United States Patent [19]

Nicolay

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[54] **CONTAINER AND CLOSURE FOR THE SAME**

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[52] **U.S. Cl.** ..... **229/39 R**, 229/52 B

[51] **Int. Cl.** **B65d**

[58] **Field of Search** ..... 229/39 R, 52 B

[56] **References Cited**

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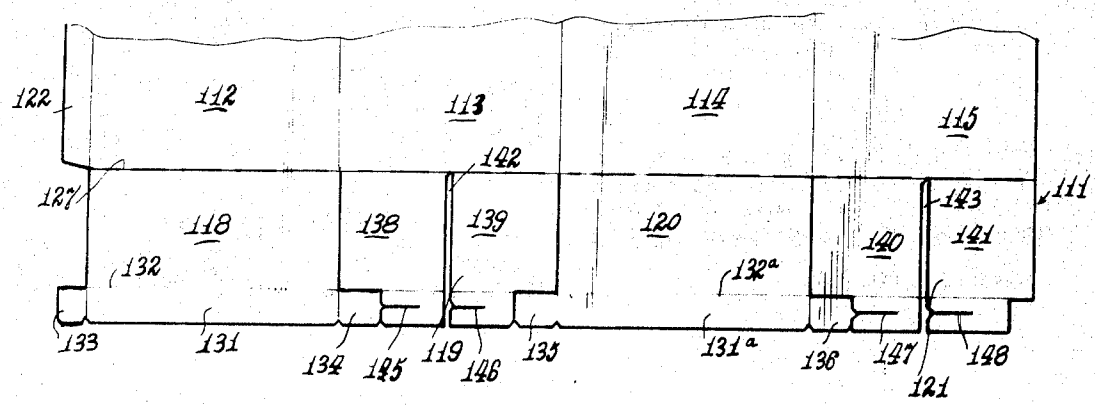
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[57] **ABSTRACT**

A container having a top, bottom and side panels and a locking closure, wherein the locking closure includes a closure panel and a tuck flap having foldable ears for engaging the underside of the closure panel.

