May 4, 1954 K. T. BUTTERY 2,677,494

COLLAPSIBLE AUTOMATIC SETUP CARTON

Filed Oct. 11, 1950 2 Sheets-Sheet 1

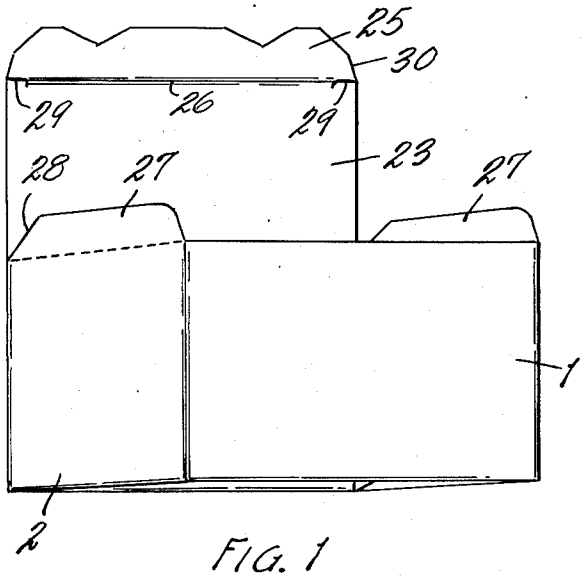


FIG. 1

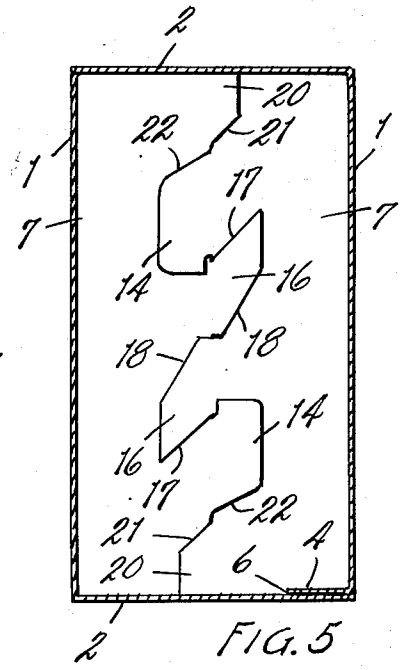


FIG. 5

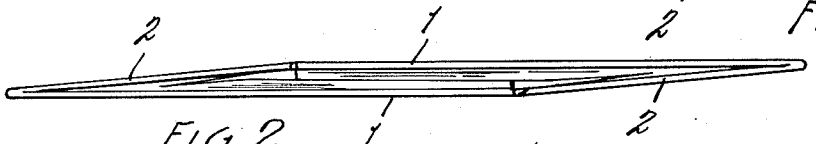


FIG. 2

