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SELF-ERECTING CARTON

Filed Sept 20, 1947

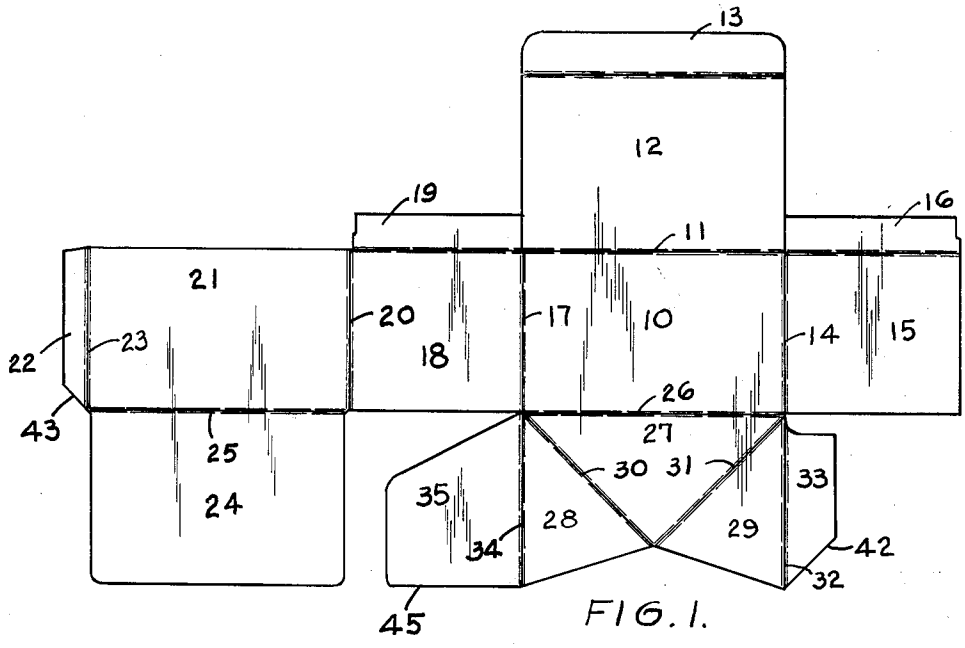


FIG. 1.

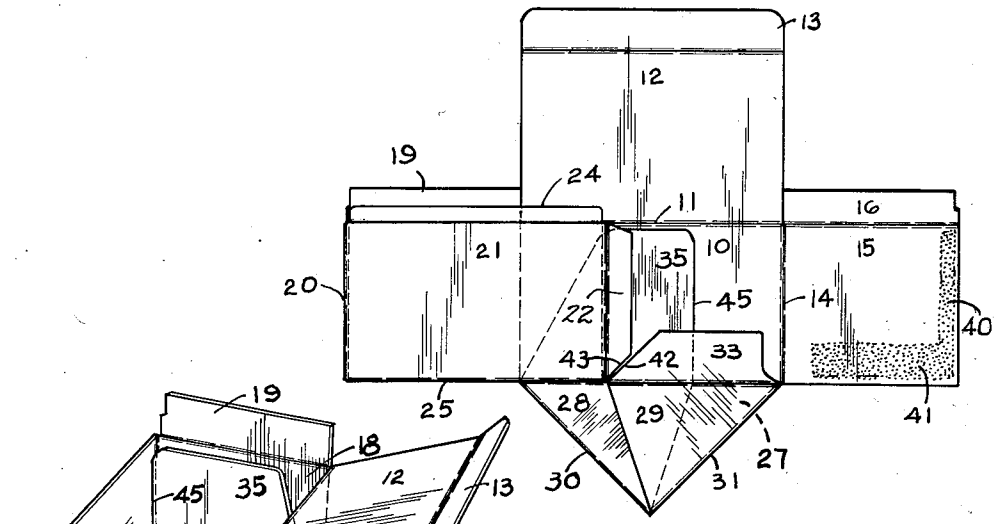


FIG. 2.

