

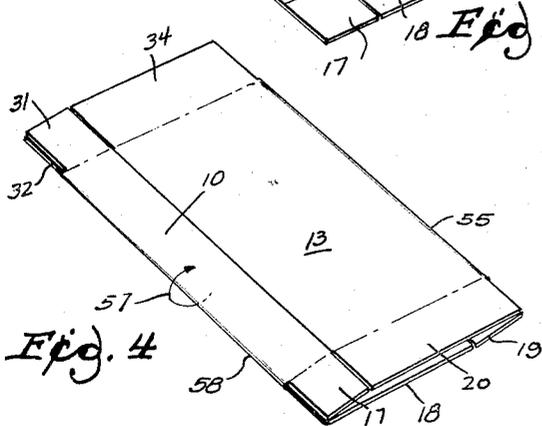
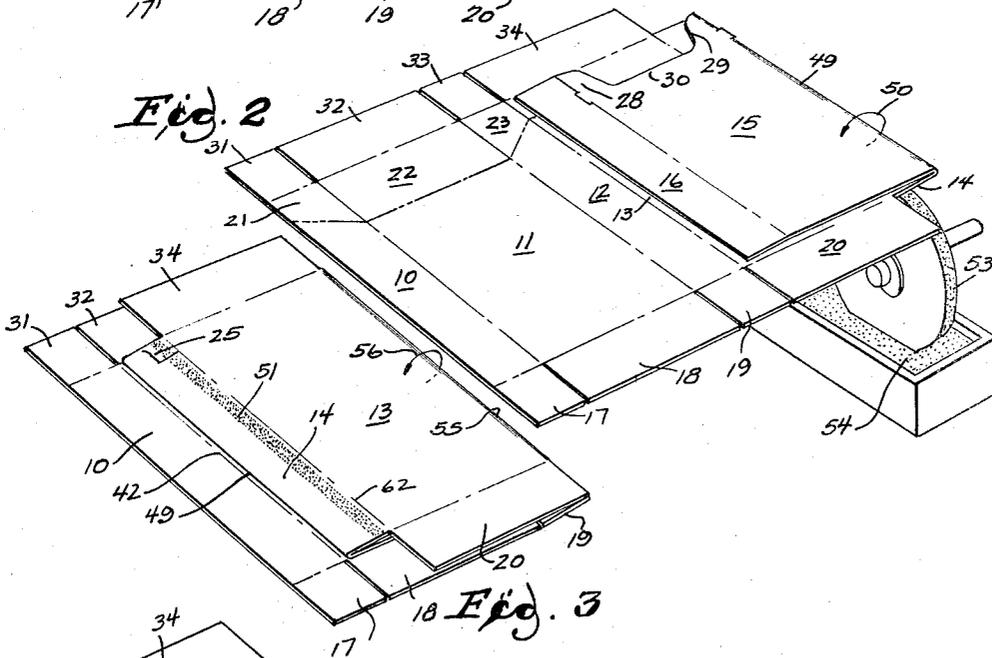
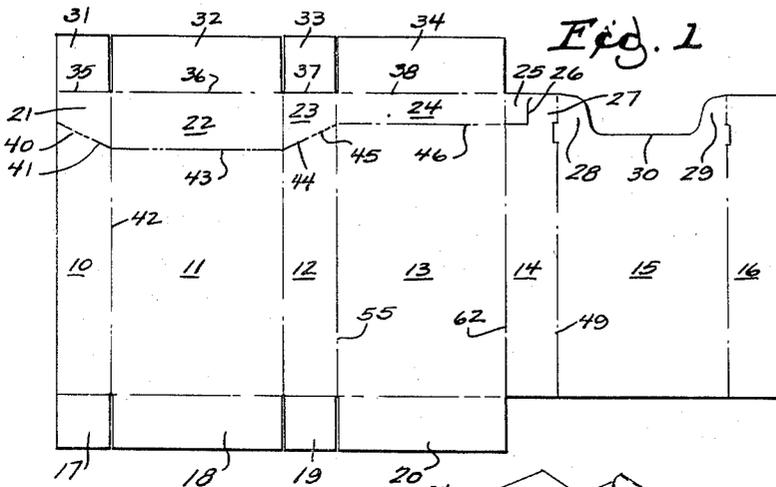
Sept. 6, 1960

