Sept. 5, 1961 E. D. GILLAM 2,998,910

CONTAINERS

Filed May 22, 1958 3 Sheets-Sheet 1

Fig. 1.

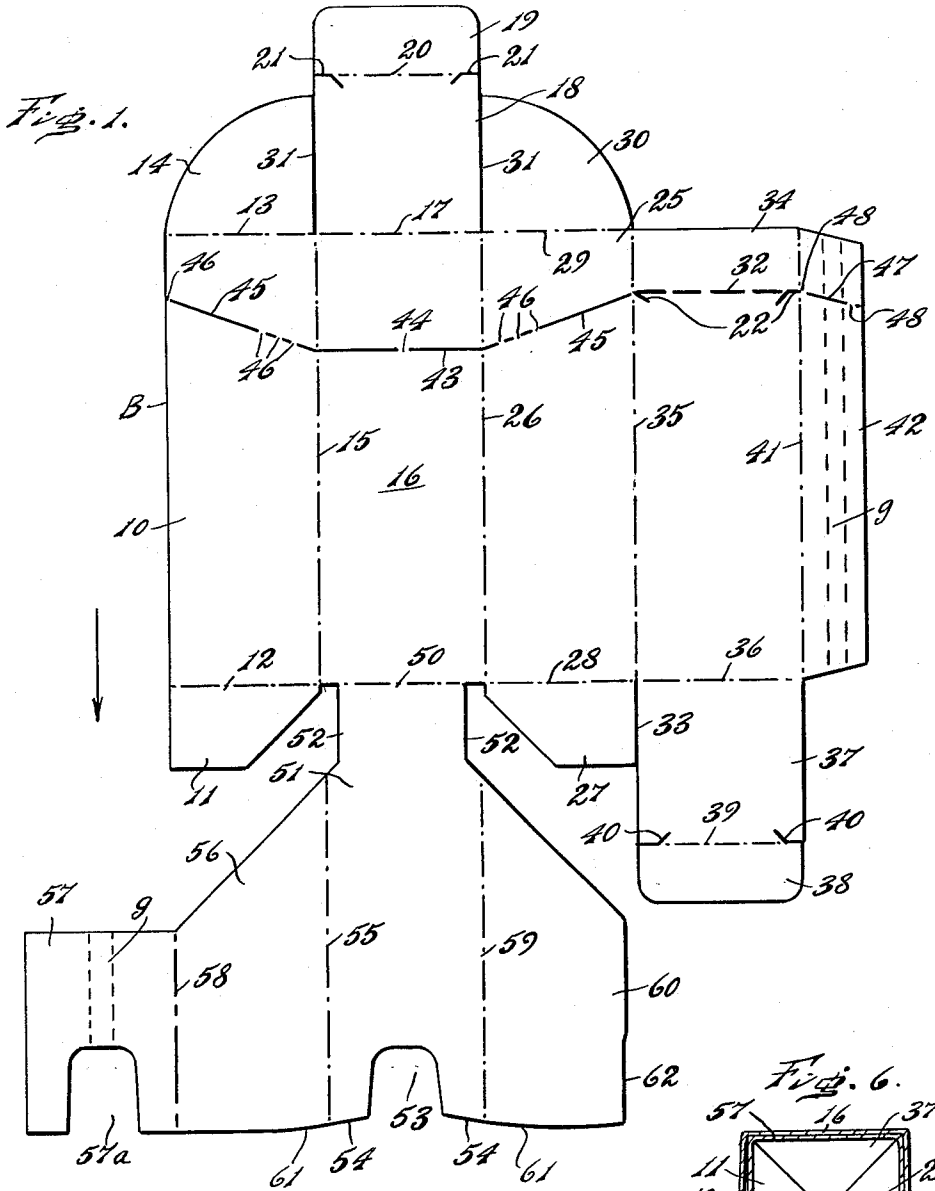
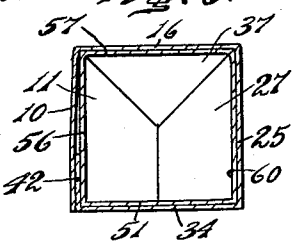


Fig. 6.



