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COLLAPSIBLE BOX STRUCTURE

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FIG. 1

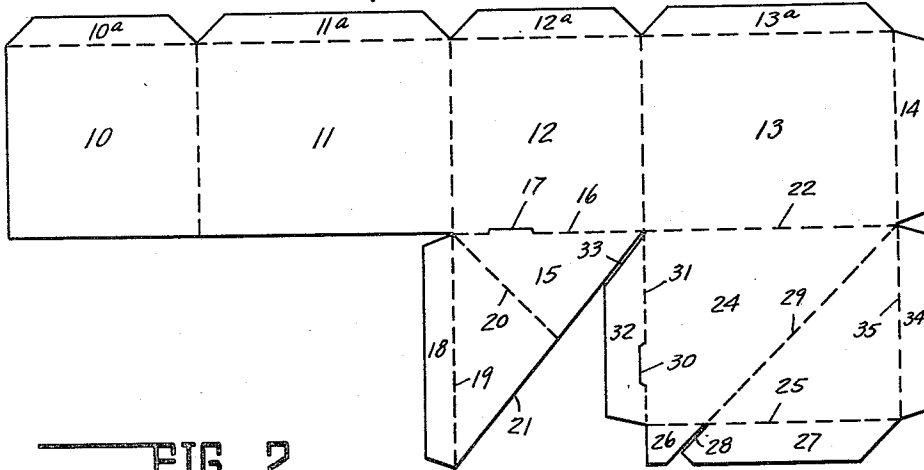


FIG. 2

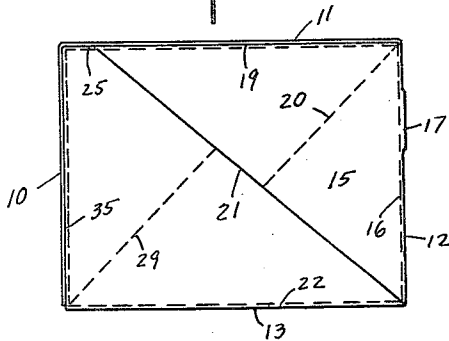


FIG. 3

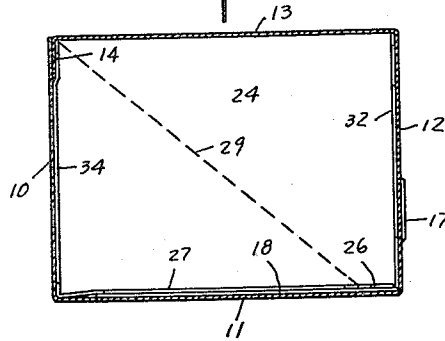
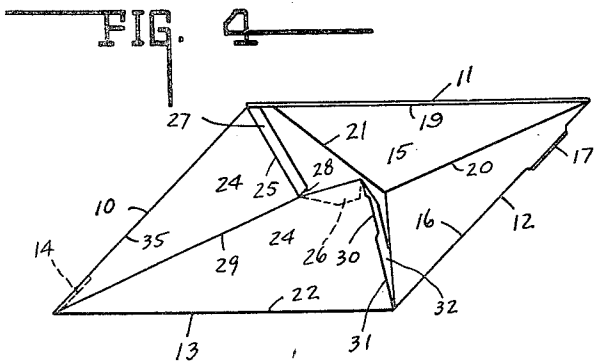


FIG. 4



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COLLAPSIBLE BOX STRUCTURE

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4 Claims. (Cl. 229—41)

This invention relates to a paper board box structure that may be closed by a separable lid or by a lid hingedly connected thereto, or by an interlocking-like or cover arrangement.

This invention, accordingly is directed to the box proper and one capable of being fabricated and shipped flat or in the knockdown and capable of ready erection when to be utilized.

The chief feature of this invention resides in the bottom structure of a box having four sequentially connected side walls, which bottom comprises two biased flaps integral with two of the walls and each secured to another wall.

Herein the flaps are integral with two adjacent walls and coextensive therewith in width and are adhesively secured to the other walls. The flaps may, however, be integral with opposite walls.