F. A. WENZEL
SNAP TOP CARDBOARD BOX

2,951,627

Filed Sept. 10, 1956

2 Sheets-Sheet 1



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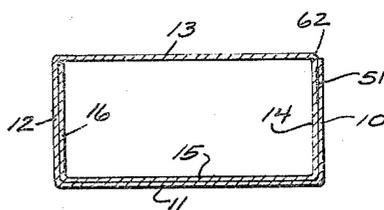
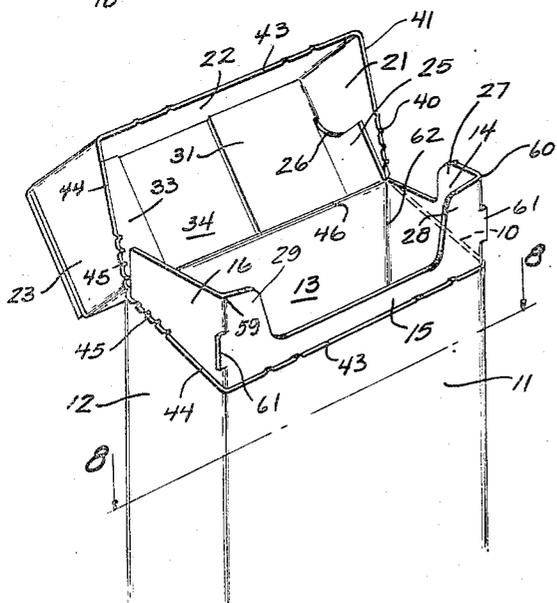
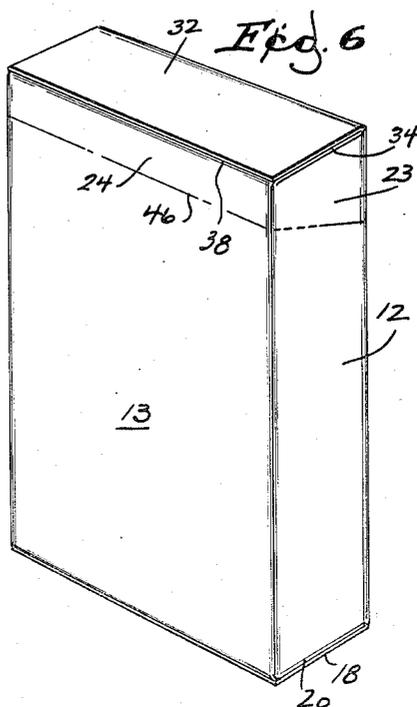
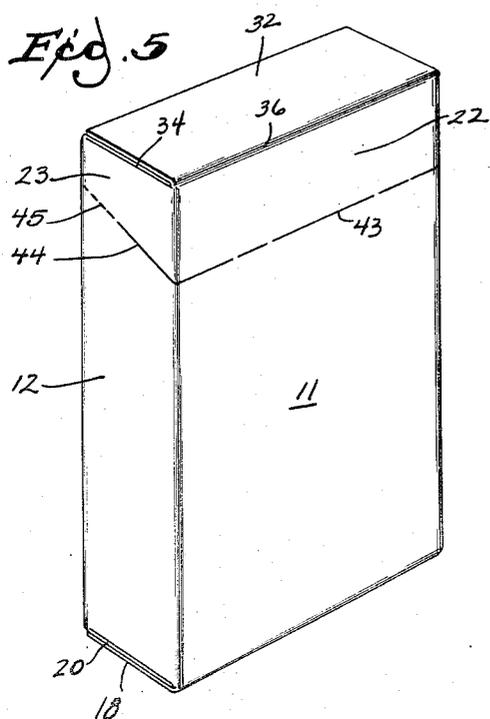
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SNAP TOP CARDBOARD BOX

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2 Sheets-Sheet 2



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1

2,951,627

SNAP TOP CARDBOARD BOX

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Filed Sept. 10, 1956, Ser. No. 608,917

2 Claims. (Cl. 229-44)

This invention relates to a snap top cardboard box. An object of the invention is to provide a box of the character described which can be shipped flat, readily erected, filled and closed in a manner such as to require the breaking of some uncut fiber before the box can be opened, and which can be made of a minimum amount of material.

