosure of a preferred embodiment thereof, and which embodiment is illustrated in the accompanying drawings forming a part of this specification wherein:

FIG. 1 is a plan view of a blank for a container embodying the present invention;

FIG. 2 is a perspective view of a container erected from the blank of FIG. 1;

FIG. 3 is a fragmentary perspective view of the gable-type container closure erected from the blank of FIG. 1;

FIG. 4 is also a fragmentary perspective view of the gable-type closure but showing the same in a partially open position;

FIG. 5 is a fragmentary perspective view of the gable-type closure showing the same in an open or pouring position; and,

FIG. 6 is a sectional view taken on the plane as is indicated approximately by the line 6-6 in FIG. 3.

Referring now to the drawings throughout which like elements are designated by the same reference numeral, and with particular reference directed to FIGS. 1 and 2 thereof, the instant embodiment of container C is seen to be erected from a blank 10, constructed of a suitable paperboard material, generally rectangular in configuration and which has a plurality of score lines 11-14 formed thereon in parallel spaced relation to thereby define a series of four rectangular body panels identified respectively by the reference numerals 16 to 19 inclusive.

The blank 10 is intended to be folded along each of said score lines to thereby define a tubular body, the width of each body panel in the instant embodiment being preferably substantially the same dimension to thereby form a rectangular body of square cross sectional configuration.

As is best seen in FIG. 1, the aforementioned score

2

line 14 is located inwardly of and adjacent to the right edge of the blank 10 to thereby define a narrow flap 23 which, as will be understood, is intended to be projected into the container body as it is erected so as to lie over the inside surface of the body panel 16 adjacent its free longitudinal edge, said flap being fastened to said surface in a conventional manner to thereby retain the tubular container body in said erected position.

End flaps 26, 27, 28 and 29 comprising the bottom closure of the container C are likewise seen to be integrally formed respectively with the bottom edge of wall panels 16 to 19 inclusive, being hingeably associated with the same by means of transverse score lines 31 to 34. The bottom closure is preferably unitary in its construction in the instant container embodiment and therefore additional score lines 35 to 38, each being respectively a substantial longitudinal continuation of score lines 11-14, may be provided on said closure to facilitate the aforesaid end flaps thereof to be folded and disposed over said bottom end of the container in a substantially flat condition.

As will be understood, the end flaps are folded along said score lines and over the bottom end of the rectangular container body, being sealed each to the other in said folded condition to thereby effectively seal said bottom end and provide a container capable of retaining liquid therein.

As is well known, in modern day practice, the erection and filling of the container C is accomplished by automatic machinery to thereby enable mass quantities of said containers to be processed.

As will also be recognized, at least the inner surface of the container, and preferably both the inner and outer surfaces thereof are coated with a suitable impervious material, in a manner as will be further characterized herein, such as for example a compatible plastic material.

Subsequent to the filling of the container C it is then sealed to thereby protect the contents until the same is to be used.

For this purpose, the container C is provided with a top closure identified in its entirety by the reference numeral 40, and which, in its present form, as is to be seen in FIG. 3, partakes of a gable-like configuration in its fully erected, sealed condition.

As is best seen in FIG. 1, to form the instant top closure 40, the blank 10 is provided with panels 42 to 45 integrally formed respectively with the ends of the body panels 16 to 19 opposite the bottom closure, each of said closure panels being hingeably associated with its respective body panel by a transverse score line 46-49.

The top closure 40 is likewise unitary in its assembly such that its panels 42 and 43 are preferably hingeably associated along score line 48, a longitudinal extension of score line 11; closure panels 43 and 44 similarly integrally associated, along score line 49; and panels 44 and 45 by score line 50.

The aforementioned narrow sealing flap 23 is likewise preferably provided with an extension flap portion 23a located alongside the closure panel 45 being hingeably associated with the latter by score line 53, a continuation of score line 14. A transverse score line 54 connecting at one end with score line 49 and to thus define the upper end of sealing flap 23 hingeably associates the latter with the extension flap portion 23a.

