

Dec. 6, 1960

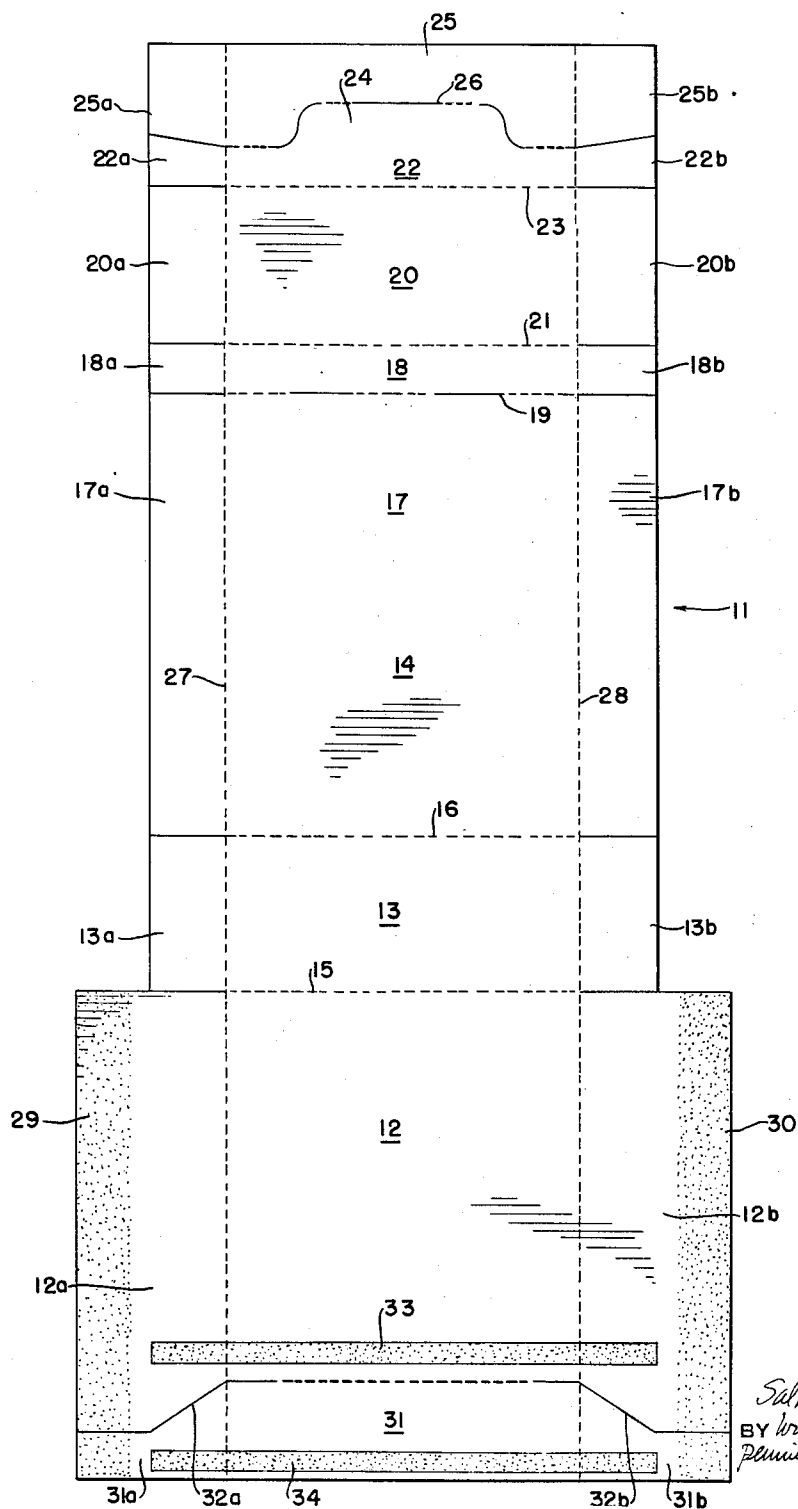
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2,963,214