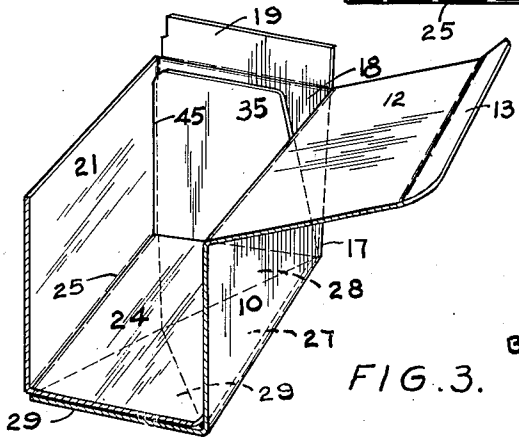


FIG. 3.

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SELF-ERECTING CARTON

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4 Claims. (Cl. 229—41)

1

This invention relates to improvements in so-called "self-erecting cartons." The present application is a companion to my Patent 2,472,698 entitled "Knock-Down Cartons," granted June 7, 1949.

As in the case of the companion application above identified, it is an object of the invention to provide a carton structure which is easily folded and glued and can be shipped flat and erected with unusual facility to provide a strong and useful carton.

The difference between this embodiment of my invention and that disclosed in the companion application above identified relates largely to the manner in which support is provided for the collapsible bottom panels. The present device is particularly adapted for manufacture on a so-called "outfolding" machine.

In the drawings:

Fig. 1 is a plan view of a carton blank embodying the invention.

Fig. 2 is a plan view showing the carton blank folded and glued for final assembly.

Fig. 3 is a view in perspective showing in section the completely erected but unclosed carton.

The blank comprises front, back and side wall panels and cover and bottom panels which may be connected together in a variety of ways, but are preferably connected serially in the order illustrated to facilitate manufacture without waste of material. There is a back panel at 10 to which is hingedly connected on score line 11 a cover panel 12 and a tucking flap 13. Upon the score line 14, an end panel 15 with the cover flap 16 is hingedly connected to the back panel 10. Upon a score line 17, the end panel 18 is hingedly connected with the back panel 10. This end panel may also be provided with a cover flap at 19.

Upon the score line 20, the front panel 21 is hingedly connected with end panel 18. A gluing flap 22 is hingedly connected with the front panel 21 on score line 23. The false bottom 24 is hingedly connected with the front panel 21 upon score line 25.

Upon score line 26, the triangular bottom panel 27 is hingedly connected with the lower margin of the back panel 10. This bottom panel is marginally defined by score lines 30 and 31, whereby the complementary triangular panels 28 and 29 are hingedly connected with the triangular bottom panel 27. The score lines 30 and 31 extend diagonally at 45 degrees from the ends of score line 26 at the corners of the rear panel 10.

The triangular bottom panel 29 is provided at an otherwise free margin with a hinged connection comprising score line 32 whereby the gluing flap 33 is connected to the bottom panel. Upon score line 34, the supporting panel 35 is hingedly connected with the triangular bottom panel 28.

2

It will be observed that the gluing flap 33 has a mitered corner at 42, and the gluing flap 22 has a mitered corner at 43.

Glue is applied at 40 and 41 along the side and bottom margins of the end flap 15 as indicated in Fig. 2. The blank is then folded and glued as follows:

The false bottom 24 is first folded onto the inner face of the front wall panel 21. The panels 35 and 28 are now folded upwardly on score line 30 onto the face of panel 10. Panel 29 now folds onto panel 27, and in this proportion of carton, it also overlaps a portion of panel 28. Glue flap 33 is now on, and facing outward of, back panel 10 ready for panel 15 which will have glue already applied. The front wall 21 and the false bottom 24, as previously folded upon it, are now together folded upon score line 20 to bring the mitered corner 43 of gluing flap 22 into proximity to the similarly mitered corner 42 of gluing flap 33. Finally, the end wall panel 15 is folded on the score line 14 to bring its glued areas 40 and 41 into contact with the faces of gluing flaps 22 and 33 respectively, thus completing the assembly.