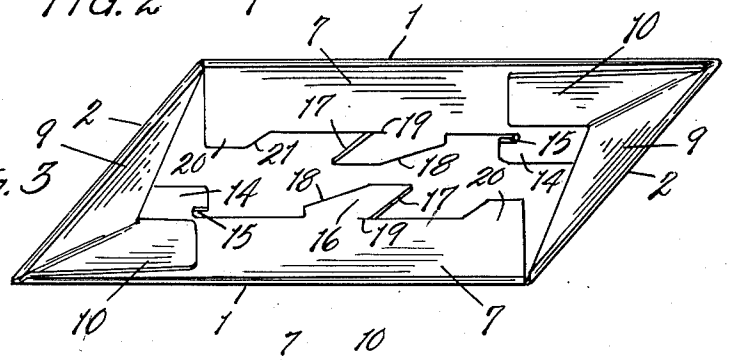


FIG. 3

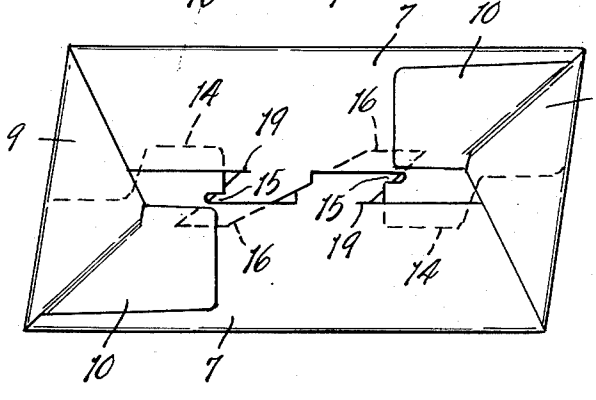


FIG. 4

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COLLAPSIBLE AUTOMATIC SETUP CARTON

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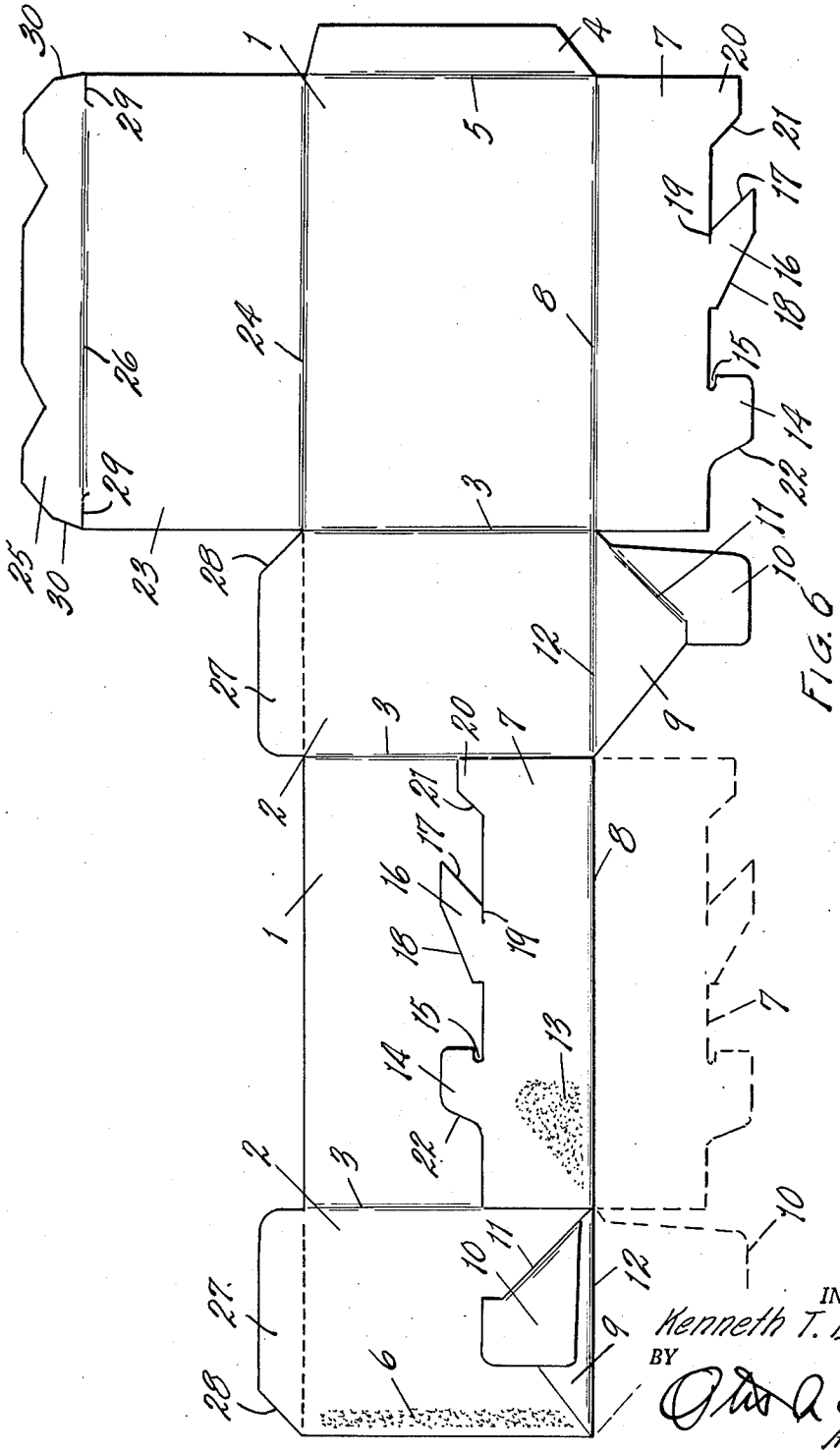