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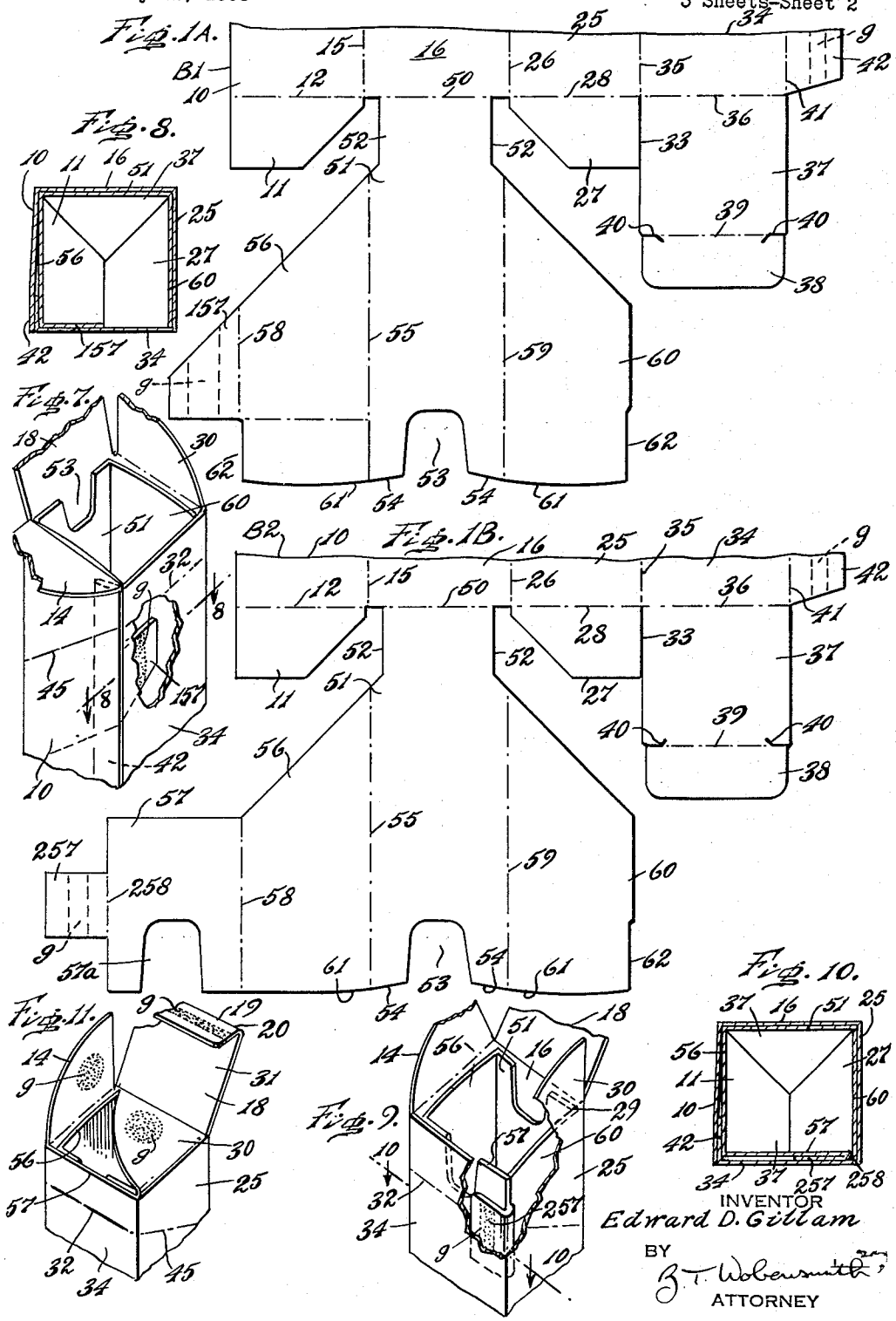
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Sept. 5, 1961 E. D. GILLAM 2,998,910

CONTAINERS

Filed May 22, 1958 3 Sheets-Sheet 2



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CONTAINERS

Filed May 22, 1958 3 Sheets-Sheet 3

Fig. 2.

