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3,294,309

SNAP RECLOSABLE HOODED CARTON WITH IMPROVED LOCK STRUCTURE

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2 Sheets-Sheet 1

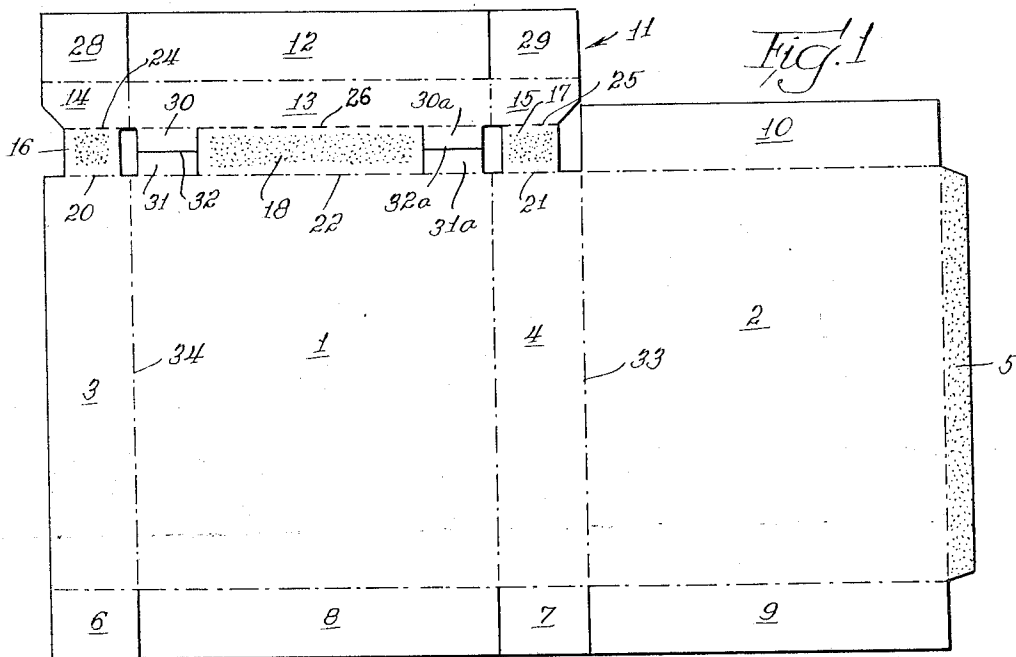


Fig. 2

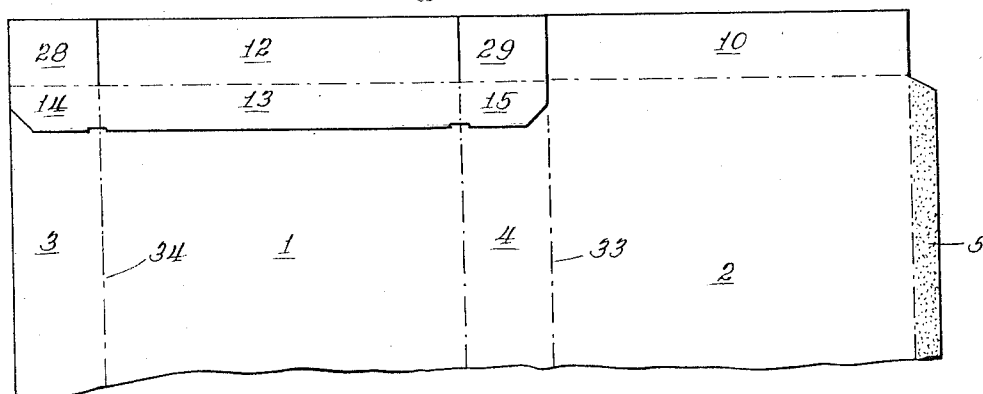
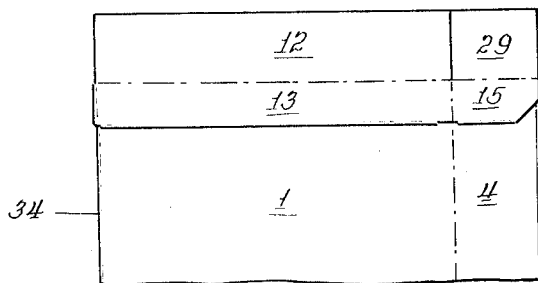