FIG. 6

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COLLAPSIBLE AUTOMATIC SETUP CARTON

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3 Claims. (Cl. 229—39)

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This invention relates to improvements in collapsible automatic setup cartons.

The main objects of this invention are:

First, to provide a collapsible carton of the automatic erecting type in which the bottom parts are interlocked and capable of sustaining a substantial load when in erected position.

Second, to provide a collapsible carton which may be automatically erected by pressure on opposite ends of the collapsed carton and the parts positively moved to erected position with the bottom parts in interlocking relationship to provide a stable bottom and support the walls against racking stresses.

Third, to provide a structure having these advantages which may be economically produced from an integral blank and the parts secured together and collapsed into a compact form to be erected as indicated.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a front perspective view of the erected carton.

Fig. 2 is a bottom view of the carton in collapsed form.

Fig. 3 is a bottom view illustrating the parts at one stage or point in the erection of the carton.

Fig. 4 is a bottom view illustrating another stage in the erection of the carton.

Fig. 5 is a horizontal section of the completely erected carton.

Fig. 6 is a plan view of the blank, one side and one end wall being shown in infolded position by full lines and in extended position by dotted lines, adhesive being indicated at two points.

The carton illustrated is elongated but it will be understood that my invention may be embodied in cartons of square section and that the use of the terms side and end members in the specification and claims is for convenience in describing and designating the parts.

The embodiment of my invention illustrated comprises side walls 1—1 and end walls 2—2 hingedly joined as by means of the hinging scores 3. The sealing flap 4 is aligned with the end walls and is hingedly joined to the end of one side wall at 5 and adhesively secured to the other end wall as indicated at 6. This results in a tubular collapsible structure as shown in Fig. 2

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and one capable of being swung to erected position by pressure on the ends of the collapsed structure. The side bottom members 7—7 are hingedly secured to the bottom edges of the side walls by the hinging scores 8. The side bottom members are of substantially the same length as the side walls.

The end bottom members 9—9 are triangular in shape or at least have one inclined edge to which the sealing flap 10 is hingedly connected by the score 11. The end bottom members are hingedly connected to the end walls by the hinging scores 12. The sealing or hinging flaps 10 of the end bottom members are adhesively secured at 13 to the undersides of the side bottom members. Each side bottom member 7 is provided with a keeper tab 14, the keeper tabs having undercuts 15 therein. The keeper tabs face oppositely when the blank is folded with the sealing flap 4 in secured position as in Fig. 2 (see also Figs. 3 and 4). Each bottom member is provided with an inclined locking tab 16 adapted to interlock with the keeper tab of the other side bottom member. The inclined edges 17 of the locking tabs serve to guide the locking tabs and keeper tabs into interlocking engagement and the inclined edges 18 of the locking tabs have sliding camming engagement as the bottom parts are swung to erected position. The locking tabs have slits 19 at the bases thereof which are adapted to receive edge portions of the bottoms of the keeper recesses 15 insuring effective interlocking engagement.

The side bottom members are further provided with supporting tabs 20 on their diagonally opposite ends viewed with the carton in collapsed or erected position, these being adapted to overlie the opposite bottom side member as shown in Fig. 5. The edges 21 of the supporting tabs are inclined to cammingly engage the rear edges 22 of the keeper tabs 14 as the parts approach their final erected position thereby facilitating the swinging of the bottom members to fully erected position. The length of the side bottom members being substantially that of the length of the side wall members, a carton is effectively supported in its erected position. This interlocking engagement of the side bottom members and the connection for the end bottom members to the side bottom members very effectively support the erected bottom parts so that the bottom is capable of supporting substantial weight or load and at the same time the carton may be collapsed as shown in Fig. 2 and quickly set up

merely by pressing on opposed end edges of the collapsed carton.