The carton is erected by pressure at its diagonally opposite corners in the manner disclosed in the companion application above identified, as will readily be understood by those skilled in the art. From the flat form in which it is completed by the gluing operation last described, the carton is expanded to the form shown in Fig. 3, the several bottom panels moving into a common horizontal plane, and a supporting panel 35 moving into face contact with end panel 18 with its free margin 45 engaged in the corner fold line 20 between the end panel 18 and the front panel 21. When the false bottom 24 is moved downwardly to horizontal position upon its score line hinged connection at 25 with front panel 21, its end margin abuts the supporting panel 35 to hold the supporting panel in the indicated position. Since there is a fixed distance between the front and rear walls 10 and 21 respectively, the supporting panel cannot pivot outwardly with respect to the bottom of the rear wall 10, as would be required if the bottom were to collapse. Accordingly, the engagement of the front margin 45 of the supporting panel 35 with the front wall 21 provides the needed support for the bottom at this end of the carton. No adhesive is required, there-

fore, between the supporting panel **35** and the end wall panel **18** where this construction is used.

As in the device disclosed in the companion application above identified, the carton herein described may be erected with the utmost facility and with a minimum of movements on the part of the operator. As in the case of the device of my companion application, this carton may be collapsed with equal facility by pushing upwardly on the false bottom **24** (which is accessible between the bottom panels **28** and **29** and the front wall panel **21**). As soon as the bottom panel is folded upwardly upon the front wall panel, pressure applied to the corners represented by fold lines **17** and **23** will easily and immediately collapse the carton to its original flat condition.

I claim:

1. A carton blank comprising in series connection four wall panels and score lines providing hinge joints therebetween, a folding bottom comprising a plurality of triangular panels, one of which has a score line providing a hinged connection between it and one of the wall panels, another of the triangular bottom panels being provided with a supporting panel approximately equal in width to a wall panel contiguous to that first mentioned, another wall panel opposite to the wall panel first mentioned being provided with a false bottom having a score line providing a hinged connection upon which the false bottom is movable from a folded position to a position overlying the triangular bottom panels and marginally abutting the supporting panel.

2. In a carton, the combination with front, rear and end walls having corner hinged connections, of a first triangular bottom panel connected hingedly with the rear wall, second and third bottom panels hingedly connected with the other sides of the first triangular bottom panel and having substantially parallel opposite margins in proximity to the end walls, a gluing tab hingedly connecting the second triangular bottom panel with one of the end walls, and a supporting tab hingedly connected with the third triangular bottom panel adjacent the other end wall, said supporting tab being approximately equal in width to said other end wall and having a free margin substantially co-inciding in the erected carton with a vertical corner of the carton at the side of the last mentioned end wall and in abutment with the carton front wall.

3. In a carton, the combination with front, rear and end walls having corner hinged connections, of a first triangular bottom panel connected hingedly with the rear wall, second and

third bottom panels hingedly connected with the other sides of the first triangular bottom panel and having substantially parallel opposite margins in proximity to the end walls, a gluing tab hingedly connecting the second triangular bottom panel with one of the end walls, and a supporting tab hingedly connected with the third triangular bottom panel adjacent the other end wall, said supporting tab being approximately equal in width to said other end wall and having a free margin substantially co-inciding in the erected carton with a vertical corner of the carton at the side of the last mentioned end wall and in abutment with the carton front wall, said front wall being provided with a false bottom hingedly connected with its lower margin and movable between the supporting tab and the gluing tab aforesaid upon the triangular bottom panels and collapsible from that position into substantial face contact with the front wall.

4. A blank of the character described comprising the combination with contiguous wall panels, of a folding bottom comprising three triangular bottom panels, one of which is joined to one of said wall panels, and the other two being joined to the first mentioned bottom panel, all of said bottom panels being located below said last mentioned wall panel and within the confines of the side edges thereof, and a supporting panel hingedly connected with one of said other two bottom panels and having a free margin projecting free of a second wall panel contiguous to the first mentioned wall panel but in proximity to said second mentioned wall panel; the supporting panel being at least approximately equal in height to said second mentioned wall panel and equal in width thereto and adapted for substantially face contact therewith in the erected carton, said supporting panel being provided with a margin adapted substantially to coincide with a vertical margin of said last mentioned wall panel on the erected carton.

ANTHONY G. EDTMILLER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
641,500	Davidson	Jan. 16, 1900
732,071	Hartrampf	June 30, 1903
1,375,489	Davis	Apr. 19, 1921
1,926,365	Bergstein	Sept. 12. 1933
2,018,171	Himes	Oct. 22, 1935
2,348,378	Goodyear	May 9, 1944