Fig. 3



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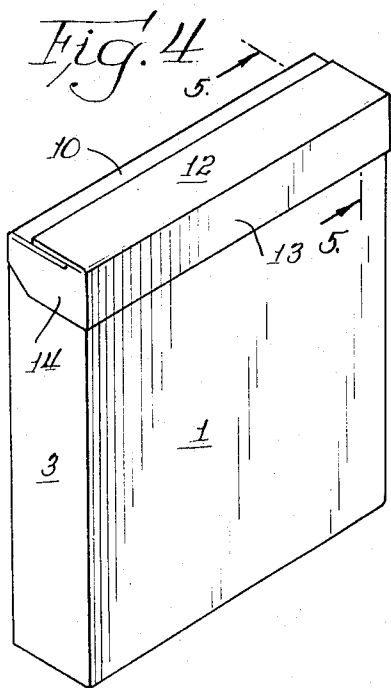
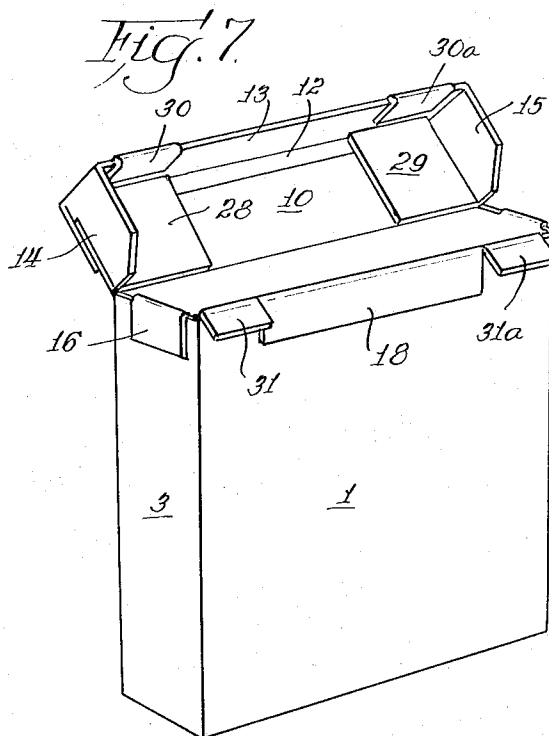
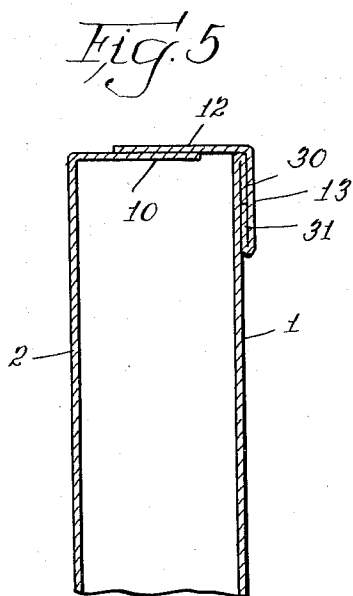
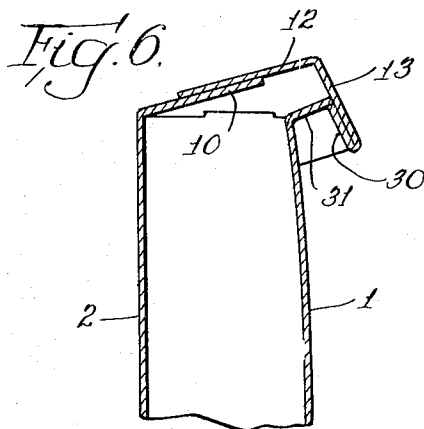
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SNAP RECLOSABLE HOODED CARTON WITH IMPROVED LOCK STRUCTURE

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2 Sheets-Sheet 2



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SNAP RECLOSABLE HOODED CARTON WITH IMPROVED LOCK STRUCTURE

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The present invention relates to cartons, and is more particularly concerned with a sealed carton having means for locking the cover thereof in place after the seal has been broken and with carton blanks for the production thereof.

