Nov. 17, 1953 K. T. BUTTERY 2,659,526

AUTOMATIC SETUP CARTON

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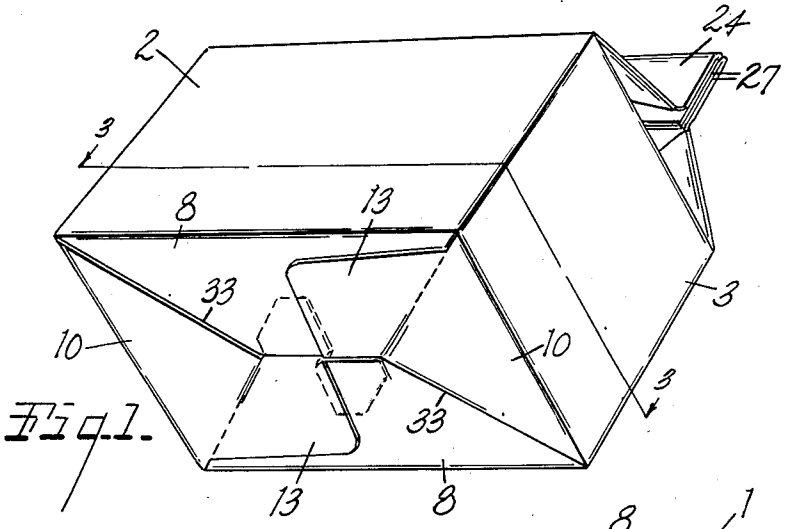



Fig. 1.

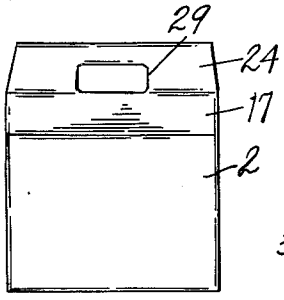



Fig. 2.

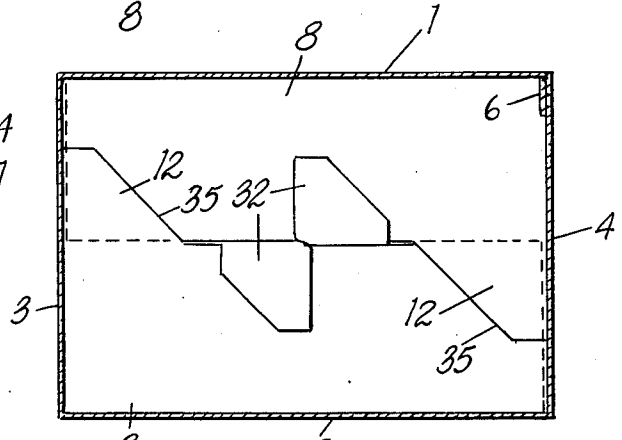



Fig. 3.

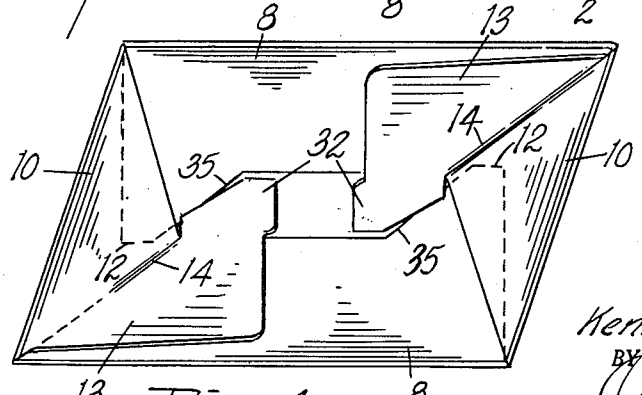



Fig. 4.

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AUTOMATIC SETUP CARTON

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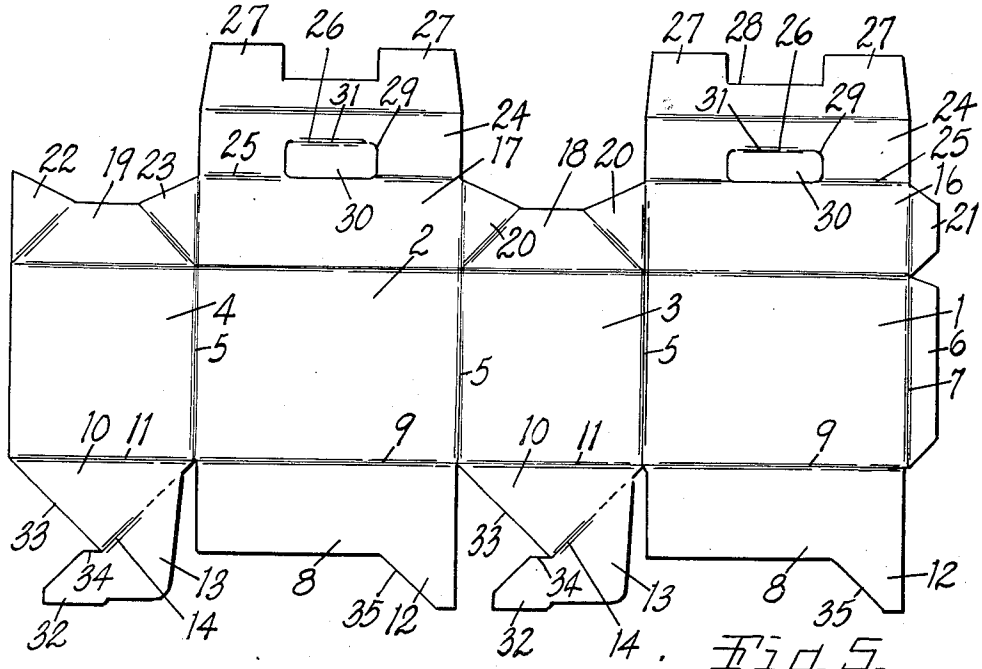