CARTONS WITH REPLACEABLE END CLOSURES

Filed May 26, 1958

4 Sheets-Sheet 1



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FIG. 3

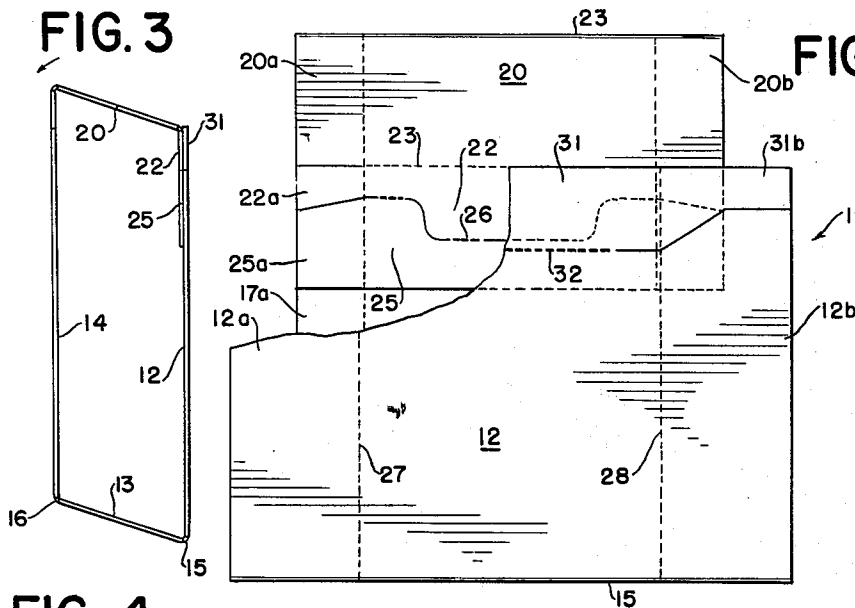


FIG. 2

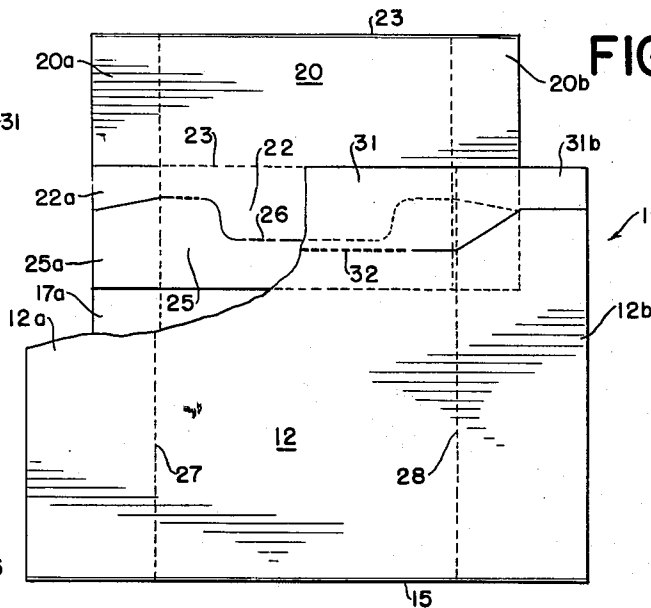


FIG. 4

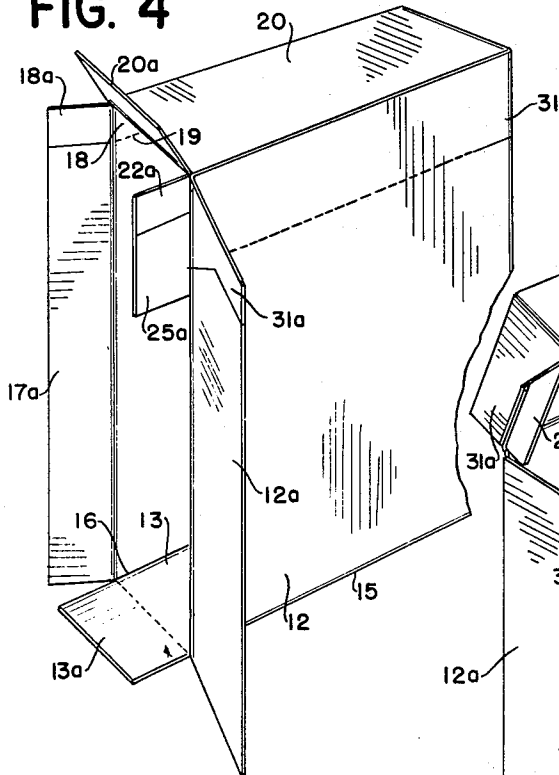
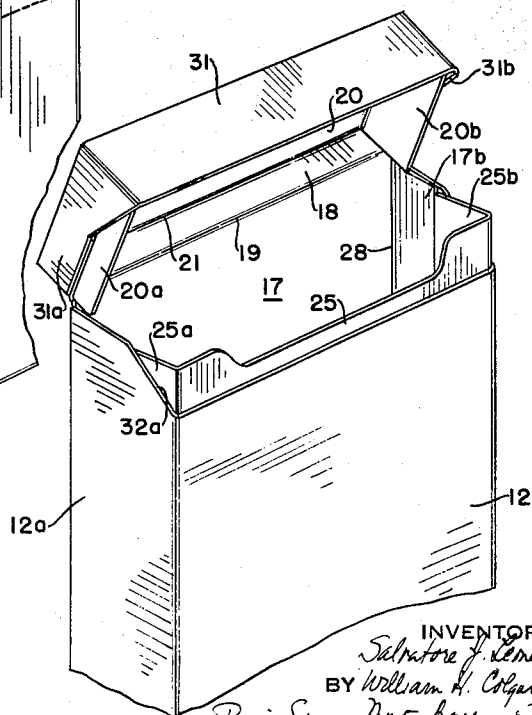