Cartons made of paperboard comprising a box portion and a hooded cover adapted to be opened and reclosed are well-known in the art. Further, cartons are known in the art which have means for locking the cover or hood in place once the seal has been broken and the cover opened. However, such prior art cartons have had certain disadvantages. In the first place, most of the available hooded cartons which have locking means do not have detachable means for sealing the cover to the carton. Moreover even when cartons have been available with cover locking means as well as sealing means, the cartons are rather difficult to open, and the means for relocking the cover in place have rough edges which adversely affect their reliability and appearance. Even in such cases as exist in the prior art where the locking tabs have been provided with edges by means of tearing existing cut scores or the like, the necessary tearing has had an undesirable effect in that the two locking members do not squarely abut each other and the effectiveness of the locking device has accordingly been substantially impaired.

It is an object of the present invention to provide a strong and durable carton having a hinged hooded cover. It is another object to provide a carton having an end upon which the cover is hinged, in relation to the length of the carton. It is a further object to provide a reinforced carton of the type described having improved means for positively locking the cover in place to protect unconsumed contents. It is still a further object to provide a carton having means for sealing the cover in place. It is an additional object to provide a sealed carton of the type described which may be readily assembled, and wherein means retaining the cover in closed position may be readily fractured for opening the cover, and wherein means are provided to retain the cover in closed position after the seal has been broken. Still another object is to provide the said carton in the form of a carton blank suitable for erection and sealing, and particularly in the form of a blank which is side seamed or which is alternatively not side-seamed but flat and ready for use by the packager on a mandrel or other conventional "double package making machinery" on which an inner wrap is included in the carton interior.

The accomplishment of the foregoing and additional objects will become more fully apparent hereinafter.

The invention in its preferred embodiment is illustrated by the accompanying drawings in which:

FIG. 1 is a plan view of a cut and scored blank for forming a carton according to the invention, viewed from the outside surface thereof.

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FIG. 2 is a plan view of the blank shown in FIG. 1 after the cover assembly has been folded down and the struts glued to the outer surfaces of the front wall panel and side wall panels.

FIG. 3 is a fragmentary plan view of the blank of FIG. 2 partially glued in the form of a folded sleeve.

FIG. 4 is a perspective view of the completely assembled and sealed carton.

FIG. 5 is a fragmentary cross-sectional view of the carton taken at the line 5-5 of FIG. 4.

FIG. 6 is a fragmentary cross-sectional view similar to that of FIG. 5, showing the edges of the lock flaps in engagement in the position wherein the cover has been partly opened; and

FIG. 7 is a perspective view of the carton after the cover has been opened.

According to the invention, a carton is provided which may be formed from an integral blank. The carton has a bottom, front, rear, and side panels, and a hooded top. A lock flap assembly is provided at each end of the cover, one flap of each assembly being hingedly connected to the edge of the cover and the other to the upper edge of the front panel, the flaps of each assembly cooperating to retain the cover in closed position. In the blank form, the cover is detachably connected to the edges of the front wall panel and both side wall panels by means of detachable webs or struts. A cover connecting flap member is hingedly connected to the rear wall panel. During assembly this flap is adhesively affixed to the cover assembly and the webs are adhesively affixed to the outer surface of the carton body and serve to retain the cover in sealed position. The seal may be readily broken by lifting the cover and detaching it at the severance lines at which the cover is connected to the webs. When the cover is reclosed, the cooperating lock flaps at each end serve to retain the cover in closed position. The cover may be opened by applying sufficient force to overcome the locking retention of the lock flaps.