Boxes of the general type have long been known. In general, they have required the use of a practically complete insert with respect to which the cover is movable to bring about the snap action characteristic of such a box. Due to the fact that a portion of the blank which forms a side wall of the insert is cut across the glue line which unites the end panels of the blank to each other, the tab thus partially severed becomes a part of the cover and makes it unnecessary to provide a separate panel for completion of the cover.

In the drawings:

Fig. 1 is a view in plan of the blank from which the box is made.

Fig. 2 is a view in perspective showing the blank with a preliminary fold and in process of traversing the gluing wheel.

Fig. 3 is a view in perspective showing the blank as folded subsequent to the application of glue.

Fig. 4 is a view in perspective showing the final fold which unites the end panels of the blank.

Fig. 5 is a view in front $\frac{3}{4}$ perspective showing the filled and closed box.

Fig. 6 is a view of the filled and closed box in rear $\frac{3}{4}$ perspective.

Fig. 7 is a fragmentary view in perspective showing the completed box as it appears when opened.

Fig. 8 is a view taken in section on line 8-8 of Fig. 7.

The blank shown in Fig. 1 comprises, in series, a box side panel 10, a box face panel 11, a box side panel 12, a box rear panel 13, a box liner side panel 14, a box front liner panel 15, and a box side liner panel 16.

Flaps 17, 18, 19 and 20 are integrally connected with the bottom ends of panels 10, 11, 12 and 13 respectively.

The box top, which is integral with the rest of the blank, comprises in series a top side panel 21, a top front panel 22, a top side panel 23, a top rear panel 24, and a tab 25 which is cut by score line 26 from the insert side panel 14 which has a laterally adjacent tab 27 projecting upwardly to the full height of insert panel 16. The portions 28 and 29 of the insert front panel 15 extend to this same height, but the top margin of panel 15 is cut or notched downwardly at 30 in the front center of the box.

Closure flaps 31, 32, 33 and 34 are integrally connected upon fold lines 35, 36, 37 and 38 with box panels 21, 22, 23 and 24 respectively. Unless otherwise stated, all of the connections between panels are represented by fold lines, but the various flaps are laterally free of each other as clearly indicated.

The cover panel 21 is only partially severed from box

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panel 10 by a row of perforations at 40 and is completely severed by a slit 41 which extends across the score line 42 and is continued in dot-dash form at 43 across the top of the box front panel 11 to facilitate severance of the cover front panel 22 therefrom. Similarly, the cover side panel 23 is partially severed from box side panel 12 by means of a slit at 44 and a row of perforations at 45. The score line 46 between the box rear panel 13 and the cover rear panel 24 serves as a hinge for the cover after the latter has been separated.

The box blank, being formed as shown in Fig. 1, is prepared for gluing by folding its insert front panel 15 and side panel 16 on score line 49 as shown by the arrow 50 in Fig. 2. The surface of panel 14 which is then lowermost is provided with a glue line which extends the whole length of the panel and of tab 25 as indicated at 51 in Fig. 3. It is immaterial how this glue is applied, the glue wheel 53 and trough 54 being entirely illustrative. It is important that a single gluing operation coats one side of the panel 14, while at the same time coating the corresponding portion of tab 25 which was originally a part of this panel but is severed therefrom by the cut at 26.

Following completion of the gluing operation, box panels 13, 14, 15 and 16 are unitarily folded onto panels 11 and 12 on score line 55 as indicated by the arrow 56 in Fig. 3. Panel 10 is then folded over onto panel 14 as indicated by the arrow 57 in Fig. 4, to complete the knocked down carton, panel 10 adhering to panel 14 by reason of the adhesive at 51.

When the folded and flattened blank shown in Fig. 4 is erected by pressing on its scored corners 55 and 58, it may be filled and the end flaps lapped and adhesively joined in conventional manner to produce the carton shown in Figs. 5 to 8. The cover portion of the carton is still joined to the box thereof upon the perforations 40, slits 43, and score line 46. When the cover is freed from the body of the carton for hinged movement upon the score line 46 by breaking the material of the carton along the perforations 40 and the slits 41 and 43, the cover will open as shown in Fig. 7. The tab 25 has been connected adhesively to the portion 21, thus completing the cover by adhesively attaching the cover side portion 21 to the cover rear portion 24.