11 Claims, 7 Drawing Figures



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SHEET 1 OF 3

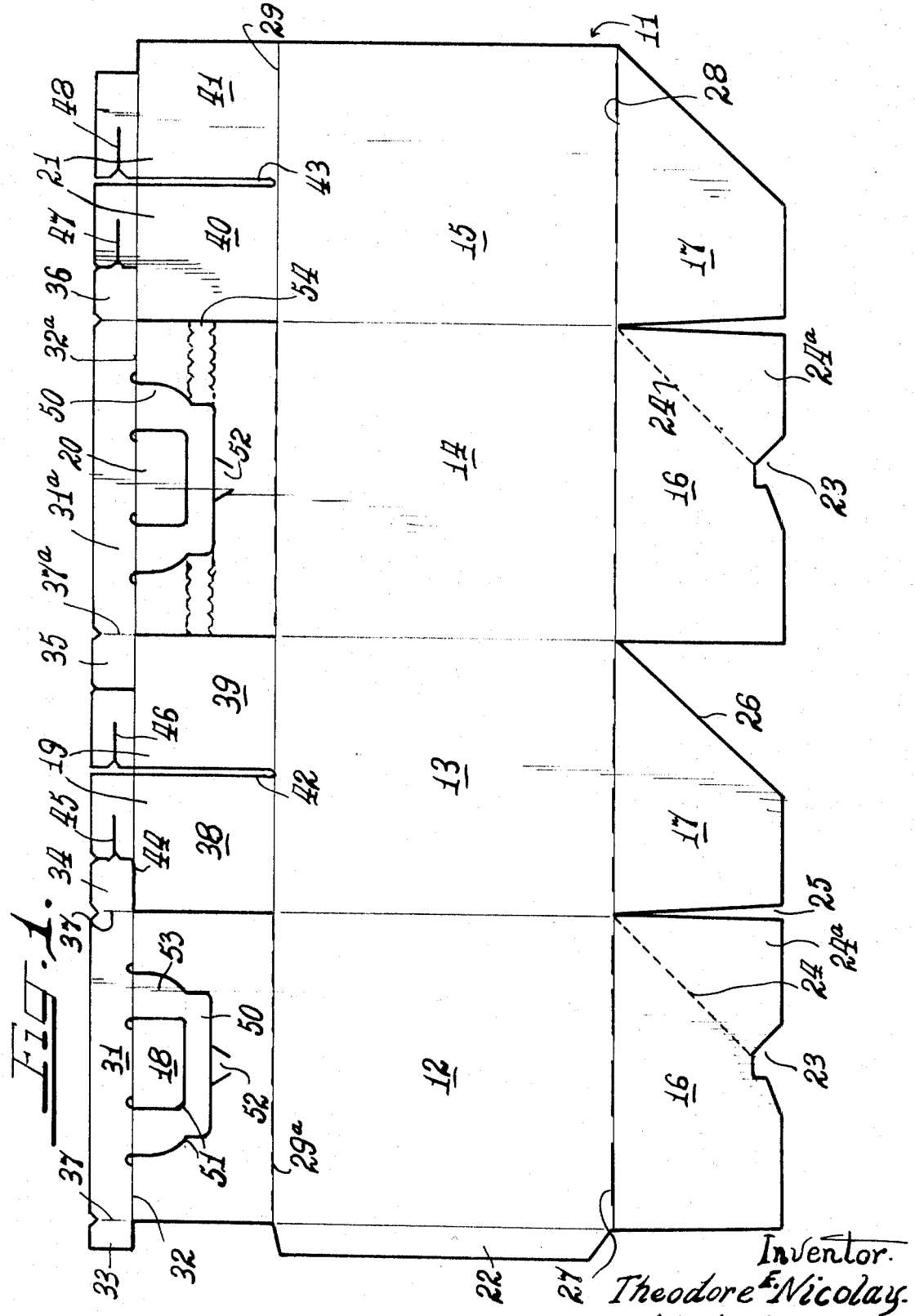


FIG. 1.

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Fig. 2

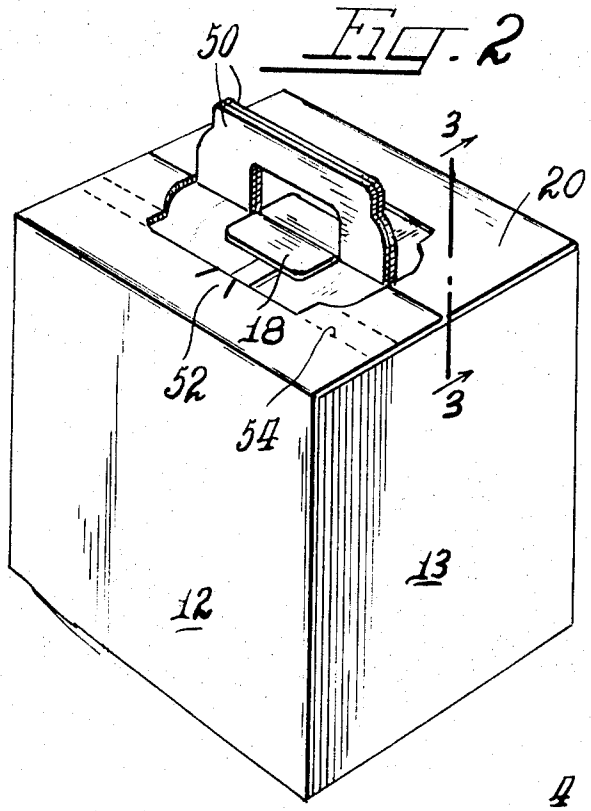


Fig. 4.

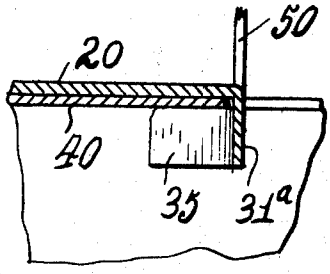


Fig. 3.