FIG. 5



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FIG. 6

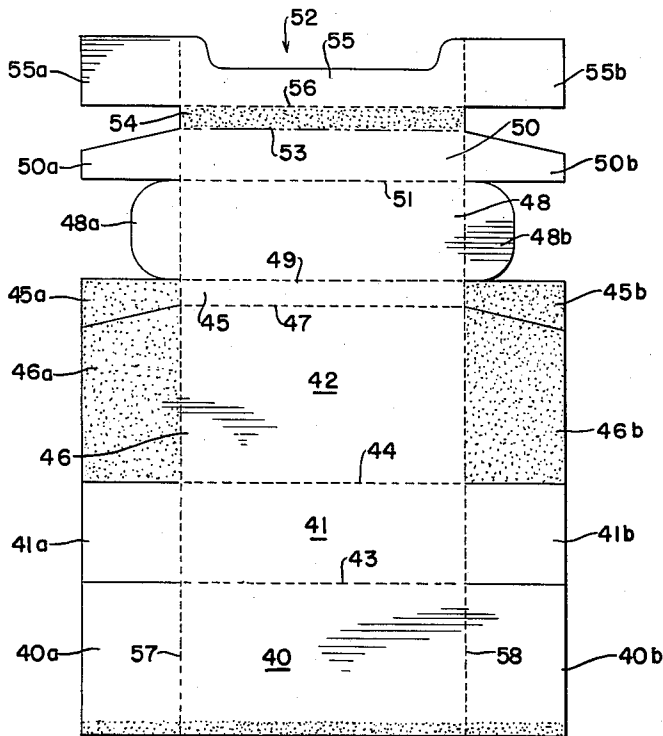


FIG. 7

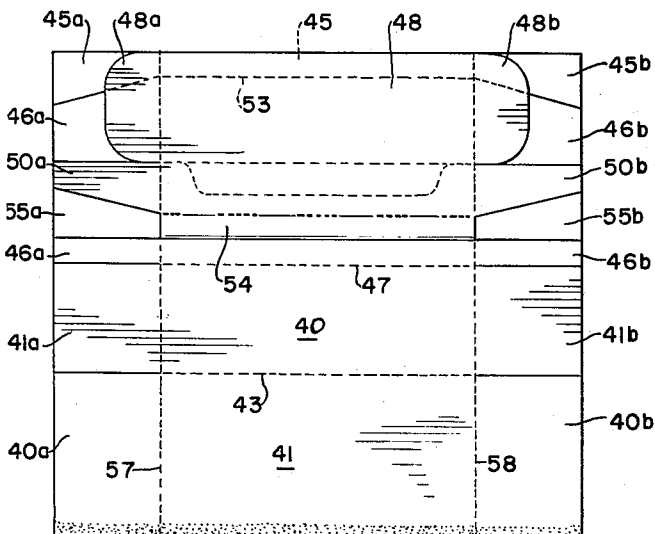
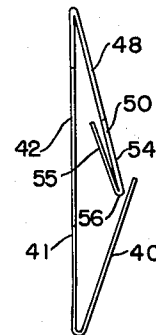


