

April 30, 1963

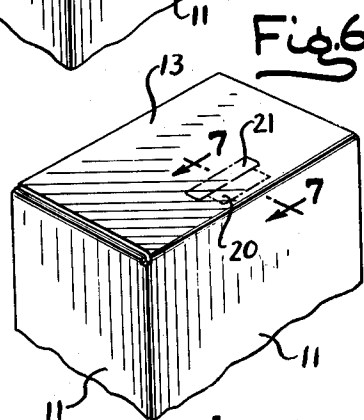
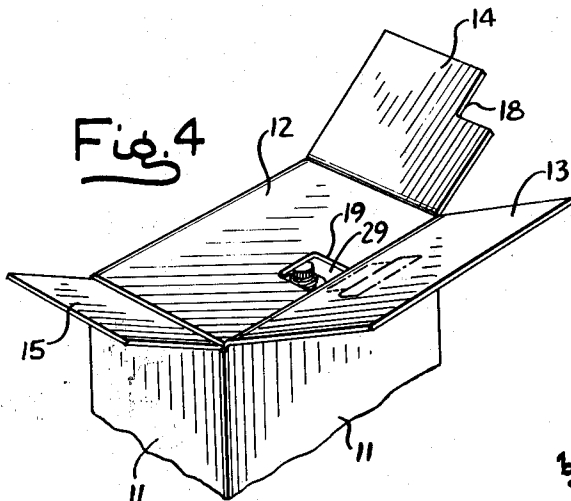
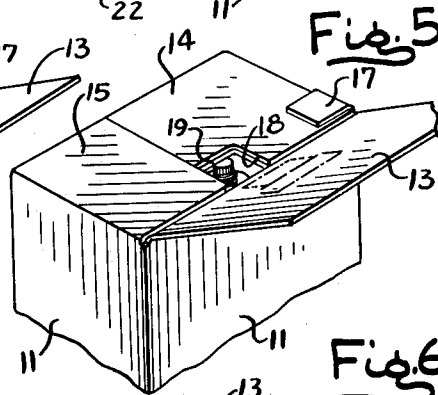
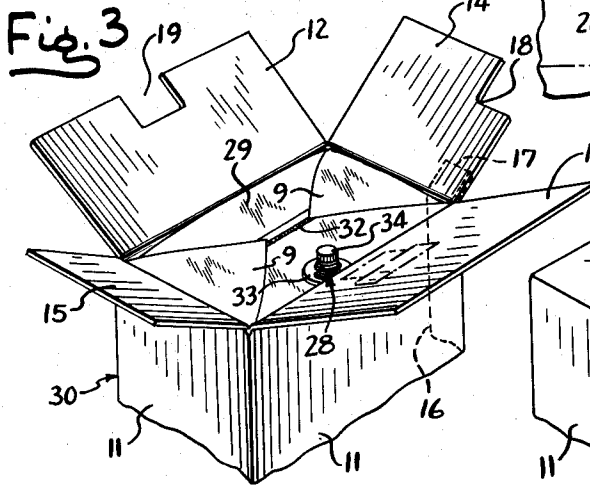
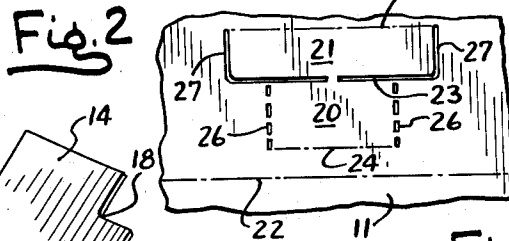
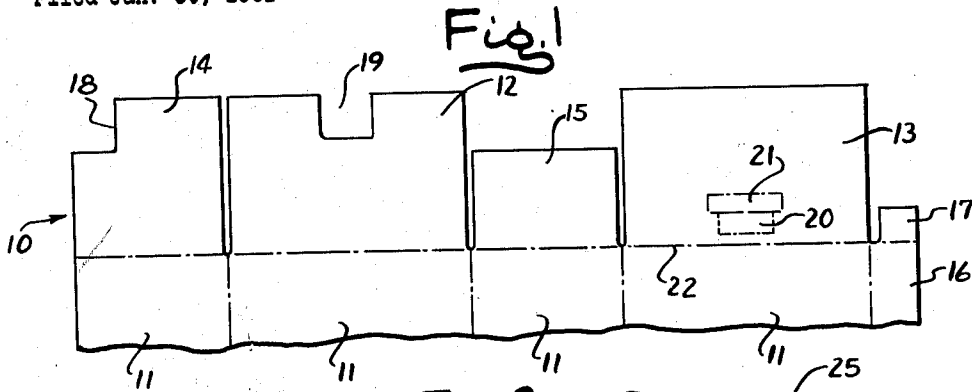
W. R. SCHOLLE