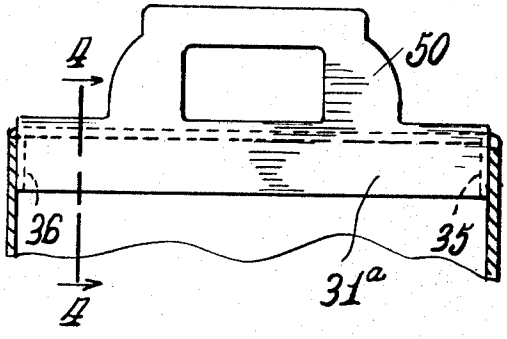
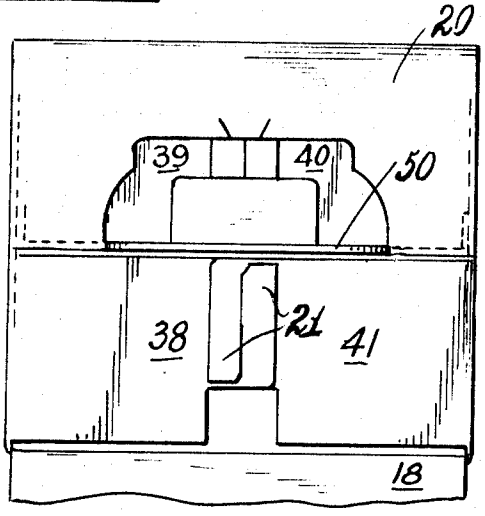


Fig. 5.



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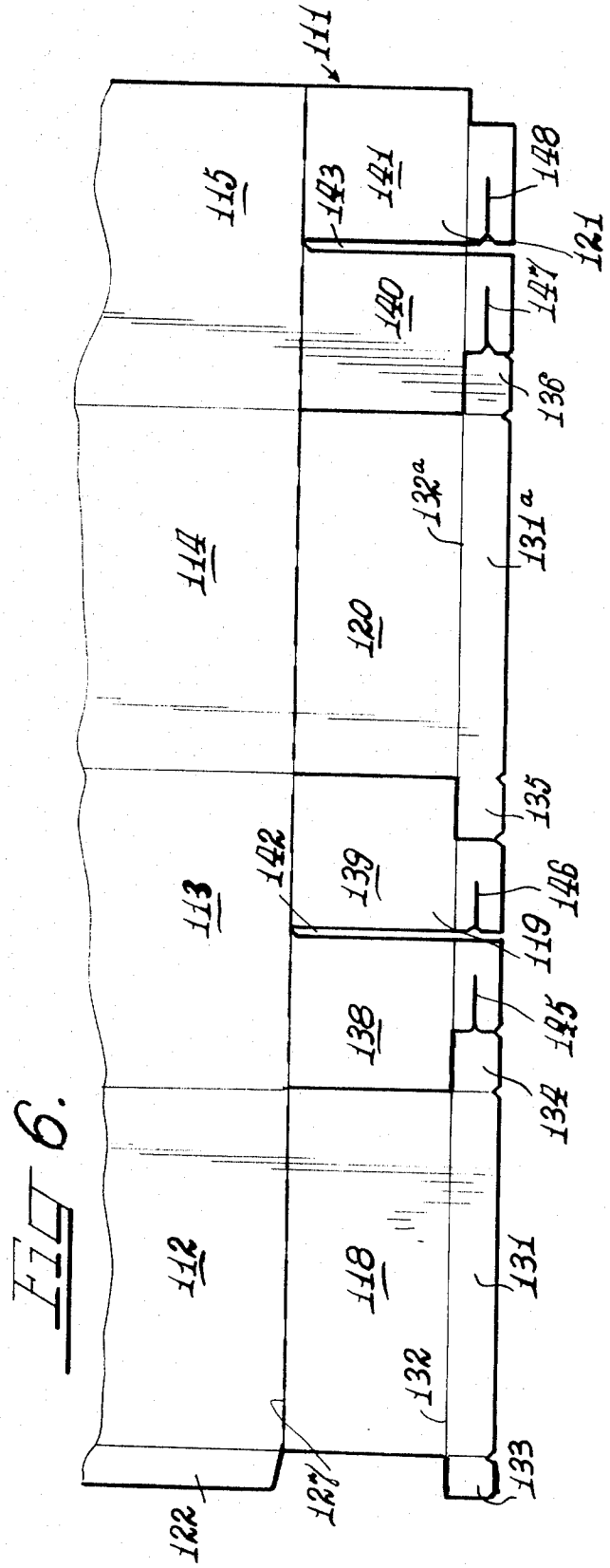


FIG. 6.