Reference is now made to the accompanying drawings for a better understanding of the invention, wherein all the parts are numbered and wherein the same numbers are used to refer to corresponding parts throughout.

Referring to the drawings, FIG. 1 shows a blank for forming a carton according to the invention and comprises a front wall panel 1, a rear wall panel 2, and side wall panels 3 and 4. A glue flap 5 is connected to the free edge of the rear wall panel and is adapted to be adhesively affixed to the side wall panel 3. Alternatively, the glue flap 5 may be connected to the side wall panel 3 and subsequently adhesively affixed to the free edge of the rear wall panel 2. The bottom of the carton is formed by tuck flaps 6 and 7 hingedly connected to the side panels 3 and 4, respectively, and bottom panels 8 and 9 hingedly connected to the front wall panel 1 and rear wall panel 2 respectively.

The cover or hood of the carton is formed by means of an inner cover panel 10 hingedly connected to the top of the rear wall panel 2, and a cover panel assembly 11 hingedly connected to the top edges of the front wall panel 1 and the side wall panels 3 and 4. The cover assembly comprises an outer cover panel 12, a cover front wall panel 13, and cover end wall panels 14 and 15. The cover assembly is connected to the carton proper by means of connecting struts 16, 17, and 18. The struts

16, 17, and 18, are hingedly connected to the panels 3, 4, and 1, respectively, at score lines, and are detachably connected to the end wall panels 14 and 15 and cover front wall panel 13, respectively, at severance lines 24, 25, and 26 formed by suitable means such as perforations, slits or other suitable means which may be utilized for forming severance lines. A pair of securing tabs 28 and 29 hingedly connected to the cover side wall panels 14 and 15 are provided for being affixed to the inner cover panel 10 for securing the cover end wall panels. Cover lock flaps 30 and 30a are hingedly connected and adhesively affixed to the cover front wall panel 13, and front wall lock flaps 31 and 31a are hingedly connected to the front wall 1. Alternatively the lock flaps 31 and 31a may be adhesively affixed to the outer surface of the front wall panel 1 and the lock flaps 30 and 30a hingedly connected to panel 13 without adhesive affixation. The lock flaps 30 and 31 and 30a and 31a are in abutting mutual engagement in the blank at cuts 32 and 32a. As shown the cuts are complete to provide smooth abutting edges, permitting the lock flaps to swing independently of each other, and to engage each other smoothly to provide a lock of maximum effectiveness.

In assembling the carton, an adhesive is applied to the outer surface of the connecting webs 16, 17, and 18, as shown in stippled shading, and the cover assembly is folded outwardly at the score lines 20, 21, and 22, until the outer surface of the cover assembly 11 engages the outer surfaces of the front wall panel 1 and the side wall panels 3 and 4, adhesively affixing the connecting webs to the outer surfaces of the panels, as shown in FIG. 2. An adhesive is applied to the inner surfaces of the lock flaps 30 and 30a, or alternatively to the surface of the cover front wall panel 13 which flaps 30 and 30a engage when the panel is folded over, and the cover assembly 11 is then folded inwardly at the severance lines 24, 25, and 26, causing the lock flaps 30 and 30a to become adhesively affixed to the inside of the cover front wall panel 13. The rear wall panel 2 may then, if desired, be folded over at the score line 33, and the side wall panel 3 then folded over at the score line 34 and adhesively affixed to the glue flap 5. The carton is now partially assembled in the form of a folded tube, as shown in FIG. 3, and may be so shipped to the packager.