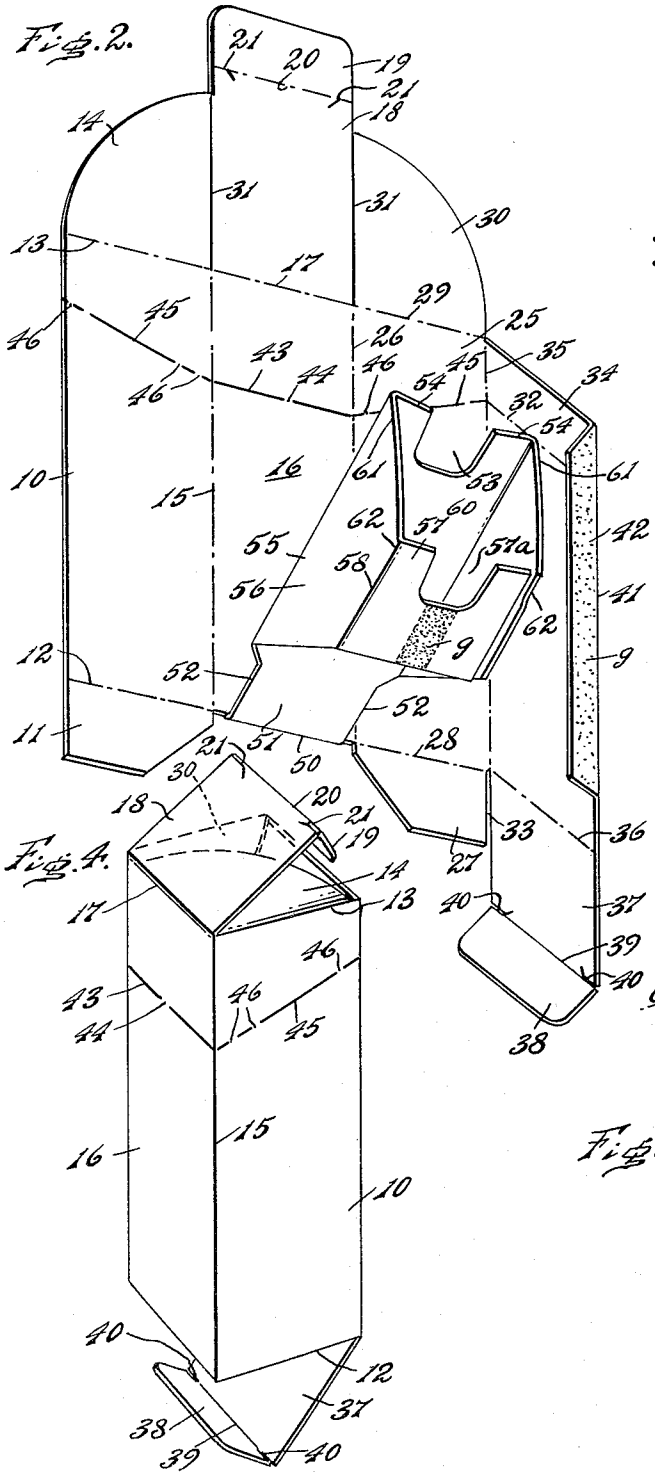


Fig. 4.

Fig. 5.