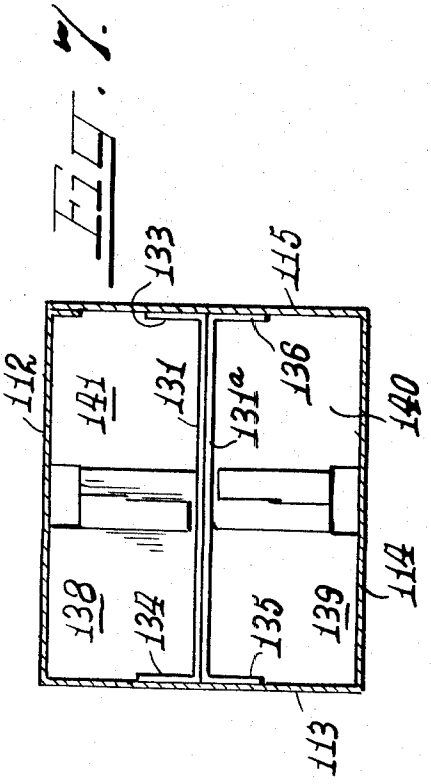


FIG. 7.

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CONTAINER AND CLOSURE FOR THE SAME

The invention relates to folding cartons and corrugated boxes which may be formed from a single blank. The blanks are supplied in a collapsed condition and set up for filling and sealing, either manually or automatically. Containers of the type disclosed herein may be used for containing snack foods, beverages, clothing or the like; and it is particularly desirable that such containers include positive locking means to prevent pilferage of the carton contents during display or while in store inventory or on the shelf, and to reinforce stress areas of the container. It is also desirable, particularly where the container is used to house and carry bulky merchandise, to provide carrying means and positive carton opening means integral with the carton for use by the consumer after purchase of the goods.

It is therefore an object of the invention to provide a novelly constructed container and closure for the same.

Another object is to provide a container of the character referred to which is constructed from a single blank of material and which may be set up, filled, closed and sealed manually or by conventional means.

Another object of the invention is to provide a positive locking closure for a folding carton or corrugated box.

Another object is to provide a carton having integral novel carrying and positive opening means.

Still another object is to provide a container of the character referred to which may be easily and inexpensively manufactured on conventional equipment, which is adapted to conventional setting up, filling, closing and sealing procedures, and which is efficient in use.

Other objects and advantages of the invention will become apparent with reference to the following description and the accompanying drawings, in which:

FIG. 1 is a view of the blank used to form a folding carton embodying the invention.

FIG. 2 is a perspective view of the carton in formed and close condition.

FIG. 3 is a sectional view of part of the top and closure panels of the carton, taken along line 3 — 3 of FIG. 2.

FIG. 4 is a detail sectional view taken substantially on line 4 — 4 of FIG. 3.

FIG. 5 is a top plan view showing the carton top with one of the sets of top flaps in closed condition and the other in open condition.

FIG. 6 is a plan view of part of a modified container blank embodying the invention, in which the bottom panels include a locking closure for reinforcing and dividing the carton.

FIG. 7 is a horizontal sectional view of a container made up from the FIG. 6 blank, showing the bottom lock structure.

Referring to the exemplary structures shown in the accompanying drawings and particularly to FIGS. 1 – 5, the container may be fabricated from a blank 11 of suitable sheet material, such as paperboard or corrugated stock, configurated in the required manner and provided with crease scores and sharp scores and lines of perforations, to define the various panels making up the carton. Specifically, the blank comprises back panels 12, front panel 14 and side panels 13 and 15, joined along score lines 30. EAch of the front and back panels carries on its lower ends like bottom closure panels 16 and each of the side panels carries on its lower end bottom closure panels 17. Front and back panels 12 and 14 on their respective upper ends carry top panels 18 and 20 and side panels 13 and 15 carry closure flaps 19 and 21, respectively. Panel 12 on its free edge carries glue flap 22, which is joined to the underside of panel 15 at its free edge, to form the knock-down carton.

The panels 16 – 17 making up the bottom of the carton are automatically brought into bottom-forming condition by manipulation of the knock-down carton into set-up condition. This automatic bottom is formed by like panels 16, each of which includes lock notches 23 and a row of perforations 24, and panels 17, each of which includes angular sides 25 and 26, respectively. During the same operations as the gluing of the flue flap 22 of panel 12 to the underside of panel 15, the automatic bottom is formed by folding panels 16 and 17 away from their adjoining panels 12, 13, 14 and 15; by folding the panels 12 and 13 and 14 and 15, respectively, back to back; and by folding perforated sections 24*a* along perforations 24 toward panels 16 so that sections 24*a* and panels 16 are face to face, at which time the underside of sections 24*a* are glue joined to the underlying face of each of their respective adjoining panels 17.