3,087,655

PAPERBOARD CONTAINER WITH FLEXIBLE LINER THEREIN

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2 Sheets-Sheet 1



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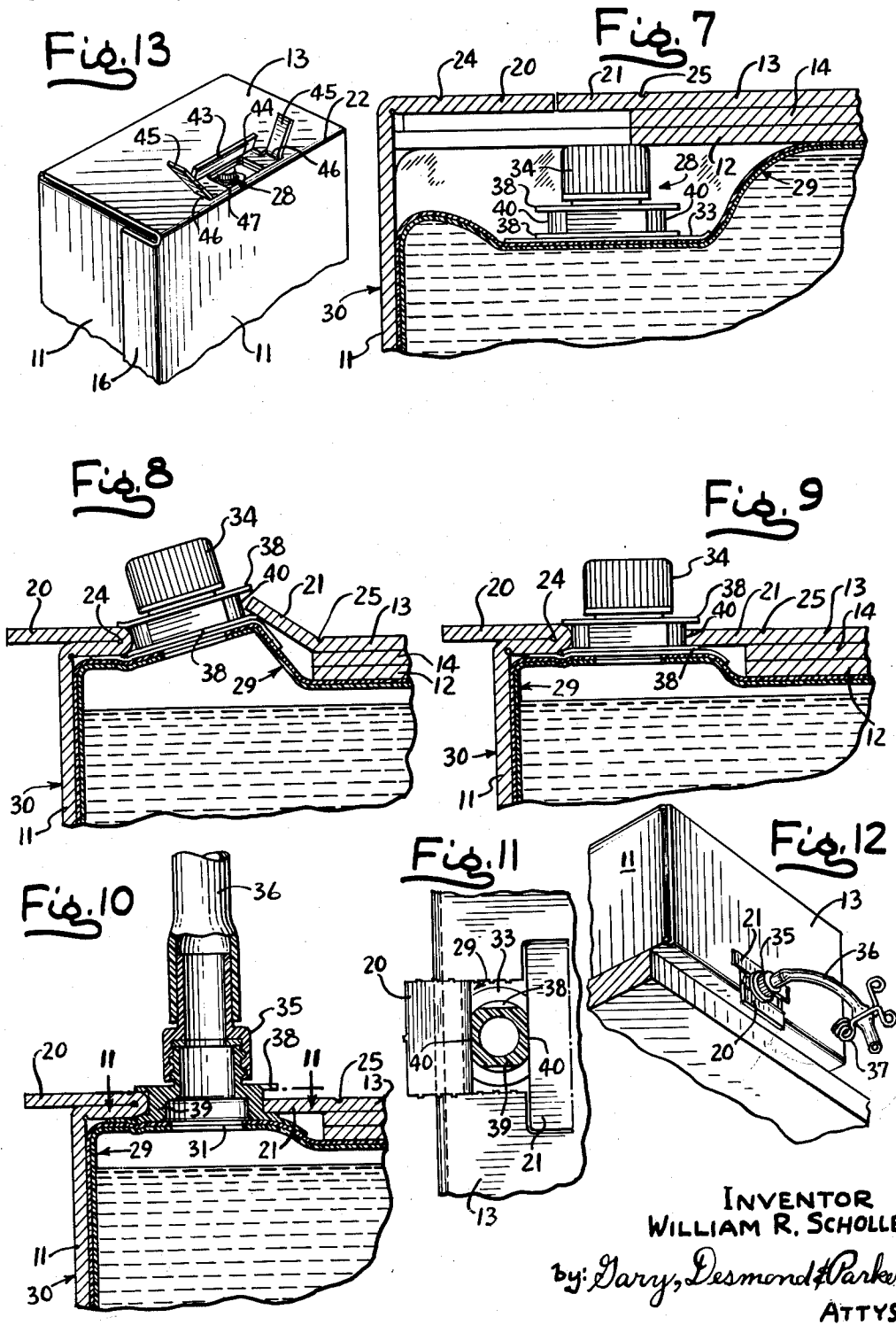
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2 Sheets-Sheet 2



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3,087,655

PAPERBOARD CONTAINER WITH FLEXIBLE LINER THEREIN

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11 Claims. (Cl. 222-183)

This invention relates to improvements in containers of the class wherein fluent materials such as chemicals, for example battery acid, are packaged within liner bags composed of flexible thermoplastic material such as polyethylene, and the substantially filled bag encased in a relatively rigid, rectangular paperboard outer container body.