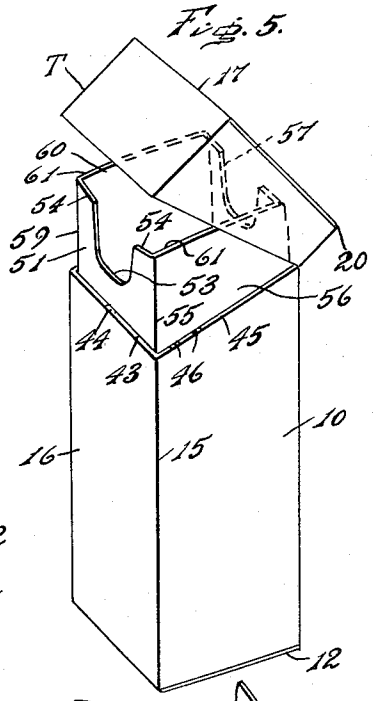
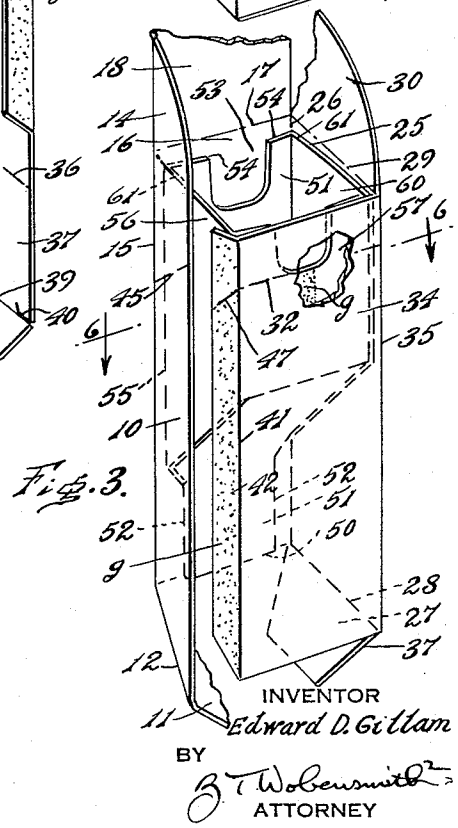


Fig. 3.



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2,998,910

CONTAINERS

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2 Claims. (Cl. 229—44)

This invention relates to containers and more particularly to containers having an auxiliary reclosable hingedly mounted lid.

It is the principal object of the present invention to provide a container, preferably made as a tuck end box, having an integral liner and an auxiliary hingedly mounted lid.

It is a further object of the present invention to provide a container which can be folded and glued on commercially available standard equipment now in use by folding box manufacturers.

It is a further object of the present invention to provide a container which can be folded and glued in collapsed condition upon machines now available, and retained in a collapsed condition for shipping before filling.

It is a further object of the present invention to provide a container made from a single integral blank which can be retained in flat condition for use and which can be readily changed from flat condition to an opened position for filling.

It is a further object of the present invention to provide a container which can be set up and filled on standard filling and closing equipment by the products manufacturers.

It is a further object of the present invention to provide a container having a liner and which is free from obstructions so that the same can be easily filled by hand and/or by filling machines.

It is a further object of the present invention to provide a container having an integral liner and in which the liner is positively aligned and positioned within the box.

It is a further object of the present invention to provide a container having a liner and made from an integral blank in which the material is economically utilized with a minimum of waste.

It is a further object of the present invention to provide a container in which, after filling and closing, the auxiliary lid may be swung open and swung closed, and when closed will be held in position by friction and retained in closed position.

It is a further object of the present invention to provide a container having an integral liner and an auxiliary hingedly mounted lid which has a high degree of practicality and usefulness with economy of manufacture.

It is a further object of the present invention to provide a container of adequate strength and rigidity and having a neat exterior and interior appearance.

It is a further object of the present invention to provide a container which can be packed in flat condition until ready for use, readily opened for filling and in which the liner can be held from interior displacement upon opening for filling.

It is a further object of the present invention to provide an improved container having a liner as an integral part thereof, and in which the liner is included in an improved manner.

It is a further object of the present invention to provide a container of the reclosable type, but which is capable of having the articles to be carried readily reinsertable therein.

It is a further object of the present invention to provide a container, preferably made as a tuck end box, which can have a sealing spot or line gluing on the tuck flap or on the dust flaps for sealing the container upon closing.

It is a further object of the present invention to provide a container, preferably made as a tuck end box and having an auxiliary hingedly mounted lid, in which a sealing spot or line gluing can be applied on the tuck flap or on the dust flaps at the time of filling and closing, and which will effect delivery to the user of the box in unopened condition indicated by the separable holding of the lid.