The top panels 18 and 20 adjoining the front and back panels 12 and 14 have tuck flaps 31 and 31*a*, divided from the remainder of the top panel by score lines 32 and 32*a*. Tuck flap 31 has on ooposed edges wings 33 and 34 divided therefrom by score lines 37, and tuck flap 31*a* has on opposed edges wings 35 and 36 divided therefrom by score lines 37a.

The bottom panels 16 and 17 are divided from their adjacent back and front and side panels 12, 13, 14, and 15 by a row of perforations 27 and crease lines 28, and those front and back and side panels are joined to the top panels 18 and 20 and the top flaps 19 and 21 by score lines 29, which have a row of perforations 29*a* between panels 12 and 18 and 14 and 20, respectively, along the front and back sides of the container.

Top flaps 19 and 21 are each divided into separate dust flaps 38 and 39 and 40 and 41, respectively, by long slots 42 and 43, respectively, formed from the free edge thereof to the score lines 29. The wings 34, 35, and 36 are die cut from these dust flaps 38, 39 and 40, respectively, but joined thereto during initial construction of the carton by thin webs 44. Additionally, the edges of flaps 38, 39, 40 and 41 have aligned closing slits 45, 46, 47 and 48, respectively.

Die cut into each top panel 18 and 20 is a handle 50 connected to the panel during initial formation of the container by webs 51, and each handle also has a lifting tap 52. The ends 53 of each handle are turned away from their adjacent score lines 32 and 32*a*, respectively, so that when the carton is formed and loaded, tearing into the tuck flaps will be resisted. A tear strip 54 may be provided on one of the top panels 20, for opening of the containiner by a consumer.

Once the carton is folded and glued and the bottom set up as previously described, the interior of the carton is filled. Thereafter, the dust flaps 38, 39, 40 and 41 are folded inwardly along score lines 29, after wings 34, 35 and 36 are broken therefrom by servering their respective webs 44 (leaving spaces in said flaps which will be covered by top panels 18 and 20 when the top panels are brought into closed position as hereinafter described).

Flaps 38 and 41 are locked to one another by slits 45 and 48 and flaps 39 and 40 are locked to one another by slits 46 and 47. Tuck flap 31 on top panel 18 is bent inwardly along score line 32 and its wings 33 and 34 are bent inwardly and toward one another along score lines 37, as to dispose the wings toward the underside of tuck flap 31. The tuck flap and wings are inserted into slots 42 and 43, so that the wings once they pass through said slots bear against the inside face of panels 13 and 15 and the underside of closure flaps 38 and 41, to lock top panel 18 in closed position. A similar procedure is followed with tuck flap 31 a and wings 35 and 36, which are bent inwardly along score lines 32*a* and 37*a* and inserted into slots 42 and 43 to lock top panel 20 in closed position, with the wings bearing against the underside of closure flaps 39 and 40 and the innerfaces of panels 13 and 15. Handles 50 may be grasped by depressing tabs 52 and then bent upwardly by severing webs 51 along the adjoining portions of score lines 32 and 32*a*, respectively.

The contents of the carton are fully sealed and the top panels may not be withdrawn without damaging the package, so that the best means for the consumer to open the container is by pulling tear strips 54 to give access to the interior of the container.

In the modification shown in FIGS. 6 and 7, the locking closure employed to close the top of the carton is used to close the carton bottom in lieu of the automatic bottom previously described. Here, only the lower portions of the carton blank 111 being shown in FIG. 6, the lower ends of back panel 112, front panel 114 and side panels 113 and 115, joined along score lines 130, carry, respectively, bottom panels 118 and 120 and closure flaps 119 and 121. Glue flap 122 is provided on the free edge of back panel 112 for forming the collapsed container in a manner similar to the use of the glue flap 22 shown in the FIGS. 1 – 5 disclosure.

Bottom panels 118 and 120 each have tuck flaps 131 and 131*a*, divided from the remainder of their adjacent panels by score lines 132 and 132*a*. Tuck flap 131 has on opposed edges wings 133 and 134 and tuck flap 131a has on opposed edges wings 135 and 136, each divided from its respective flap by score lines. Each panel forming the modified bottom has score lines 128 dividing them from adjacent panels and the front and back panel score lines have rows of sharp scores or perforations 127.