It is a particular object of the present invention to provide containers of the class aforesaid with novel means for readily dispensing their aforesaid contents.

Other objects of the present invention relate to the association of means on the aforesaid outer container with means on the liner bag for aiding and dispensing of the contents thereof.

Further objects and advantages relate to details of construction, arrangement of parts, and the economies thereof, as will be apparent from a consideration of the specification and accompanying drawings, wherein:

FIG. 1 is a fragmentary plan view of one end of a paperboard container blank formed in accordance with the present invention.

FIG. 2 is a relatively enlarged fragmentary detail of the carton blank of FIG. 1.

FIG. 3 is a fragmentary perspective view of the two-component or lined container assembly of the present invention, that is, a filled flexible liner bag disposed in a rectangular outer paperboard container, showing the top closure flaps of the outer container in opened position, that is, before closing them down to complete the packaging.

FIG. 4 is a perspective view similar to that of FIG. 3 but with one of the top closure flaps closed down against the liner bag.

FIG. 5 is a view progressive to that of FIG. 3 showing an opposed pair of abutting top closure flaps sealed down.

FIG. 6 is a view progressive to that of FIG. 5 with all of the top closure flaps sealed down.

FIG. 7 is an enlarged fragmentary sectional view taken on the line 7-7 of FIG. 6.

FIG. 8 is a perspective view similar to that of FIG. 7 showing a step in dispensing, that is, with a spout associated with the flexible liner bag removed from the confines of the outer container.

FIG. 9 is an enlarged fragmentary section similar to that of FIG. 8 in a step successive thereto.

FIG. 10 is a view similar to that of FIG. 9 but with a separable relatively elongated tube employed in conjunction with the spout or nozzle on the liner bag.

FIG. 11 is a fragmentary sectional view through the assembly of FIG. 10 taken on the line 11-11 thereof.

FIG. 12 is a fragmentary perspective view of the assembly of FIG. 10 in dispensing position.

FIG. 13 is a perspective view of the upper portion of the container assembly of the present invention illustrating an alternative dispensing construction and arrangement.

Referring to FIG. 1 of the drawings, the reference numeral 10 generally indicates a carton blank composed of paperboard such as corrugated board, adapted to be set up in rectangular formation comprising four side walls 11 having closure flaps hinged to their opposed ends, the flaps hinged to the bottom not being shown. The top closure flaps comprise an opposed pair of full top flaps

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12 and 13, flap 12 being adapted to be closed down first and secured, as by adhesion, beneath the pair of opposed half top flaps 14 and 15, and the flap 13 sealed down last when the sides 11 are folded to rectangular formation. The side walls are preferably secured together by a side strip 16, contiguous with the longitudinal edge of one of the outer panels 11. As shown, strip 16 includes a flap 17 secured onto the outer surface of flap 13 for security of the assembly.

The flaps 14 and 15 when closed down in FIG. 5 come into abutting relationship over the first turned down flap 12, with the corner notch 18 in flap 14 in registry with the medial notch 19 in flap 12. The uppermost flap 13 in FIGS. 1 to 12 is formed with a pair of medially disposed tabs 20 and 21 parallel and contiguous to each other and extending parallel and adjacent to the flap hinge line 22.

The tabs 20 and 21 are defined by a common slit line 23 disposed parallel to and between the score lines 24 and 25, and the pairs of side-defining slit lines 26, 26 and 27, 27. The pair of tabs 20 and 21 are adapted to be lifted on their respective score lines 24 and 25 to provide an opening to the container common to that provided by notches 18 and 19. When these resultant tabs 20 and 21 are elevated from the face of flap 13, they permit manual withdrawal of the spout or nozzle generally indicated as 28, associated with the liner bag generally indicated as 29, from the outer container generally indicated as 30, and locking engagement of the spout 28 with the container 30 as shown in FIGS. 8 to 12, as will be hereinafter set forth in greater detail.

It will be understood that the slit lines 27, 27, 26, 26, and 23 may be continuous or discontinuous and may extend wholly or partially through the thickness of the paperboard for facilitating separation, as distinguished from the score lines 24 and 25. The latter are adapted to provide hinge lines without inducing separation of the tabs 20, 21 from the hinge lines 24 and 25 but rather keeping them attached for the purpose of providing locking abutment means.