These flaps are diagonally or angularly creased so that they "break" or fold inwardly into the box permitting of its collapse for knockdown positioning. When erected, these flaps lap each other with a biased lap arrangement.

Herein is illustrated a rectangular box in preference to a square box because the former illustrates the bias lap other than of diagonal type, which occurs in the square box.

Other features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing

Fig. 1 is a developed plan view of a blank illustrating a rectangular embodiment of the invention.

Fig. 2 is a bottom plan view of the erected box.

Fig. 3 is a horizontal section taken a slight distance above the bottom and looking into the box.

Fig. 4 is a perspective view of the bottom of the box partially collapsed position.

In the drawing 10 and 12 indicate two end walls and 11 and 13 two side walls with flap 14 on one side edge of the wall 13, all walls being sequentially connected together. When the side edge of wall 10 is adhesively secured to flap 14, the walls are connected together and can be collapsed as shown in Fig. 4. Each wall has at its upper edge, if desired, flaps designated by the corresponding numeral of its supporting wall together with the subscript *a*.

Herein the bottom forming flaps are integral with walls 12 and 13. One flap 15 is triangular in shape with its base coextensive with wall 12 and hingedly connected thereto as at 16. Crease 16 may be interrupted and include slot 17 in the

side wall and at the crease line. The side of the triangular flap is provided with flap 18 hingedly connected thereto by crease 19. A median score 20 to the hypotenuse 21 completes this bottom forming flap.

Coextensive with wall 13 and hingedly connected thereto as at 22 is a flap 24 having a transverse dimension equal to that of base 16 of flap 15. This flap 24 includes along the edge 25 parallel to crease 22 the flaps 26 and 27. Slit 28 separates these flaps. Bottom 24 includes the 45° crease 29 that also "breaks" upwardly like crease 20.

The adjacent side edge of bottom 24 includes tongue 30 adapted to seat and lock in slot 17. It also has hingedly connected thereto as at 31 the flap 32. Flap 15 and flap 32 are separated by slit 33. The remote side edge of bottom 24 includes flap 34 hingedly connected thereto as at 35.

The flaps 18 and 34 are adhesively secured to the adjacent walls as illustrated in Fig. 3. Then the bottom forming flaps are folded or creased inwardly, see Fig. 4, and the box collapsed for knock-down shipment.

For erection the flattened structure is opened and the several walls squared with respect to each other. This draws down the creased bottom flaps. Then pressure is applied thereto until tongue 30 seats and locks in slot 17. The box is then locked in erected relation and flaps 32, 26 and 27 lie parallel to the adjacent walls and within the box.

The resulting structure is a collapsible box with a foldable reenforced bottom.

While the invention has been illustrated and described in great detail in the drawing and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. A rectangular collapsible box including four sequentially connected walls, a bottom flap of box area hinged to one wall, a triangular bottom flap hinged to an immediately adjacent wall and lapping and reenforcing the bottom flap when the box is erected, the triangular flap having its hypotenuse edge directed away from the bottom flap, each flap including a biased fold or crease therein directed from one corner of the flap where connected to the wall, to the opposite side of such blank, the bias crease of the bottom being sub-

stantially parallel to the hypotenuse edge and the biased creases being directed towards each other when extended from the wall-flap connection corners.

2. A box as defined by claim 1 wherein the bottom flap includes an extension flap adjacent the triangular flap and separated therefrom by a slot and arranged for connection to the wall to which the triangular flap is hingedly connected.

3. A box as defined by claim 1 wherein the bottom flap, opposite its wall hinge connection, includes a flap extension for opposite wall connection, said flap extension having a slot coextensive

therewith and in alignment with the bottom flap bias fold.

4. A box as defined by claim 1 wherein the bottom flap, opposite its wall hinge connection, includes a flap extension for opposite wall connection, said flap extension having a slot coextensive therewith and in alignment with the bottom flap bias fold, and the bottom flap includes a second extension flap, the latter being adjacent the triangular flap and separated therefrom by a slot and arranged for connection to the wall to which the triangular flap is hingedly connected.

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