It is a further object of the present invention to provide a container, preferably made as a tuck end box, and provided with an auxiliary hingedly mounted lid which can have a sealing spot or line gluing on the tuck flap or on the dust flaps for sealing the container upon closing, so that the user is impelled to open the hingedly mounted lid for access to the contents.

It is a further object of the present invention to provide an improved container of paperboard which is particularly suitable for the packaging of containers of materials such as pharmaceutical materials and the like.

Other objects and advantageous features of the invention will be apparent from the description and claims.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part thereof, in which:

FIGURE 1 is a plan view of one preferred form of blank for making the container of the present invention, the blank being positioned with the finished or printed face thereof disposed downwardly;

FIG. 1A is a fragmentary plan view of a portion of a blank similar to FIG. 1 and showing the blank for making another preferred form of the invention;

FIG. 1B is a fragmentary plan view of a portion of a blank similar to FIG. 1 and showing the blank for making another preferred form of the invention;

FIG. 2 is a perspective view, the blank being shown in a partially folded condition so that the interrelationship of the parts can be seen;

FIG. 3 is a perspective view of the container, one of the side panels being swung outwardly and parts being broken away to illustrate the details of construction;

FIG. 4 is a perspective view showing the container in set up and partially closed condition prior to filling;

FIG. 5 is a perspective view of the container after filling and showing the lid in open position for access to the interior;

FIG. 6 is a horizontal sectional view taken approximately on the line 6—6 of FIG. 3;

FIG. 7 is a fragmentary perspective view of a container made from the blank shown in FIG. 1A, parts being broken away to show the details of construction;

FIG. 8 is a horizontal sectional view taken approximately on the line 8—8 of FIG. 7;

FIG. 9 is a fragmentary perspective view of a container made from the blank shown in FIG. 1B, parts being broken away to show the details of construction;

FIG. 10 is a horizontal sectional view taken approximately on the line 10—10 of FIG. 9; and

FIG. 11 is a fragmentary perspective view showing the application of glue to certain of the parts of the container.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

Like numerals refer to like parts throughout the several views.

Referring now more particularly to the drawings, in which preferred embodiments of the invention are illus-

trated, a blank for making one preferred form of the container is shown at B in FIG. 1, and is preferably constructed of a single sheet of material such as paperboard, cardboard, or similar tough, yet flexible, material, preferably finished on at least one face thereof for printing or other decoration, as desired. As shown in FIG. 1 the finished face or face which is ultimately outwardly disposed is positioned downwardly.

The blank B is provided with predetermined creases, slits, cutouts and shapes thereon to provide the desired constituent portions as hereinafter explained.

The constituent portions of the blank B preferably include an elongated rectangular side wall panel **10** having a bottom wall flap **11** connected thereto by a transverse crease line **12** extending substantially the entire width of the panel **10**. The panel **10** also has connected thereto, along a transverse crease line **13**, a top wall flap **14**. The side wall panel **10** has connected thereto, along a longitudinal crease line **15**, a front wall panel **16** preferably of elongated rectangular shape. The front wall panel **16** has connected thereto, along a transverse crease line **17** substantially aligned with the crease line **13**, a top closure wall or panel **18** having an end tuck flap **19** connected thereto along a transverse crease line **20**. The crease line **20** has side locking slits **21** formed thereon for holding the top closure panel **18** in locked condition upon insertion of the flap **19**. The front wall panel **16** has a side wall panel **25** connected thereto along a longitudinal crease or perforated line **26** parallel to the crease line **15**. The side wall panel **25** is preferably rectangular in shape and of substantially the same size as the side wall panel **10** and has a bottom wall flap **27** connected thereto along a transverse crease line **28** aligned with the crease line **12**, and extending substantially the entire width of the panel **25**.

The side wall panel **25** also has connected thereto along a transverse crease line **29** aligned with the crease lines **13** and **17**, a top wall flap **30**. Slits **31** are preferably provided between the top wall flap **14** and the top panel **18** and between the top wall flap **30** and the top panel **18** to permit of easy separation at these locations.