FIG. 8



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FIG. 9

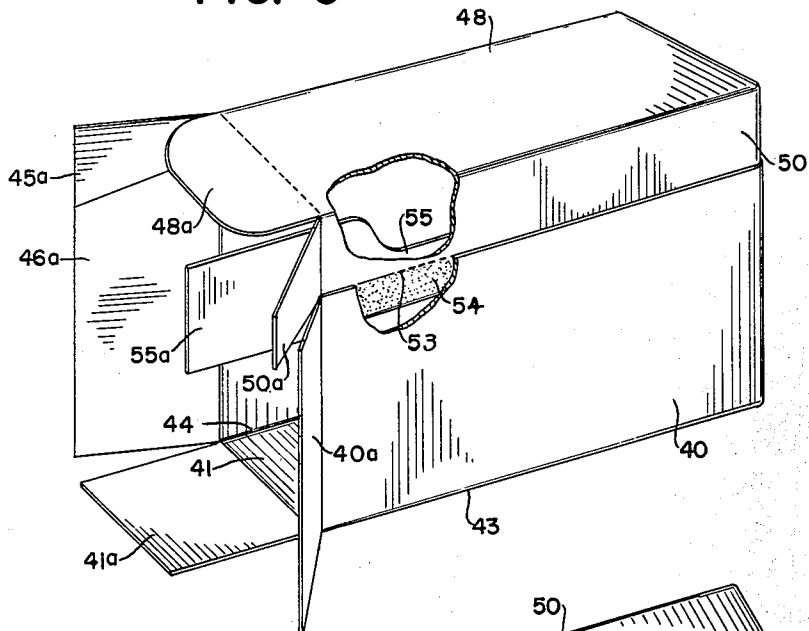
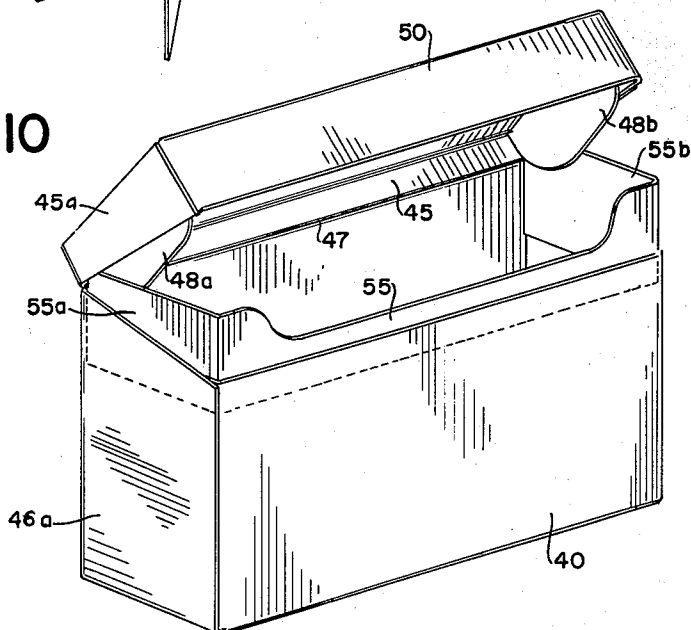


FIG. 10



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CARTONS WITH REPLACEABLE END CLOSURES

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9 Claims. (Cl. 229-44)

This invention relates to cartons and is concerned more particularly with a novel carton with a reclosable cover, which can be shipped in collapsed glued condition and, upon being erected, can be loaded through either end by conventional loading equipment.

Cartons of the reclosable cover type are used for many purposes and recently have been widely employed as cigarette boxes. Such boxes are made from flat blanks, which are delivered in that form to the cigarette manufacturer. In producing the packages, a stack of cigarettes is placed upon a blank and the latter is then folded about the stack and glued together to complete the body of the box, after which the ends are closed and sealed in other operations. The simultaneous conversion of the blank into a box and loading of the box require special machinery and the difficulties involved have somewhat retarded the use of reclosable cover cartons.

The present invention is directed to the provision of a novel carton with a reclosable cover made from a single blank, which can be folded and glued to form a flat or collapsed sleeve or tube. At the point of use, the carton can be erected by squaring the tube and the erected carton can be filled through either end.