As previously indicated, the container 30 has disposed therein a substantially but incompletely filled flexible liner bag 29 composed preferably of dual ply plastic such as polyethylene sheet material.

The liner bag 29 is conveniently of the envelope-type construction, that is, it is formed generally of a seamless single or multiple ply tubular bag stock transversely heat-sealed at opposed ends, one top of line of joint seal being indicated at 32 in FIG. 3. The liner bag 29 is filled prior to or while it is within the outer container 30 through the nozzle or spout 28 which is secured as by heat-sealing to one face of the outer ply of liner bag 29 over an opening 31 therein by means of an integral annular flange 33. This flange 33 is relatively flexible and thin as compared to the upstanding spout or nozzle 28, the latter being also suitably formed with an external thread for engagement by the threaded cap 34 or 35, the latter having a flexible tube 36 secured thereto and which is normally plugged at one end. After removal of the plug control of dispensing is by a suitable clamp 37. In the alternative, although not shown, the caps 34 or 35 and the outer periphery of the spout 28 may be formed for association with each other by pressure-fit engagement.

As an alternative to the forms of FIGS. 7 to 9, the nozzle 28 can have the flexible tube 36 associated therewith originally within container 30 normally folded against the filled portion of liner bag 29.

In the assembled package shown for example in FIG. 3, the liner bag 29 is substantially but incompletely filled so as to leave end portions, such as the envelope corner portions 9, 9, normally folded down against the top of the otherwise filled liner bag 29, with the nozzle

28 disposed adjacent to notches 18 and 19 and tabs 20 and 21.

When it is desired to dispense the contents of the package formed and sealed as shown for example in FIG. 6, the tabs 20 and 21 are separated by rupturing their slit lines and then elevating them in opposite directions on their hinge or score lines 24 and 25, respectively. Thereupon the spout 28 and associated cap 34, or cap 35 and tube 36, may be manually grasped and elevated from the confines of the outer container 30 as shown in FIG. 8.

The spout 28 is thereupon anchored on the flap 13 for dispensing purposes in a manner whereby it will not be accidentally withdrawn into the container body 30 and yet the liner bag 29 and its contents will still be retained within the outer container body. Further, the spout 28 will be secured on the top flap 13 in a manner whereby it will not rotate so as to permit ready removal of the screw cap 34 and replacement thereby with the screw cap 35 and its associated dispensing tube 36, as shown in FIG. 10, in such cases where a tube 36 is not already pre-associated with a cap.

The spout 28 is provided intermediate its length with an axially spaced pair of annular flanges 38, 38 defining a collar portion generally indicated as 39 between them. The outer surface of the collar 39 is formed with opposed pairs of parallel peripherally defining faces 40, 40 resulting from the substantially square outer cross-sectional shape of the collar portion 39. It will be understood that in the alternative the collar may have a hexagonal shape so that it would likewise present a pair of opposed parallel faces, although the larger surface area provided by a square shape is preferred, since a longer surface area may be obtained in a square-shaped collar than is obtainable in a hexagonal collar of substantially the same diameter, thus making for economy of material.

For anchoring engagement of the collar by the tab means provided in the flap 13, both tabs 20 and 21 are initially bent upwardly so as to permit withdrawal of the spout 28, and thereafter anchoring is effected by doubling back the flap 20 until it is in a return-bent position, as shown in FIG. 8, at which time its doubled fold-line area 24 is inserted against a face 40 of collar 39 between its flanges 38, 38. Thereafter, flap 21 is brought downwardly with its free edge against the opposed parallel surface 40 of collar 39 and between the flanges 38, 38, and the flap 21 pressed downwardly until it assumes a position as shown in FIG. 9 where it is substantially in the plane of panel 13, thereby anchoring the spout or nozzle 28 on the top flap 13 for dispensing position as shown in FIG. 12.

Although flap 20 might be removed on its hinge line 24, its retention is preferred by reason of greater strength. Reinforcement is provided for the flap 21 in that it is of a width greater than that of the notches 18 and 19 disposed therebelow so that the opposed ends 41, 41 of flap 21 will, in the illustrated form shown, rest on the lateral defines of notch 18 and thus in part on flap 14 and in part on flap 15.

FIG. 13 illustrates a modified form of construction with reference to the liftable tabs on the top flap 13 for interlocking engagement with the collar portion of nozzle 28. In this form, the top flap 13 is formed with slit and score lines adjacent the hinge line 22 so as to leave a pair of spaced parallel edges adapted to closely embrace the side surfaces 40, 40 of the collar section 39 between flanges 38, 38 of the nozzle or spout 28.