Each of the closure panels 43 and 45 is provided with a sealing flap on the free end thereof opposite its connected body panel 17, 19, respectively, said flaps being identified at 55 and 56, and which are preferably rectangular in configuration, extending completely across said panels, each being hingeably associated with its respective closure panel at score line 57, 58. Score line 57 is seen to extend across its panel 43 in parallel-spaced

relation to score line 47 and connecting at its opposite ends with score lines 48 and 49; whereas score line 53 extends across panel 45 to similarly connect with score lines 50 and 53.

Score line 58 is also seen to continue past score line 53 so as to define a tab 60 on the upper end of the extension flap portion 23a.

Closure panel 43 is likewise seen to be formed with score line 61 which connects at its one end with the juncture of score lines 47, 48 and 49 and extends angularly across said panel so as to intersect score line 57 intermediate the ends of the latter.

Closure panel 45 is also formed with score line 62 which communicates at its one end at the juncture of score lines 48 and 49, and extends angularly across said panel 50 as to intersect score line 53 in like manner.

The remaining top closure panels 42 and 44, as best seen in FIG. 1, are each provided with a pair of score lines, each pair being identified respectively by the reference numerals 42a and 44a, and which are seen to converge from the opposite ends respectively of score lines 46, 48 and project across said panels so as to define in each of the latter three substantially triangular-shaped subpanels, the subpanels thus formed in closure panel 42 being identified at 42c, 42d and 42e respectively; the subpanels in closure panel 44 being similarly identified at 44c, 44d and 44e.

The aforesaid pair of converging score lines 42a connect at the apex thereof centrally with score line 65 formed on said closure panel 42 adjacent its free end, said score line 65 projecting thereacross in substantial parallel-spaced relation to score line 46 to thus define a surmounting rectangular subpanel 70 which is centrally divided by score line 71 into two equal panel parts 70a and 70b.

In similar fashion, the pair of converging score lines 44a formed in closure panel 44 connect at the apex thereof centrally with score line 67 formed on said panel adjacent its free end, said score line projecting across the latter parallel to score line 48 to thus define a surmounting subpanel 75 which, in turn, is centrally divided by score line 76 into panel parts 75a and 75b.

To erect the top closure 40, as thus far described and with the container body in its erected tubular form, the closure panels 42 and 44 are folded inwardly toward each other along score lines 46 and 48 and over the open end of said body, said panels also folding along their converging score lines 42a, 44a to the position therefor as is shown in FIG. 3. In this position, each of said panels 42 and 44 define a three-sided cavity on each end of the closure 40, one of said end cavities being identified in FIG. 3 by the reference character K.

With the panels 42 and 44 thus positioned, the remaining closure panels 43 and 45 are swung about score lines 47 and 49 over the latter to form the sloping sides of the gable-type closure, whereafter the sealing flaps 55 and 56 may be sealed to each other in a conventional manner such as, for example, through the application of heat and pressure whereby the plastic material on the adjoining surfaces of the said flaps is plasticized sufficiently to form a seal therebetween.

The flap extension 23a and the tab 60 surmounted thereon, in the erected position for the closure 40, are designed to lie against the inner surface of the subpanel 42c and panel part 70a, respectively, being sealed in like manner to said surfaces to thereby retain said closure in its fully erected-closed-position.

The container C, being filled and sealed in the manner just described is then available for distribution to the consumer as will be understood.

To subsequently open the sealed container preparatory to dispensing the liquid therefrom, pressure is directed to be applied to the opposed corners on one end of the closure as is indicated by the directional arrows *p* in FIG. 3 sufficiently to fold the side closure panels 43 and

45 outwardly about score lines 61, 62 so as to rupture the seal along the sealing flaps 55 and 56 to a mid-point thereon or approximately to the point where the aforesaid score lines 61 and 62 intercept the score lines 57 and 58. As the said panels 43 and 45 are thus swung outwardly, the inherent resilient characteristics of the paperboard material in part causes the center subpanel 44d of closure panel 44 and the adjoining subpanels 44c and 44e to swing partially outwardly along their score lines 48, 44a respectively, which movement is intended to open said closure to its liquid dispensing position.