The new carton has a cover, which includes top, front, and rear panels, and the rear panel is a transverse section of the rear wall of the carton at the upper end of the wall. The cover swings about a hinge connection between the lower edge of the transverse section and the remainder of the rear wall and means are provided for guiding the cover to closed position and holding it in that position. Such guide means include a panel secured to the inner face of the front wall of the carton body and detachably connected to the front panel of the cover. When the cover is first opened, the detachable connection between the guide panel and the front cover panel is broken, so that the guide panel remains in place secured to the front wall of the carton and in position to guide the cover as it is closed.

For a better understanding of the invention, reference may be made to the accompanying drawings, in which:

Fig. 1 is a plan view of the blank used in making one form of the new carton;

Fig. 2 is a front elevational view, with parts broken away, of a partially formed carton made from the blank of Fig. 1;

Fig. 3 is an end elevational view of the carton of Fig. 2 partially erected;

Fig. 4 is a perspective view of an erected carton formed from the blank of Fig. 1 with one end open;

Fig. 5 is a fragmentary perspective view of the carton made from the blank of Fig. 1 with the cover open;

Fig. 6 is a plan view of a blank used in making a second form of the new carton;

Fig. 7 is a front elevational view of a partially formed carton made from the blank of Fig. 6;

Fig. 8 is an end view of the blank of Fig. 6, showing

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the sequence of folds to make the partially formed carton of Fig. 7;

Fig. 9 is a perspective view, with parts broken away, of a carton made from the blank of Fig. 6 with one end open; and

Fig. 10 is a perspective view of the carton made from the blank of Fig. 6 with the cover open.

The carton illustrated in Figs. 1-5, incl., is formed from a blank 11 of paperboard or like material, which is subdivided into a front wall 12, a bottom wall 13, and a rear wall 14 by transverse crease lines 15, 16. The rear wall 14 is subdivided into a lower section 17 and an upper section 18 by a transverse line 19, which is formed partly by cuts and partly by creases. The upper section 18 of the rear wall forms part of a cover, which includes a top cover panel 20 joined to the upper section 18 of the rear wall by a crease line 21. The cover also includes a front cover panel 22 connected to the top cover panel by a crease line 23. The front cover panel 22 is provided with a tongue 24 extending outwardly from its free edge and a guide panel 25 is connected to the free edge of the front cover panel 22 along a line 26 formed partly of scores and partly of cuts.

The blank is formed with spaced longitudinal crease lines 27, 28, which define flaps at the ends of several walls. Thus, the front wall 12 has flaps 12a, 12b lying outwardly from the lines 27, 28, respectively, and these flaps have areas 29, 30 along their outer edges, to which glue is to be applied. The bottom wall 13 has flaps 13a, 13b, which are narrower than the flaps 12a, 12b and are separated therefrom by cuts at the ends of crease line 15. The lower section 17 and the upper section 18 of the rear wall 14 have flaps 17a, 17b, and 18a, 18b, respectively, at their ends and these flaps are the same width as flaps 13a, 13b. Flaps 17a, 17b are separated from flaps 13a, 13b by cuts at the ends of crease line 16 and are similarly separated from flaps 18a, 18b by cuts at the ends of the line 19. The top cover panel 20 has flaps 20a, 20b separated from flaps 18a, 18b by cuts at the ends of line 21 and the front cover panel 22 has flaps 22a, 22b separated from flaps 20a, 20b by cuts at the ends of line 23. The detachable guide panel 25 has flaps 25a, 25b at its ends.

The front wall 12 is provided with a detachable section 31 at its free end and the section is separated from the remainder of the wall by a transverse line 32, which is partly scored and partly cut. The detachable section is formed with flaps 31a, 31b at its ends and the flaps have narrow end sections with inclined edges leading to the central part of the flap and formed by cuts 32a, 32b, which are extensions of the line 32.

To convert the blank into a carton, glue is applied to an area 33 extending across the front wall 12 and into the flaps 12a, 12b and glue is also applied to an area 34 extending across the detachable section 31 and into the flaps 31a, 31b. The blank is then folded on the lines 15 and 21, so that the top and front cover panels 20 and 22 overlie the rear wall 14 and the front wall 12 overlies the bottom wall 13 and rear wall 14. In this condition of the blank, the guide panel 25 lies beneath the front wall 12 and is secured thereto by the glue on area 33 and the detachable section 31 overlies the front cover panel 22 and is secured thereto by the glue on area 34 to form an outer front cover panel. The blank has now been converted into a collapsed tube and, when the carton is to be erected, the tube is squared as indicated in Fig. 3 to place the front wall 12 parallel to the rear wall 14 and the bottom wall 13 parallel to the top cover panel 20. With the carton squared, the flaps on the ends of the walls and panels extend outwardly to leave the ends of the carton open and the carton can be loaded through either end, after which the ends are closed. For