Thus, as shown in FIG. 13, the flap 13 is slit and scored to define a tab 43 liftable on its score line 44 and further slit and scored to define a pair of tabs 45, 45 which are elevatable in opposite directions to each other and which fall back on hinge lines 46, 46, leaving a free edge 47 adjacent to hinge line 22. In this form the residual tabs 45, 45 have no function for the present invention.

When the nozzle 28 with its component parts is for

dispensing purposes, withdrawn from the container of FIG. 13 through the opening left by elevation of the tabs 43 and 45, one flat surface 40 of the collar 39 is lodged against the edge portion 47 so that the flanges 38, 38 embrace it thereat, whereupon the tab 43 is then bent downwardly with its free longitudinal edge against face 40 between flanges 38, 38 until it comes to planar relationship with the panel 13, similar to the form shown in FIG. 9, although in this case the edge 47 is not reinforced and therefore not fully equivalent to the form shown in FIGS. 1 to 12.

Although not shown, for reinforcement purposes the container 30 may be enveloped by a reinforcing sleeve formed of similar corrugated paperboard, giving double strength to the side walls 11.

Although I have shown and described the preferred embodiment of my invention, it will be understood that changes may be made in the details thereof without departing from its scope as comprehended by the following claims.

I claim:

1. A flexible plastic sheet material bag for fluent material composed of plastic sheet material disposed within a relatively rigid rectangular outer container, a relatively rigid pouring spout secured to an apertured surface area of said bag and adapted to be extended through openings in the container top closure flaps for dispensing said fluent material, said spout including an intermediate collar portion of substantially square outer cross-section disposed between a pair of axially spaced integral flanges adapted for interlocking engagement thereby with spaced parallel anchoring tab means formed on the uppermost of said top closure flaps.

2. The combination with a rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the other opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings, one tab remote from the hinge line being elongated and parallel thereto and of a width greater than that of the opening therebelow and endwise overlying the defines of said opening, of a fluent material-containing liner bag composed of plastic sheet material disposed within said container and a relatively rigid pouring spout secured about an apertured surface area of said bag and adapted to be extended through said container opening for dispensing said fluent material, said spout including an integral flange intermediate its length defining a collar therebeneath, said collar having an opposed parallel pair of defining surface areas receivable between spaced parallel edges comprising the free forward edge portion of said elongated remote tab and the hinge line area of the second tab whereby to support said liner bag spout and to anchor it between its said flanges against rotation and retraction into the container.

3. The combination with a rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the other opposed pair being full top flaps each extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, at least one of

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said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings, one tab remote from the hinge line being elongated and parallel thereto and of a width greater than that of the opening therebelow and endwise overlying the defines of said opening, of a fluent material-containing flexible liner bag composed of plastic sheet material disposed within said container and a relatively rigid spout secured to an apertured surface area of said bag, said spout including an intermediate collar section formed with flat parallel opposed defining surface areas and a pair of axially spaced limiting flanges, said spout being initially disposed within said container adjacent said pair of tabs and elevatable from the container when said tabs are separated, and thereupon adapted to be locked on said uppermost flap by the disposition of said collar portion between the free edge portion of said elongated tab when disposed in the plane of its component flap and the score line area of the parallel tab when the latter is disposed in overlying return-bent position on said flap.

4. A rectangular container comprising side walls and a relatively narrow side panel integral with one of said side walls and secured to the outer surface of an adjacent side wall, flaps hinged to one of the ends of each of said side walls and secured together forming a top closure and a relatively short tab on said side panel secured beneath the uppermost flap, means formed on said uppermost flap forming an opening in the container top, and in register with openings formed in the lower flaps, providing abutment means therein adapted to extend into longitudinal and rotational anchoring engagement with collar means having relatively flattened opposed surface areas disposed between and inwardly of the extent of a spaced pair of flanges on a dispensing spout projected through said opening and secured to a flexible liner bag adapted to be disposed within said container.

5. A rectangular paperboard container comprising side walls and a relatively narrow side panel integral with one of said side walls and secured to the outer surface of an adjacent side wall, and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the other opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, a relatively short tab on said side panel disposed and secured to and between said uppermost full top flap and one of said half-top flaps, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings adapted to extend into longitudinal and rotational anchoring engagement with collar means having relatively flattened opposed surface areas disposed between and inwardly of the extent of a spaced pair of flanges in a dispensing spout projected through said opening and secured to a flexible line bag adapted to be disposed within said container.