To further assemble the carton for filling, the folded carton may be squared up by suitable means such as a conventional squaring machine. The bottom is then closed by folding in the tuck flaps 6 and 7, and subsequently the bottom flaps 8 and 9 which may be adhesively affixed to each other. The carton may now be filled. After filling, the end flaps or securing tabs 28 and 29 are folded over and the inner cover panel 10 is then folded over and secured thereto. The outer cover panel 12 is then folded over and adhesively secured to the inner cover panel 10, and, if desired, to exposed portions of the securing tabs 28 and 29. The carton is now in sealed condition as shown in FIG. 4.

To open the carton, the edge of the cover may be lifted, causing separation at the severance lines 24, 25, and 26, thus breaking the seal and freeing the cover so that it may be opened. The connecting webs 16, 17, and 18, remain adhesively affixed to the outer surfaces of the panels 3, 4, and 1, respectively, rendering the panels more rigid, as shown in FIG. 7. When the cover is reclosed, the free edges of the lock flaps 30 and 30a abuttingly engage the free edges of the lock flaps 31 and 31a, retaining the cover in closed position and preventing its opening even when accidentally dropped, as shown in FIG. 5. The cover may be reopened by applying sufficient force to spring the lock flaps 31 and 32 which are not adhesively affixed to the panel 1 to which they are hingedly connected, causing the flaps to become unfolded, and causing the edge of the front wall panel 1 to be bent inwardly to permit release of the lock flaps, as

shown in FIG. 6. The cover may be subsequently closed and reopened as many times as desired.

The carton of the present invention has a number of advantages over similar cartons of the prior art. It is provided with a "flip-top" and is hooded, that is, has side panels which slide over the mouth of the carton and provide an efficient and safe enclosure for the end of the carton. The carton is provided with lock flaps to retain the cover in closed position even after the main seal of the carton has been broken. Moreover, the lock flaps are so formed that their engaging edges are completely unattached to each other, thus permitting smooth straight engaging surfaces, as opposed to prior art cartons which utilize lock flaps which are detachably connected to each other at a severance line, and which serve for retaining the cover in sealed position, the edges of which, even after separation from each other are jagged and hinder and adversely effect the proper operation of the lock flaps. Moreover, the positioning of a pair of complementary lock flaps at each end of the cover where the cover closely engages the front wall provides more positive locking action than a single pair of complementary lock flaps placed at the center of the cover, in which latter position the cover front wall panel bows and engages the front wall member only loosely. The present carton is relatively inexpensive to produce, relatively simple to construct, fill, and seal, and does not require redesigned machinery for its assembly. Additionally, prior art cartons of a similar type have also suffered from the disadvantage that the open top of the receptacle portion of the carton has generally been weaker and more prone to deformation than desired, in some cases even flimsy. This defect is remedied in the carton of the present invention in that the webs which initially secure the cover portion to the body or receptacle portion of the carton remain adhered to the front and side panels of the carton body, thereby adding needed rigidity to the carton body in these areas and assuring that the carton maintains its form and shape throughout the necessary sequence of openings and reclosings attendant upon the sequential utilization of all of the contents of the carton.

It is to be understood that the invention is not limited to the exact details of construction, operation, or exact materials or embodiments shown and described, as obvious modifications and equivalents will be apparent to one skilled in the art, and the invention is therefore to be limited only by the scope of the appended claims.

I claim:

1. A carton formed of an integral blank comprising a container assembly including a front wall panel, a rear wall panel and side wall panels, and a cover assembly hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels connected thereto, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts one adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut adhesively affixed to the outer surface of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps, one pair positioned at each side of said centrally positioned strut and between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being adhesively affixed to a surface of one member of said cover front wall panel and said front wall panel and the other being hingedly connected to the edge of and folded over in engagement with a surface of the other member of said cover front wall panel and said front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but

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being free of attachment to each other, whereby said lock flaps cooperate to retain said cover in closed position.