As is aforementioned the closure 40 of the instant container is intended to form a pouring spout upon its being opened so as to enable a directional flow of liquid therefrom.

To accomplish this, the subpanel 75 surmounting closure panel 44 is weakened adjacent its top edge as is indicated in the instant container embodiment by the perforated line 78 to thus define a strip 79 of generally rectangular configuration, and which is preferably centrally located on said subpanel, whereby the said perforated line extends across said subpanel with its central portion in substantial parallel spaced relation to the score line 67 and its opposite ends project upwardly therefrom as seen in FIG. 1, perpendicularly of said central portion, to thus connect with the top edge of said subpanel.

With this construction, and as may be best seen in FIGS. 3 and 6, when the top closure 40 is in its fully erected position, the inside surface of the rectangular strip 79, the latter being folded along the central score line 76, is in face-to-face relation with the inside adjoining surfaces of the sealing flaps 55 and 56 of the overlying side closure panels 43 and 45, respectively.

In thus erected position it is intended that as the sealing flaps are sealed to each other to thereby seal the container C as is above described, the inside surface of the strip 79 is also affixed to said adjoining flap surfaces.

As aforementioned, it is customary to coat the paperboard blank 10 on either and/or both its inside and outside surfaces with an impervious material. In the latter case, it is required that the outside surface of the strip 79, or that exterior strip surface that is folded over upon itself in fact-to-face relation with the closure 40 in its "closed-sealed" position, is left uncoated, or in the alternative is provided with a coat of non-sealing material thereon.

With this assembly, and with particular reference directed to FIGS. 4 and 5, it will be seen that as the side closure panels 43 and 45 are swung outwardly to their open position as is above described, the subpanels 44c, 44d and 44e of the underlying end panel 44 tends to move away from the same whereby the strip 79 affixed to the sealing flaps 55, 56 of said side closure panels 43 and 45 tears away from the surmounting subpanel 75 thereby forming a recess in the same and of similar configuration as is identified in FIG. 5 by the reference numeral 80.

And, as the aforesaid closure panels 43 and 45 are further moved to their fully opened position as is depicted in FIG. 5, the subpanels 44c, 44d and 44e of said end panel 44, swing outwardly to form a trough-like pouring spout with the aforementioned recess 80 thereby defining a recessed lip therefor. Hence, it will now be realized, that as the container C is tilted so as to dispense the liquid therefrom through the pouring spout, said liquid may be readily confined within the recessed lip portion thereof to thereby control its direction of flow.

It will be further realized, that with the surmounted subpanel 75 weakened as by perforating to form the strip 79, the lip thus formed upon the separation of said strip from said subpanel 75 is substantially well defined and sharp along its edge to thereby provide for maximum control in dispensing the liquid therefrom and likewise provides a substantially drip-proof pouring spout.

It will also be apparent, that when it is desired to reclose the container C, the end closure panel 44 is first swung to its "closed" position to again form the aforesaid

5

gable cavity and the adjoining ends of side panels 43 and 45 are swung inwardly toward each other whereby the separated strip 79 is disposed within the recessed lip 80 to thus effectively close said container.

Having thus described in detail a preferred embodiment of container embodying the present invention, it is realized that the said container is susceptible to various modifications, combinations and arrangements of parts without departing from the inventive concepts thereof as are defined in the claims.