In the embodiment illustrated, one of the side walls is provided with a cover **23** hingedly connected thereto at **24**, the cover being provided with a tucking flap **25** hingedly connected thereto at **26**. The end walls are provided with top flaps **27** beveled at the rear ends as at **28**. The cover has slits **29** disposed in alignment with its hinging score **26** so that the end portion **30** of the cover snaps under the flaps **27** when the tucking flap is closed.

I have illustrated and described my improvements in a highly practical embodiment thereof and it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A collapsible carton formed of an integral blank comprising hingedly connected side and end walls, opposed side bottom members hingedly connected to the side walls and of a length substantially corresponding to that of the side walls, and end bottom members hingedly connected to the end walls and having inclined edges provided with hinged attaching flaps, the attaching flap of one end bottom member being secured to the underside of one side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member and the attaching flap of the other end bottom member being secured to the underside of the other side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the said side bottom members having oppositely facing undercut keeper tabs, and oppositely inclined locking tabs on their swinging edges adapted to automatically interlock with the keeper tabs of the other side bottom member when the walls and bottom members are erected, said locking tabs having slits at the bottoms thereof adapted to receive edge portions of the keeper tabs at the bottoms of their undercuts, said side bottom members also having supporting tabs on their swinging edges provided with inclined inner edges, said keeper tabs having inclined outer edges with which the inclined edges of the supporting tabs coact as the bottom members are swung to erected position, said supporting tabs lappingly engaging opposed side bottom members above said end bottom members.

2. A collapsible carton formed of an integral blank comprising hingedly connected side and end walls, opposed side bottom members hingedly connected to the side walls and of a length substantially corresponding to that of the side walls, and end bottom members hingedly connected to the end walls and having inclined edges provided with hinged attaching flaps, the attaching flap of one end bottom member being secured to the underside of one side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member and the attaching flap of the other end bottom member being secured to the underside of the other side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the said side bottom members having oppositely facing undercut keeper tabs, and oppositely inclined locking tabs on their swinging edges adapted to automatically interlock with the keeper tabs of the other side bottom member when the walls and bottom members are erected, said keeper tabs having inclined outer edges with which the inclined edges of the supporting tabs coact as the bottom members are swung to erected position, said side bottom members also having supporting tabs on their swinging edges provided with inclined inner edges, said keeper tabs having inclined outer edges with which the inclined edges of the supporting tabs coact as the bottom members are swung to erected position, said supporting tabs lappingly engaging opposed side bottom members above said end bottom members.

3. A collapsible carton formed of an integral blank comprising hingedly connected side and end walls, opposed side bottom members hingedly connected to the side walls and of a length substantially corresponding to that of the side walls, and end bottom members hingedly connected to the end walls and having inclined edges provided with hinged attaching flaps, the attaching flap of one end bottom member being secured to the underside of one side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member and the attaching flap of the other end bottom member being secured to the underside of the other side bottom member on the portion thereof which is longitudinally inwardly thereof from the hinge connection of the attaching flap to the end bottom member whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the said side bottom members having oppositely facing undercut keeper tabs, and oppositely inclined locking tabs on their swinging edges adapted to automatically interlock with the keeper tabs of the other side bottom member when the walls and bottom members are erected, the adjacent edges of said locking tabs being inclined oppositely to provide camming engagement as the bottom members are swung to erected position, said side bottom members also having supporting tabs on their swinging edges provided with inclined inner edges, said keeper tabs having inclined outer edges with which the inclined edges of the supporting tabs coact as the bottom members are swung to erected position, said supporting tabs lappingly engaging opposed side bottom members above said end bottom members.

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