The side wall panel **25** has a rear wall panel **34**, preferably of rectangular shape, connected thereto along a longitudinal crease line **35**, disposed in parallel relation to the crease line **26**. The rear wall panel **34** is provided, in predetermined spaced relation to one end thereof, with a weakened or perforated line **32** to serve as a hinge. Cut lines **22** are provided at the ends of the weakened line **32** to provide a floating hinge and control of the frictional engagement of the auxiliary lid, as explained below.

The rear wall panel **34** preferably has connected thereto, along a transverse crease line **36**, substantially in alignment with the crease lines **12** and **28**, a bottom closure panel **37** which has a tuck flap **38** joined thereto along a transverse crease line **39**. The panel **37** is separated from the flap **27** by a slit **33** extending to the junction of the crease lines **28** and **36** for easy separation. The crease line **39** has side locking slits **40** formed thereon for holding the bottom panel **37** in locked condition upon insertion of the flap **38**, as hereinafter pointed out.

The rear wall panel **34** preferably has connected thereto, along a longitudinal crease or perforated line **41** parallel to the crease line **35**, a glue flap **42** to the outside face of which glue *g* or other suitable adhesive is applied during folding and gluing.

The front wall panel **16** is provided, in predetermined spaced relation to the crease line **17**, with a line slit **43** interrupted at one or more locations by a connecting piece **44** for permitting severing but retaining the portions of the panel **16** on opposite sides thereof in connected relation until the severing has been accomplished.

The side wall panels **10** and **25** are preferably provided with inclined line slits **45** in meeting relation to the slit **43** on the front wall **16** and in meeting relation to the hinge line **32** on the back wall **34**. The location of the intersection of the slits **45** with respect to crease lines **15** and **26** aids in controlling the frictional engagement with the liner, as hereinafter explained. The slits **45** have connecting portions **46** interrupting the continuity thereof for retaining the side wall sections **10** and **25** in connected relation until severed.

The glue flap **42** is preferably also provided with a slit **47** for subsequent alignment with the slit **45**, interrupted by connecting portions **48** for retaining the flap **42** in continuous relation until severed.

The front wall panel **16** preferably has connected thereto, along a transverse crease line **50** aligned with the crease lines **12** and **28**, a central or front liner panel **51** having portions **52** of reduced transverse dimension to permit the locking by the slits **40**.

The panel **51** has an access slot **53** in the end thereof for permitting visibilty of and easy access to the contents of the container and has an end margin which may have inclined portions **54**. The liner panel **51** has connected thereto, along a longitudinal crease line **55**, a side liner panel **56**. The crease line **55** is parallel to, but inset slightly with respect to the crease line **15**. The panel **56** along the outer longitudinal side thereof has a panel **57** connected thereon along a longitudinal crease line **58**. As illustrated in FIG. 1, the panel **57** is formed to provide a rear liner panel and has a slot **57***a* cut therein so that upon the application of a glue line *g* on the inside thereof during folding and gluing, undesired adherence of the panel **57** to the rear panel **34** above the weakened line **32** will not be attained in a manner which would interfere with the desired hinging at this location.

As illustrated in FIG. 1A with respect to the blank B1, if no rear liner panel is desired, the panel **157** may be employed, as a glue flap and coated with glue *g* during the folding and gluing of the container, as hereinafter explained.

As illustrated in FIG. 1B with respect to the blank B2, if desired, the panel **57** may have an auxiliary glue flap **257** connected thereto along a longitudinal crease line **258** for subsequent attachment by glue applied on the finished side thereof at *g* during folding and gluing to the interior of the rear wall panel **34** but below the weakened line **32**.

The liner panel **51** also has connected thereto, along a transverse crease line **59**, a side liner panel **60**. The crease line **59** is parallel to, but inset slightly with respect to the crease line **26**.

The end margins of the liner panels **56** and **60** may have inclined portions **61**, preferably formed as extensions of the marginal portions **54**, for controlling the frictional contact upon opening and closing of the auxiliary top or lid. The side margins of the liner panels **56** and **60** can also be stepped back as at **62** to facilitate assembly and setting up so that after filling the tuck flap **19** can be readily inserted.