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this purpose, the narrow flaps at each end of the carton, such as the flaps 13a, 17a, 18a, 20a, 22a, and 25a, are turned inwardly to lie at right angles to the walls or panels to which they are attached. In turning the flaps inwardly, the flaps 20a, 20b on the top cover panel are caused to lie inmost and the flaps 18a, 18b on the top section of the rear wall and the flaps 22a, 22b on the top front panel lie in the same plane with the flaps 25a, 25b on the guide panel. The wide flaps, such as flaps 12a, and 31a, are turned in over the narrow flaps, such as flaps 18a, 22a, and are secured to the underlying narrow flaps by the glue on areas 29, 30.

When the box is to be opened, the cover is swung upwardly about the line 19 as an axis and, as this occurs, the guide panel 22 is released from the front cover panel 22 along the line 26 and the detachable cover panel 31 is released from the front wall along the line 32. When the box is to be closed, the cover is swung back and it is guided in this movement by the top cover panel flaps 20a, 20b passing inside the flaps 25a, 25b on the guide panel and also by the cover panel 31 moving down over the portions of the guide panel 25 exposed above the upper end of the front wall 12. When the cover comes to rest, the flaps 18a, 18b on the upper section of the rear wall are in contact with the upper ends of flaps 17a, 17b on the lower section of that wall and the flaps 22a, 22b rest upon the upper edges of the flaps 25a, 25b on the guide panel. Also, the flaps 31a, 31b on the detachable front cover panel rest upon the upper edges of the flaps 12a, 12b of the front wall. The provision of the guide panel 22, which is detached from the front cover panel 22 and secured to the inner face of the front wall 12 to project above the wall, and of the panel 31, which is detached from the front wall 12 and secured to the outer face of the front cover panel 22 to project below the lower edge of the panel, produces both guiding and stop means for the cover and, when the cover is closed, it is supported in proper position and held firmly in place.

The blank shown in Fig. 6 is for a modified form of the new carton and it is subdivided into a front wall 40, a bottom wall 41, and a rear wall 42 by transverse crease lines 43, 44, the rear wall being divided into an upper section 45 and a lower section 46 by a transverse crease line 47. The upper section 45 of the rear wall forms part of a cover, which includes a top cover panel 48 connected to section 45 along a crease line 49, and a front cover panel 50 connected to panel 48 along a crease line 51. A detachable guide panel 52 is secured to the free edge of panel 50 along a line 53, which is formed partly of scores and partly of cuts, and the guide panel includes a section 54 adapted to be coated with glue and connected directly to panel 50 and a second section 55 connected to the first section 54 along a crease line 56.

The blank is subdivided by longitudinal crease lines 57, 58, which form tabs attached to the ends of the various walls and panels except section 54 of guide panel 52. Thus, the front and bottom walls 40, 41 are provided with tabs 40a, 40b and 41a, 41b, respectively, at their ends with the corresponding tabs separated by cuts formed as extensions of crease line 43. The upper and lower sections 45, 46 of rear wall 42 are also provided with respective tabs 45a, 45b and 46a, 46b and the tabs 46a, 46b are separated from tabs 41a, 41b by cuts lying at the ends of crease line 44. Tabs 45a, 45b are separated from tabs 46a, 46b by cuts extending outwardly and at an angle to crease line 47 with the tabs 45a, 45b increasing in width toward their free ends. The tabs on walls 40, 41, and 42 are of the same width, while the top cover panel 48 has tabs 48a, 48b at its ends, which are substantially shorter than the other tabs and have rounded corners. The front cover panel 50 is formed with tabs 50a, 50b, which are of the same shape and size as tabs 45a, 45b but reversed in position so as to taper in width toward their free ends. The section 55 of the

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guide panel has tabs 55a, 55b, which are of the same width as tabs 50a, 50b.