Bottom flaps 119 and 121 each are divided into separate dust flaps 138 and 139 and 140 and 141, respectively, by long slots 142 and 143. The edges of flaps 138, 139, 140, and 141 each have aligned closing slits 145, 146, 147 and 148, respectively.

In closing the modified bottom, flaps 138 and 141 and 139 and 140 are joined to one another by their respective locking slits 145 and 148 and 146 and 147, respectively, and the tuck flaps 131 and 131a, with their folded wings 133 and 134 and 135 and 136, are threaded into the slots 142 and 143, as previously described with respect to the container top, to lock the bottom in place, as best shown in FIG. 7.

Not only does this bottom structure serve to reinforce the carton and make it more rigid, but also the division of the interior of the carton formed by the upstanding tuck flaps 131 and 131*a*, when in locked position, facilitates alignment and positioning of product sub-packages stacked within the carton.

Only a single tuck flap with opposed wings need be employed to lock either the top or bottom of the container, as other means, such as conventional lock tabs, may be employed to secure the other closure to the locked tuck flap; or a top or bottom panel of sufficient length to span the entire top or bottom of the carton may be used, with a single tuck flap having locking wings employed to secure it in locked position.

Although I have described and shown preferred embodiments of my invention in considerable detail, it will be understood that the description presented is intended to be illustrative and exemplary, rather than restrictive, as details of the structure may be changed or modified without departing from the spirit or scope of the invention. Accordingly, I do not desire to be restricted to the exact construction shown or described.

I claim:

1. In a closure for an open end of a container formed from a blank sheet and including a pair of walls, said closure comprising a closure flap hingedly connected along one edge to one of said walls and a foldable panel hingedly connected along one edge to the other of said walls and adapted to overlay said closure flap when said closure flap and said panel are in folded condition to close said open end, a foldable tuck-in flap on the free edge of said panel, at least one wing on one end of said tuck-in flap adaptable for folding against said tuck-in flap during assembly, said wind being disected from the sheet material of the closure flap, and said closure flap having an opening to receive said tuck-in flap therethrough whereupon said wing engages beneath the closure flap to resist withdrawal of said tuck-in flap and lock said panel to said closure flap.

2. The closure recited in claim 1, in which the tuck-in flap has an ear on each end.

3. The closure recited in claim 1, in which the other end of said container is closed.

4. The closure recited in claim 1, in which a tear strip is provided on the panel.

5. In a closure for an open end of a container including a pair of walls, said closure comprising a closure flap hingedly connected along one edge to one of said walls and a foldable panel hingedly connected along one edge to the other of said walls and adapted to overlay said closure flap when said closure flap and said panel are in folded condition to close said open end, a foldable tuck-in flap on the free edge of said panel, at least one wing on one end of said tuck-in flap adaptable for folding against said tuck-in flap during assembly, said closure flap having an opening to receive said tuck-in flap therethrough whereupon said wing engages beneath the closure flap to resist withdrawal of said tuck-in flap and lock said panel to said closure flap, and a handle formed in said panel.

6. The closure recited in claim 5, in which the handle is connected to the tuck-in flap.

7. In a closure for an open end of a container including a pair of walls, said closure comprising a closure flap hingedly connected along one edge to one of said walls and a pair of foldable panels each hingedly connected along one edge to another of said walls and adapted to overlay said closure flap when said closure flap and said panels are in folded condition to close said open end, foldable tuck-in flaps one on the free edge of each of said panels, at least one wing on one end of one tuck-in flap adaptable for folding against said tuck-in flap during assembly, and said closure flap having an

opening to receive said tuck-in flaps therethrough whereupon said ear engages beneath the closure flap to resist withdrawal of its tuck-in flap and lock its panel to said closure flap.

8. The closure recited in claim **7**, in which the container includes a pair of closure flaps interlocked one to the other and a pair of panels.

9. The closure recited in claim **8**, in which the interlock means comprises flap extensions having cooperating slits therein.

10. The closure recited in claim **8**, in which the tuck-in flap constitutes a divider at the end of the container.

11. The closure recited in claim **7**, in which the container is formed from a single sheet of material scored for folding and including a glue flap for joining opposed ends of the formed sheet.

* * * * *