The blank B is preferably folded and glued by machine, and is preferably positioned initially with the finished face, or the face which provides the exterior of the container, downwardly.

During the folding and gluing operations, the lower face of the glue flap **42** has a coating or band of glue *g*, or other suitable adhesive applied thereto by glue wheels or stencil pads (not shown) during the passage of the blanks B, B1 or B2 through the machine.

If the rear liner panel **57** is employed, as illustrated with the blank B of FIG. 1, during the same folding and gluing operations, the upper face of the panel **57** is also provided, in a similar manner, with a coating or band of glue *g*.

If the glue flap **157**, as shown on the blank B1 of FIG. 1A is employed, this is also given a coating or a band of glue *g* or other suitable adhesive on the upper face thereof during the folding and gluing.

If the panel **57** and auxiliary glue flap **257** are employed,

as shown on the blank B2 of FIG. 1B, the cutout 57*a* is not essential. The glue flap 257 during folding and gluing is given a coating or band of glue *g* on the finished side thereof.

For purposes of folding and gluing, the blank B is preferably advanced through the machine in the direction indicated by the arrow on FIG. 1, and the liner panels 51, 56 and 60 and the parts carried thereby are moved together about the hinge line provided by the crease line 50 in the opposite direction from the direction of travel of the blank B until the inside of the panel 51 is in flat contacting relation to the inside of the panel 16.

The liner side panel 56, and the liner rear panel 57 with the adhesive applied to its unfinished face, are bent together about the hinge provided about the longitudinal crease line 55 to flat condition on the panel 51 and with the unfinished face of the panel 57 extending in overlapped relation to the panel 60.

The rear wall panel 34, glue flap 42, the closure panel 37 and flap 38 are bent together along the axis provided by the longitudinal crease line 35 so that the inner face of the rear wall panel 34 is brought into adherent engagement with the adhesive coated inner face of the rear liner panel 57 for securing.

The side wall panel 10 and flaps 11 and 14 are then bent together along the hinge line provided by the crease line 15, so that the inner face of the side wall panel 10 is moved into adherent engagement with the adhesive coated outside face of the glue flap 42. The carton in flat folded and glued condition is ready for shipping to the products manufacturer.

In the form of the invention illustrated in connection with the blank B1 of FIG. 1A, the folding and gluing operation is substantially the same as that previously described, the glue flap 157 being connected in a similar manner to the inner face of the rear wall panel 34.

In the folding and gluing of the blank B2 shown in FIG. 1B, the liner panels 51, 56, 60, 57 and the glue flap 257 with adhesive applied to the finished face thereof are moved together about the hinge line provided by the crease line 50, as before. The liner side panel 56, the rear liner panel 57 and the glue flap 257 with adhesive applied to the finished face thereof are bent together about the hinge provided by the longitudinal crease line 55 to flat condition on the panels 51 and 60 and with the glue flap 257 brought into adherent engagement with the inner face of the rear wall panel 34. The remaining operations of folding and gluing are the same as those previously described.

When it is desired to fill the carton, the carton is manually or automatically opened to a position for bending the end flaps 11 and 27 along the crease lines 12 and 28 to positions at right angles to the side panel 10 and side panel 25. The end flap 38 is bent along the crease line 39 and the closure panel 37 is bent along the crease line 36. The tuck flap 38, bent along the crease line 39, is inserted past the ends of the flaps 11 and 27 and upwardly along the interior of the front liner panel 51. The slits 40 will retain the bottom wall panel 37 in locked position.

The container can thus be supported or stand upon the bottom closure panel 37 and in an upright position with the rear wall upright and facing toward the operator for manual filling, or can be supported on the front panel 16, the rear panel 34 or on one of the side panels 10 or 25, is required for machine filling.

It will be noted that when the container is set up, the liner panel 60 is in engagement with the side wall panel 25 and is simultaneously swung to position. The side liner panel 56, if the rear liner panel 57 is employed or if the glue flap 157 is employed, is simultaneously swung with the side wall 10 to the position for filling. Similarly, if the rear liner panel 57 and glue flap 257 are employed, the rear liner panel 57 is swung to position in engagement with the rear wall panel 34.