To convert the blank of Fig. 6 into a carton, the section 55 of the guide panel is folded upon line 56 to overlie section 54 and is secured thereto by glue covering section 54. The blank is then folded on line 49 so that the top cover panel 48, the front cover panel 50, and the section 54 of the guide panel lie in a plane and overlap the rear wall 42. When the panels are in this position, the section 55 of the guide panel lies against the face of rear wall 42 and extends beneath the front cover panel 50. The front wall 40 is now folded upon line 43 so that it overlaps the section 54 of guide panel 52 and the wall and panel section are secured together by glue applied to the outer face of panel section 54. The blank is thus converted into a collapsed tube and, when the tube is squared to erect the carton, the front and rear walls 40, 42 lie parallel to each other as do also the bottom wall 41 and the top cover panel 48. The flaps lie in the planes of the walls and panels, to which they are connected, so that the ends of the carton are open and it can be loaded through either end.

When the carton has been loaded and is to be sealed, the flap 48a is first folded in to lie at right angles to the top cover panel 48, after which flap 41a is similarly folded in. In the next operation, flaps 40a, 50a, and 55a are folded in, after which flaps 45a and 46a are folded in and secured in place by gluing. As a result of these operations, flap 46a overlies and is secured to flap 40a and flap 45a overlies and is secured to flap 50a. The flaps at the outer end of the carton are then folded inward in the same sequence and secured together as described.

When the carton is to be opened, the cover is lifted and this causes the guide panel 52 to be detached from the lower edge of the front cover panel 50 along the line 53. The section 54 of the guide panel remains in position against the inner surface of front wall 40 near the upper edge thereof, while section 55 and its flaps 55a, 55b extend upwardly above the top of the front wall 40 and above the top of flaps 40a, 40b. When the carton is to be closed, the cover is swung down and, in such movement, is guided by flaps 48a, 48b passing inside the flaps 46a, 46b on the rear wall. Also, the front cover panel 54 moves down over and is guided by the exposed guide panel section 55 and its flaps 55a, 55b.

When the cover is in closed position, the lower edge of the front cover panel 50 rests upon the upper edge of the guide panel section 54 and the flaps 45a, 45b rest upon the upper ends of flaps 46a, 46b of rear wall 42. The downward movement is of the cover thus arrested with the cover in proper position and the cover is held securely in place against accidental dislodgment.

We claim:

1. A carton with a reclosable cover, which comprises a single blank sub-divided by crease lines into front, bottom, and back walls and a cover, the back wall being divided by a transverse hinge crease near its upper edge into upper and lower sections and the cover including a top cover panel hinged to the upper edge of the upper section of the back wall, a front cover panel connected to the front edge of the top cover panels and extending downward therefrom, and flaps hinged to the ends of the top and front cover panels, flap hinged to the front, bottom, and back walls and connected in overlapping relation to close the ends of the carton, and guide means for the cover including a guide panel formed as a section of and detachably connected to the front cover panel, the guide panel overlapping a portion only of the front wall and being secured adhesively to the inner surface of the front wall to project above the upper edge of the front wall, the guide panel lying within the cover when the latter is closed.

2. The carton of claim 1, in which the cover guide means include flaps hinged to the ends of the guide panel

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and extending inward at right angles to the guide panel.

3. The carton of claim 2, in which the flaps on the top cover panel lie inside the flaps on the guide panel and the flaps on the front cover panel lie in the plane of the flaps on the guide panel.

4. The carton of claim 1, in which the front wall has a transverse detachable section at its upper end and the section is secured to the outer surface of the front cover panel and overlaps the guide panel.

5. The carton of claim 4, in which the ends of the cover are closed by overlapping flaps on the upper section of the back wall and the top and front cover panels, the flaps on the top cover panel lying inmost, and the guide panel has end flaps lying outside the flaps on the top cover panel and inside the flaps on the front cover panel.

6. The carton of claim 1, in which the outer flaps closing the ends of the carton have top edges inclined at least partly upwardly and to the rear and the end flaps on the front cover panel have lower edges corresponding to the shape of the top edges of said outer flaps.

7. The carton of claim 1, in which the guide panel has a section projecting upward beyond its detachable

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connection to the front cover panel and lying inside the front cover panel.

8. The carton of claim 7, in which the guide panel includes a pair of sections formed as integral parts thereof, the first section being detachably connected to the lower edge of the front cover panel and secured to the inner surface of the front wall and the second section being connected to the lower edge of the first section and extending upward above the detachable connection between the first section and the front cover panel.

9. The carton of claim 8, in which the second section of the guide panel is provided with end flaps extending toward the rear and lying outside the flaps at the ends of the top cover panel.

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