2. A carton formed of an integral blank comprising a container assembly including a front wall panel, a rear wall panel, and side wall panels, and a cover assembly hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels connected thereto, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts one adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut adhesively affixed to the outer surface of said front wall panel and detachably connected to the lower edge of said cover front wall panel and two pairs of lock flaps, one pair positioned at each side of said centrally positioned strut and between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being adhesively affixed to the inner surface of said cover front wall panel and the other being hingedly connected to the top edge of and folded over in engagement with the outer surface of said front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate to retain said cover in closed position.

3. A carton formed of an integral blank comprising a container assembly including a front wall panel, a rear wall panel and side wall panels, and a cover assembly hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels connected thereto, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts one adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut adhesively affixed to the outer surface of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps, one pair positioned at each side of said centrally positioned strut and between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being adhesively affixed to the outer surface of said front wall panel, and the other being hingedly connected to the lower edge of and folded over in engagement with the inner surface of said cover front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate to retain said cover in closed position.

4. A carton of claim 1, wherein the container assembly comprises a rear wall panel having an inner cover top panel hingedly connected thereto, and side wall panels, and wherein the cover assembly includes an outer cover top panel adhesively affixed to said inner cover top panel which top panel has a cover front wall panel and cover end wall panels hingedly connected thereto, and a glue flap hingedly connected to the upper edge of each of said cover end wall panels and adhesively affixed to the inner surface of said inner cover top panel.

5. An integral blank for forming a carton comprising a container assembly including a front wall panel, a rear wall panel, and side wall panels, and a cover assembly adapted to be hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts, one hingedly connected to the edge of and adapted to be adhesively affixed to the outer surface of each of said side wall panels and detachably connected

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to the lower edge of each of said cover end wall panels, and a centrally positioned strut hingedly connected to the edge of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps adapted to be positioned between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being hingedly connected to the edge of and adapted to be folded over and adhesively affixed to a surface of one member of said cover front wall panel and said front wall panel, and the other being hingedly connected to the edge of and being adapted to be folded over in engagement with a surface of the other member of said cover front wall panel and said front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate in the erected carton to retain said cover in closed position.

6. An integral blank for forming a carton comprising a container assembly including a front wall panel, a rear wall panel, and side wall panels, and a cover assembly adapted to be hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts, one hingedly connected to the edge of and adapted to be adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut hingedly connected to the edge of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps adapted to be positioned between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being hingedly connected to the edge of and adapted to be folded over and adhesively affixed to the inner surface of said cover front wall panel, and the other being hingedly connected to the edge of and being adapted to be folded over in engagement with the outer space of said front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate in the erected carton to retain said cover in closed position.

7. An integral blank for forming a carton comprising a container assembly including a front wall panel, a rear wall panel, and side wall panels, and a cover assembly adapted to be hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts, one hingedly connected to the edge of and adapted to be adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut hingedly connected to the edge of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps adapted to be positioned between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being hingedly connected to the edge of and adapted to be folded over and adhesively affixed to the outer surface of said front wall panel, and the other being hingedly connected to the edge of and being adapted to be folded over in engagement with the inner surface of said cover front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate in the erected carton to retain said cover in closed position.

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8. An integral blank of claim 5 wherein the container assembly comprises a rear wall panel having an inner cover top panel hingedly connected thereto, and side wall panels, and wherein the cover assembly includes an outer cover top panel adapted to be adhesively affixed to said inner cover top panel, which top panel has a cover front wall panel and cover end wall panels, and a glue flap hingedly connected to the upper edge of each of said cover end wall panels and adapted to be adhesively affixed to the inner surface of said inner cover top panel.

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References Cited by the Examiner

UNITED STATES PATENTS

2,369,389	2/1945	Williamson et al.	
2,899,120	8/1959	James	229—45 X
2,951,626	9/1960	Weiss	229—44
3,116,007	12/1963	D'Espisito et al.	229—45
3,167,239	1/1965	Collura	229—51
3,191,848	6/1965	Meyers	229—44 X

10 GEORGE O. RALSTON, *Primary Examiner.*