Fig. 5.

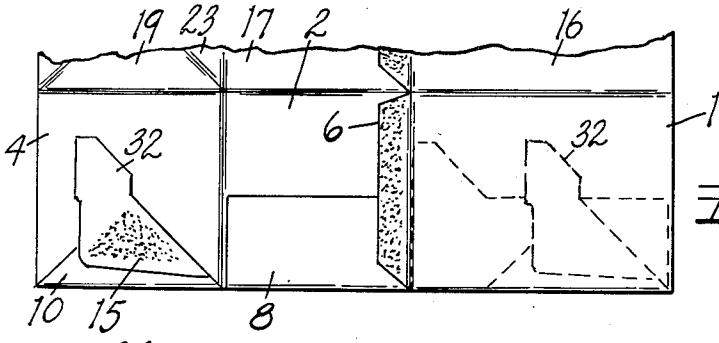



Fig. 6.

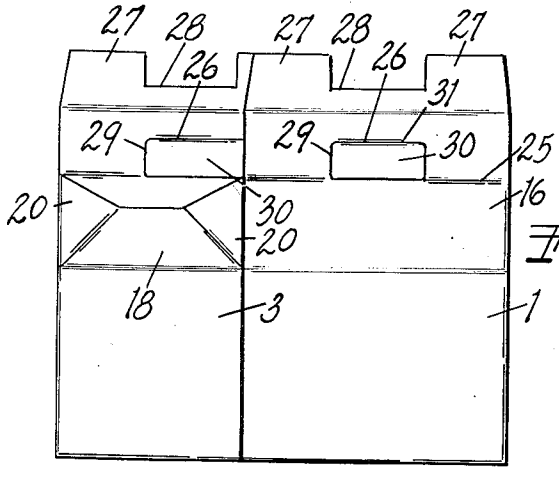



Fig. 7.

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2,659,526

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## AUTOMATIC SETUP CARTON

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Application May 19, 1951, Serial No. 227,203

7 Claims. (Cl. 229—39)

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This invention relates to improvements in 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 members or parts are automatically swung to erected position on the erecting of the side walls and are capable of sustaining a substantial load when erected.

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

Third, to provide a structure having these advantages which may be formed of a single blank.

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 bottom perspective view of a carton embodying my invention in erected position.

Fig. 2 is a side elevational view.

Fig. 3 is a horizontal section on a line corresponding to line 3—3 of Fig. 1.

Fig. 4 is a bottom view illustrating the carton in partially erected position.

Fig. 5 is a plan view of the blank in fully extended position or in the flat.

Fig. 6 is a fragmentary view of the carton partially folded with certain of the adhesive areas indicated.

Fig. 7 is a side view of the collapsed carton of the embodiment of my invention of Figs. 1 to 7, inclusive.

In the specification and certain of the claims, I use the terms "side" and "end members" but it will be understood that they are terms of convenience in describing and designating the parts and not terms of limitation insofar as side and end are apt as applied to an elongated carton.

The embodiment of my invention illustrated comprises side walls 1 and 2 and end walls 3 and 4 which are joined by hinging scores 5. The glue flap 6 is hingedly connected at 7 to the side wall 1 and is adhesively secured to the wall 4 at the opposite end of the blank thus providing a tubular collapsible body. The side walls 1 and 2 are provided with bottom members 8 hingedly connected thereto at 9 while the end walls 3 and 4 are provided with bottom members 10 hingedly

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connected thereto at 11, the hinging being provided by scores. The opposed bottom members 8 are provided with tabs 12 projecting at one end thereof, these tabs overlapping the other bottom member when the carton is in erected position as shown in Fig. 3.

The bottom members 10 are provided with coupling or attaching flaps 13 secured thereto along a diagonal hinging line 14. One of these attaching flaps is adhesively secured to the under side of one of the bottom members 8 and the other to the under side of the other bottom member 8, the adhesive areas on the attaching flaps being indicated at 15 in Fig. 6.