Except where the tab 25 was slit from the insert portions of the device, the side panel 14, front panel 15 and side panel 16 of the insert project upwardly well above the newly severed margins of the carton proper to enter the cover and guide it in the course of its hinged movement and provide the desired snap action where the cover front wall portion 22 has to be forced or sprung slightly in passing the upper corners 59, 60 of the insert. To further provide means for frictionally holding the cover in its closed position, the insert panel 15 is provided with square cut laterally projecting tabs 61 which engage frictionally the inner surfaces of the side panel portions 21 and 23 of the cover when the latter is in or near its closed position. The dropped portion provided by the notch 30 in the front wall panel portion 15 of the insert facilitates access to the contents. It is unnecessary in the case of certain uses to which such a carton may be put.

It will be observed that the insert has no adhesive connection with the body portion of the carton except insofar as one side panel of the insert doubles as a glue flap to connect the carton panel in a closed series. This side panel 14 of the insert is integrally joined with the rear panel 13 of the carton on score line 62. In all other respects the dimensions of the insert are such as to adapt it to fit within the carton proper, being maintained in rectangular form shown in Fig. 7 solely by reason of the fact that the carton panels are closed about it as clearly shown

in Fig. 8. Thus, so far as the collapsed carton shown in Fig. 4 is concerned, the single glue line at 51 is all that is required to maintain the assembly. The erected and filled carton requires only such adhesive as is used to secure the top and bottom flaps.

In previous snap action boxes, considerable additional stock has been required to effect closure of the various panels constituting the hinged box top. In the present device, the material required is greatly reduced by reason of the fact that a portion of insert panel 14 is severed at 25 to provide, in the single operation which closes the series of panels, a connection between the side and front panels of the top of the box proper. In other words, so far as the tab 25 is concerned, it is taken from the material of the insert and becomes a part of the carton itself. Not only is material saved but, as will be observed, the tab 25 closes back into the area from which it was cut. If a separate tab were relied upon to provide the necessary connection between the side and back panels of the top, this would lap the insert and create undesirable bulkiness that is avoided through the construction disclosed.

I claim:

1. As a new article of manufacture, a collapsed carton comprising in series connection carton side, front and rear panels and insert side, front and side panels, the panels being defined by fold lines and the several panels constituting the carton having top-constituting portions at their ends defined by partial severance respecting side and front panels and by a fold line respecting the rear panel, the material of the rear panel extending upon a fold line integrally into a tab at least partially severed from the first insert side panel, a single line of adhesive extending vertically of said first insert panel and the tab at least partially severed therefrom and connecting the first insert panel to the first carton side panel at one end of said series of panels, the front and both side panels of the insert lying within the front and corresponding sides of the carton.

2. A box comprising in integral series a box side panel, a box front panel, a second box side panel, a box rear panel, an insert side panel, an insert front panel and an insert side panel, the first box side panel being in adhesive connection with the first insert side panel and the insert side and front panels being disposed within the box side and front panel, the box rear panel being of a height approximately corresponding with the height of the insert panels and having a portion defined by a fold line to constitute a rear cover panel, the box side and front panels corresponding with the cover panel portions at least partially severed from the box front and side panels and integral with the box rear cover panel portion aforesaid, means closing the cover and the bottom of the box, the cover portions of the box panels being hingeable on the fold line for movement between positions in which the insert is covered and exposed respectively, an initially integral portion of the first insert side panel constituting a tab connected with said rear cover panel portion and with a lapping side panel portion of the cover to provide connection therebetween, a single straight line of adhesive along the vertically aligned box and cover first side panels aforesaid and adjacent their fold line connection with respective rear box and cover panels providing the said adhesive connection of the first box side panel to the first insert side panel and the said adhesive connection of said tab to said lapping side panel portion of the cover.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,951,627

September 6, 1960

Frederick A. Wenzel

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 68, for "reprsented" read -- represented --;
column 3, line 37, after "panels", first occurrence, insert
-- and said tab to a corresponding side panel of the cover --.

Signed and sealed this 4th day of April 1961.

(SEAL)

Attest: ERNEST W. SWIDER

~~XXXXXXXXXX~~

Attesting Officer

ARTHUR W. CROCKER
Acting Commissioner of Patents