6. A rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls,

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the other opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings and a flexible plastic sheet material bag for fluent material disposed within said paperboard container, including a pouring spout secured to an apertured surface area of said bag adapted to be extended through said container openings for dispensing said fluent material, said spout further including a pair of spaced integral annular flanges and an intermediate collar portion of noncircular outer formation including an opposed parallel pair of defining surface areas receivable between and adapted for interlocking engagement with some of the aforesaid tab-defining edges against relative rotation and inward and outward withdrawal.

7. A rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the other opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings, one tab remote from the hinge line being elongated and parallel thereto and of a width greater than that of the opening therebelow and endwise overlying the defines of said opening, and a flexible plastic sheet material bag for fluent material disposed within said paperboard container, including a pouring spout secured to an apertured surface area of said bag adapted to be extended through said container openings for dispensing said fluent material, said spout further including a pair of spaced integral annular flanges and an intermediate collar portion of non-circular outer formation including an opposed parallel pair of defining surface areas receivable between and adapted for interlocking engagement with some of the aforesaid tab-defining edges against relative rotation and inward and outward withdrawal.

8. A rectangular container comprising four side walls, flaps hinged to one of the ends of each of said side walls and secured together forming a top closure, spaced parallel means formed on an uppermost flap forming an opening in the container top, and in register with openings formed in the lower flaps, a spout secured to a flexible liner bag within said container, said spout adapted to extend from within said container to a position outwardly of said container through said openings, the opening in the container top providing an abutment means for engagement with relatively flattened areas defined by a hexagonal cross-section formed on said spout between and inwardly of the extent of spaced flanges integral with collar means on said spout for anchoring engagement and rotation prevention of said spout when withdrawn from within said container.

9. A flexible plastic sheet material bag for fluent material composed of plastic sheet material disposed within a relatively rigid rectangular outer container, a pouring spout secured to an apertured surface area of said

bag and adapted to be extended through an opening in the container top closure flaps defined by spaced parallel tabs for dispensing said fluent material, said spout including an intermediate collar portion having opposed relatively flattened areas disposed between and inwardly of the extent of a pair of integral annular flanges adapted for longitudinal and rotational interlocking engagement thereby with said spaced tabs.

10. A rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the second opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed lowermost and the other being disposed uppermost, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with a spaced pair of parallel score lines extending parallel and adjacent to the flap hinge line, a slit line parallel to and disposed medially of said score lines and pairs of slit lines extending normal to and between said score lines and the intermediate slit line thereby defining a pair of contiguous tabs adapted to be lifted on said score lines to provide an opening to said container and longitudinal and rotational anchoring means for the collar section of a spout having opposed relatively flattened areas disposed between and inwardly of the extent of a spaced pair of integral flanges on said spout, said spout being secured to a flexible liner bag disposed within said container.

11. The combination with a rectangular paperboard container comprising side walls and flaps hinged to one of the ends of each of said walls and secured together

forming top closure flaps, one opposed pair of the latter being half-top flaps jointly extending across the area between said side walls, the other opposed pair being full top flaps each separately extending across the area between said side walls, one of the full top flaps being disposed uppermost, at least one of said half-top flaps and the lower full top flap being formed with aligned openings to said container and disposed adjacent the hinge line of said uppermost flap, said uppermost flap being formed with slit and score lines defining a plurality of contiguous tabs disposed adjacent said flap hinge line and liftable from the plane of the flap to form an opening therein common to the aforesaid openings, of a fluent material-containing flexible liner bag composed of plastic sheet material disposed within said container, and a pouring spout including an integral flange secured to an apertured surface area of said bag and a flange spaced therefrom, said spout being adapted to be extended through said container openings for dispensing said fluent material, said spout including an intermediate collar portion having opposed relatively flattened areas disposed between and inwardly of the extent of said flanges and thereby adapted for anchoring and preventing rotation of said spout on said uppermost flap upon separation of its said tabs by edge means defined by said tabs.

References Cited in the file of this patent

UNITED STATES PATENTS

30	1,443,279	Schindler	Jan. 23, 1923
	2,002,485	Alfred	May 28, 1935
	2,454,919	Hagan	Nov. 30, 1948
	2,543,084	Williamson et al.	Feb. 27, 1951
	2,652,172	Negola	Sept. 15, 1953
35	2,954,901	Winstead	Oct. 4, 1960
	2,973,119	Parker	Feb. 28, 1961