The articles to be packaged can then be inserted through the opening at the top end and upon completion of the filling operation, the flaps 14 and 30 are bent along their crease lines 13 and 29 to positions at right angles to the side wall 10 and the side wall 25.

The tuck flap 19 is bent along the crease line 20 and the closure panel 18 is bent along the crease line 17, and the tuck flap 19 is inserted past the ends of the dust flaps 14 and 30 and downwardly in engagement with the interior of the rear wall 34. The locking slits 21 will retain the top wall panel 18 in locked position. The dust flaps 14 and 30 and the tuck flap 19 may have spots of glue *g* applied thereto immediately prior to insertion of the articles to be packaged to provide a permanent closure at the top end but permitting the access through the auxiliary top T (see FIG. 11).

After the carton has been filled and shipped to the consumer, access to the interior is readily obtained by the consumer upon severing the relatively fragile connections at 44, 46 and 48, so that the auxiliary lid or top T can be swung about the floating hinge at the weakened line 32 and slits 22 to open position. It will be noted that the auxiliary lid or top T includes the closure panel 18, tuck flap 19, dust flaps 14 and 30, the portion of the side wall 10 above the slit 45, the portion of the front wall 16 above the slit 43, the portion of the side wall 25 above the slit 45 and the portion of the glue flap 42 above the slit 47, and that the top T remains in assembled condition for permitting repeated access to the interior of the container and with the top T moved to opened or closed position by the user as desired.

Upon swinging movement of the top T, a controlled frictional engagement of the upper portion of the front wall 16 and upper portions of the side walls 10 and 25 with the front liner 51 and margins 61 of the side liner panels 56 and 60 is available for preventing undesired opening of the top T and retaining the top T in closed position when so positioned by the user. The control is effected by the floating hinge at the weakened line 32 and the slits 22, and the positioning of the cut lines 45 with respect to the crease lines 13 and 29.

I claim:

1. A container made of a single piece of sheet material and having an outer section and an inner liner section, the outer section having front, rear and side walls with a glue flap extending from one of said walls and in adherent engagement with the interior of the adjoining wall, said outer section having opposite bottom wall flaps secured to the bottom margins of the side walls and a bottom closure panel hingedly secured to the rear wall, said side walls having top closure flaps hingedly secured thereto and said front wall having a top closure panel hingedly secured thereto, at least one of said closure panels having a tuck flap carried thereby, said liner section having an interior front wall panel of lesser width than said front wall, said liner section having side wall panels integral with said front wall panel, said front wall having said front wall panel hingedly secured thereto along its lower margin by a hinge centrally disposed along said lower margin and terminating inwardly with respect to the side margins of the front wall, said front wall panel being in non-adherent contact with the interior of said front wall and said side wall panels being in non-adherent contact with the interiors of said side walls, and said inner liner section having an integral portion connected by gluing to the interior of the rear wall to retain the interior positioning of said liner section.

2. A container made of a single piece of sheet material and having an outer section and an inner liner section, the outer section having front, rear and side walls with a glue flap extending from one of said walls and in adherent engagement with the interior of the adjoining wall, said outer section having opposite bottom wall flaps secured to the bottom margins of the side walls and a bottom closure panel hingedly secured to the rear wall, said side walls having top closure flaps hingedly secured

thereto and said front wall having a top closure panel hingedly secured thereto, at least one of said closure panels having a tuck flap carried thereby, said liner section having an interior front wall panel of lesser width than said front wall and side wall panels integral with said front wall panel, said front wall having the front wall panel hingedly secured thereto along its lower margin by a hinge centrally disposed along said lower margin and terminating inwardly with respect to the side margins of the front wall, said front wall panel being in non-adherent engagement with the interior of said front wall and said side wall panels being in non-adherent engagement with the interiors of said side walls, one of said side wall panels having an integral connection in adherent

engagement with the rear wall, said outer section having connected cut lines along the front and side walls in spaced relation to the top wall panel for separation of an auxiliary lid independent of said top closure wall for access to the interior of the container.

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