In the embodiment illustrated, the side walls 1 and 2 of the carton are provided with opposed top or closure members 16 and 17, respectively, while the end walls 3 and 4 are provided with top members 18 and 19, respectively, the top members 18 are connected by the hinged triangular corner members 20 to the adjacent ends of the top members 16 and 17. The top member 16 is provided with a glue flap 21 which is adhesively secured to the corner member 22 of the top member 19, the top member 19 being secured by the corner member 23 to the adjacent end of the top member 17. The top members 16 and 17 are provided with handle extensions 24 hingedly secured thereto at 25 and provided with hand openings 26.

The flap extensions 27 are notched at 28 to register with the hand openings 26 when the handle members 24 are brought into side by side relation with their extensions 27 turned inwardly in side by side relation as shown in Fig. 1. This provides a relatively strong handle even when the carton is formed of light stock. The hand openings are defined by slits 29 leaving flaps 30 hinged at 31 to be turned upwardly providing a relatively wide and smooth edge for grasping.

With the glue flap 6 secured to the wall 4 and the bottom flaps 13 secured to the bottom members 8 as described, the carton may be collapsed as shown in Fig. 7. When it is desired to erect the carton, it is merely necessary to press on the opposed edges of the collapsed carton and the parts are automatically swung to erected position as shown in Figs. 1 and 2, Fig. 4 illustrating an intermediate step in the erecting.

The attaching flaps 13 are provided with laterally projecting tongues 32 which project beyond the edges 33 of the bottom members 10 to provide interlocking edges 34 which interlock with each other as is shown in Figs. 1 and 3 of the drawing with the tongues projecting on the inner sides of the bottom members 8 to coact with the

tabs 12 in supporting the bottom in erected position. The tabs 12 have inclined inner edges 35 with which the rear edges of the attaching flaps 13 coact in guiding the tongues into overlapping relation to the bottom members 8 and into interlocking relation to each other.

The cover members 16, 17, 18 and 19 of the embodiment shown in Figs. 1 to 7, inclusive, are connected by the foldable corner members and provide an effective closure and at the same time the carton is provided with a handle for convenience in carrying.

I have illustrated and described a practical embodiment of my invention and have not illustrated others as 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 provided with supporting tabs on their opposite ends overlapping the opposed side member when the carton is erected, the inner edges of said tabs being inclined, 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 under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues which are positioned on the inner side of the bottom members and the inner edges of which have interlocking engagement with each other when the carton is in fully erected position, the inclined edges of said tabs having camming engagement with said tongues to facilitate the guiding thereof to erected position with the tongues on the inner sides of the side 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 provided with supporting tabs on their opposite ends overlapping the opposed side member when the carton is erected, 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 under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues which are positioned on the inner side of the bottom members and the inner edges of which have interlocking engagement with each other when the carton is in fully erected position.

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 of a width approximately one half that of the erected carton so that the bottom members complement each other and lie edge to edge when the carton is erected, 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 under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues which are positioned on the inner sides of the side bottom members when the carton is erected and the inner edges of which have interlocking engagement with each other when the carton is in fully erected position.

4. A collapsible carton formed of an interval 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 provided with supporting tabs on their opposite ends overlapping the opposed side member when the carton is erected, 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 under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues which have interlocking engagement with each other and are disposed on the inner side of the side bottom members when the carton is in fully erected position.

5. 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 provided with supporting tabs on their opposite ends overlapping the opposed side member when the carton is erected, the inner edges of said tabs being inclined, and end bottom members hingedly connected to the end walls and having inclined edges provided with hinged attaching flaps, the attaching flap on one end bottom member being secured to the under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues, the inner edges of which have interlocking engagement with each other when the carton is in fully erected position, the inclined edges of said tabs having camming engagement with said tongues to facilitate the guiding thereof

to erected position with the tongues on the inner sides of the side bottom members.

6. 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 provided with supporting tabs on their opposite ends overlapping the opposed side member when the carton is erected, 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 under side of one side bottom member at one end thereof and the attaching flap of the other end bottom member being secured to the under side of the other side bottom member at the opposite end thereof whereby the bottom members are automatically swung to erected position when the walls of the carton are swung from collapsed to erected position, the attaching flaps having laterally projecting tongues, the inner edges of which have interlocking engagement with each other when the carton is in fully erected position with the tongues on the inner sides of the side bottom members.

7. A collapsible carton comprising walls



hingedly connected to provide a collapsible tubular body, each of the walls having a bottom member hingedly connected to the lower edge thereof, one opposed pair of bottom members being provided with supporting tabs at their opposite ends overlapping the other opposed bottom member of the pair when the carton is erected, the other opposed pair of bottom members having inclined edges with attaching flaps hingedly connected thereto, one attaching flap being secured to the under side of one of said first mentioned pair of bottom members and the other to the under side of the other of said first mentioned pair, said attaching flaps having laterally projecting tongues at their outer ends having interlocking engagement and which are positioned on the inner side of the first mentioned pair of bottom members when the carton is erected to coact with said supporting tabs in resisting vertical outward stress on the bottom members.

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**References Cited** in the file of this patent

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,388,190 | Smart | Oct. 30, 1945 |
| 2,538,860 | Buttery | Jan. 23, 1951 |