What is claimed is:

1. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels, a subpanel formed on one of said end panels, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other to thereby define a gable-type closure in its sealed position, said one end panel being weakened along its subpanel, said weakened portion of said subpanel being sealed to the sealing flaps overlying the same, each of said side panels being swingable away from each other effective to separate said weakened portion from said subpanel and thereby define a pour spout in the latter having a lip part corresponding to the configuration of said separated portion.

2. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels, a subpanel formed on one of said end panels, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other to thereby define a gable-type closure in its sealed position, one of said end panels being weakened longitudinally along its subpanel, said weakened portion of said panel being sealed to the sealing flaps overlying the same, each of said side panels being scored adjacent said one end panel to define a hinge line thereon, said side panels being swingable about said hinge lines away from each other, effective to partially unfold said one end panel and to separate said weakened portion from said subpanel on said one end panel and thereby define a pouring spout in the latter having a lip part corresponding to the configuration of said separated portion.

3. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels each having score lines defining a plurality of subpanels, said subpanels on one of said end panels connecting with a surmounting subpanel, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable along said score lines so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other to thereby define a gable-type closure in its closed position, said surmounting subpanel being weakened and said weakened portion of said subpanel being sealed to the sealing flaps overlying the same, each of said side panels being swingable away from each other, effective to partially unfold said one end panel and to separate said weakened portion from said subpanel and thereby define a pour spout in the latter having a lip part

6

corresponding to the configuration of said separated portion.

4. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels each having converging score lines defining a plurality of subpanels, said subpanels on one of said end panels connecting with a surmounting subpanel, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable along said converging score lines so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other to thereby define a gable-type closure in its closed position, one of said end panels being weakened longitudinally along its surmounting subpanel, said weakened portion of said panel being sealed to the sealing flaps overlying the same, each of said side panels being scored adjacent said one end panel to define a hinge line thereon, said side panels being swingable about said hinge lines away from each other, effective to partially unfold said one end panel and to separate said weakened portion from said surmounting subpanel and thereby define a pour spout in the latter having a lip part corresponding to the configuration of said separated portion.

5. In a paperboard container as is defined in claim 4 and wherein the side closure panels are substantially rectangular in configuration.

6. In a paperboard container as is defined in claim 4 and wherein the weakened portion on said surmounting subpanel when separated from the latter is effective to define a lip part on the pour spout of substantial rectangular configuration.

7. In a paperboard container as is defined in claim 4 and wherein the hinge lines defined on said side panels extend angularly across the same from said one end panel.

8. In a paperboard container as is defined in claim 4 and wherein the weakened portion is substantially centrally located on said surmounting subpanel.

9. In a paperboard container as is defined in claim 4 and wherein as the weakened portion is separated from said surmounting subpanel it defines a recessed lip on said pour spout.

10. In a paperboard container as is defined in claim 9 and wherein said recessed lip is located centrally on said pour spout.

11. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels each having converging score lines defining a plurality of subpanels, said subpanels on one of said end panels connecting with a surmounting subpanel, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable along said converging score lines so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other in face contacting outwardly projecting relation to thereby define a gable-type closure in its closed position, one of said end panels being perforated longitudinally along its surmounting subpanel, said perforated portion of said end panel being sealed to and clamped between the lower portion of the sealing flaps, each of said side panels being scored adjacent said one end panel to define a hinge line thereon, said side panels being swingable about said hinge lines away from each other, effective to partially unfold said one end panel and to separate said perforated portion from said surmounting subpanel

and thereby define a pour spout in the latter having a lip part corresponding to the configuration of said separated portion.

2,730,288 1/56 Dixon ----- 229—17
2,750,095 6/56 Alden ----- 229—17

FOREIGN PATENTS

5 1,052,305 1/59 Germany.
1,090,067 9/60 Germany.

References Cited by the Examiner

UNITED STATES PATENTS

2,362,862 11/44 Sidebotham ----- 229—17 X
2,557,914 6/51 Miller.

FRANKLIN T. GARRETT, *Primary Examiner.*
EARLE J. DRUMMOND, *Examiner.*