

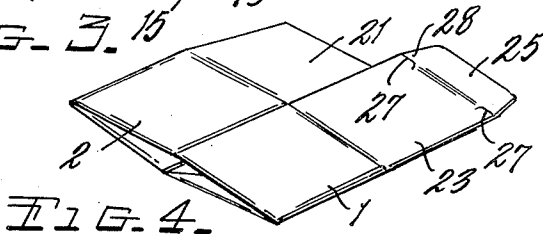
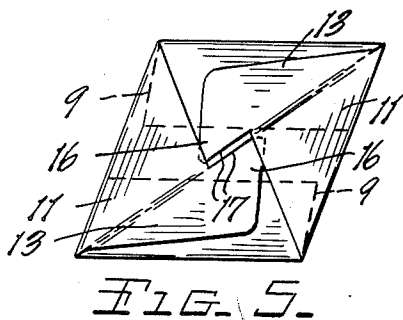
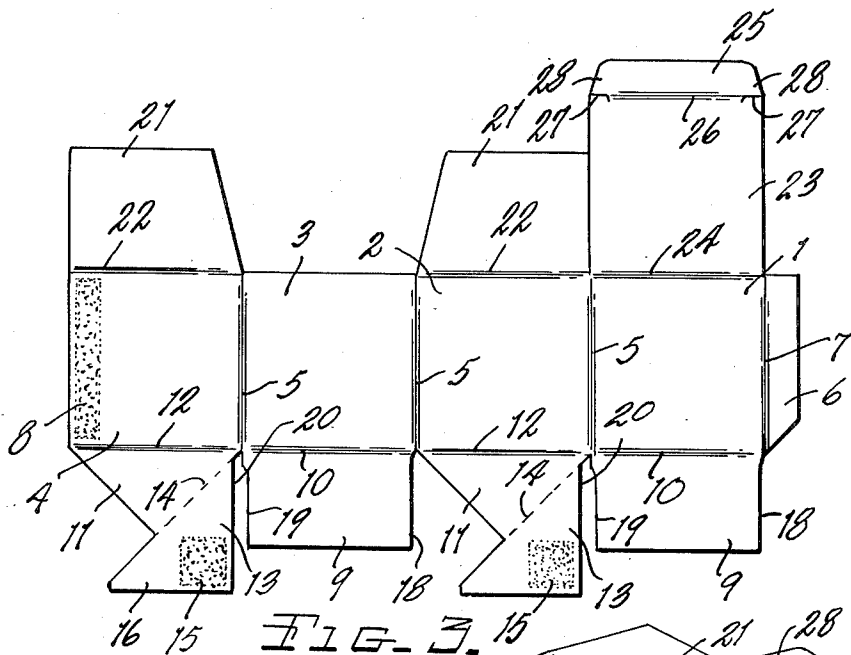
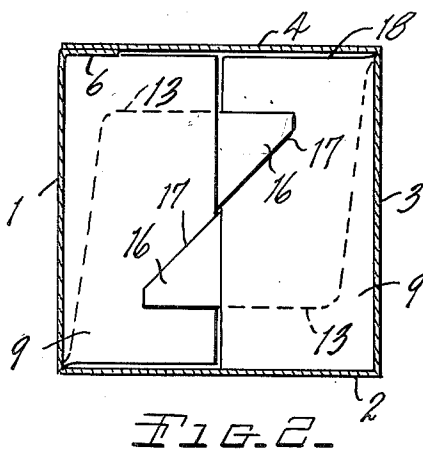
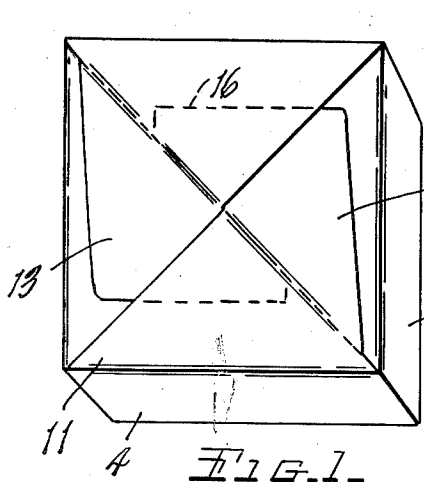
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K. T. BUTTERY

2,677,495

AUTOMATIC SETUP CARTON

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INVENTOR.  
Kenneth T. Buttery  
BY  
O. A. Earl  
Attorney

## UNITED STATES PATENT OFFICE

2,677,495

## AUTOMATIC SETUP CARTON

Kenneth T. Buttery, Kalamazoo, Mich., assignor  
to Sutherland Paper Company, Kalamazoo,  
Mich., a corporation of Michigan

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227,203. Divided and this application May 11,  
1953, Serial No. 354,284

4 Claims. (Cl. 229—39)

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This invention relates to improvements in an automatic setup carton.

The main objects of this invention are:

First, to provide a collapsible carton of the automatic erecting type in which the bottom members are positively and automatically swung to erected position on the erecting of the side walls and are interlockingly engaged so that they are capable of sustaining substantial loads when erected.

Second, to provide a carton of square section having these advantages which provides a bottom in which the joints between the bottom members are effectively closed and at the same time one which may be quickly and easily erected.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and 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 the invention in fully erected position.

Fig. 2 is a horizontal section thereof looking downwardly.

Fig. 3 is a plan view of the blank with adhesive areas indicated thereon.

Fig. 4 is a perspective view of the glued and collapsed carton.

Fig. 5 is a bottom view of the partially erected carton illustrating the manner of erecting.

The embodiment of the invention illustrated is square in cross section. The side walls 1, 2, 3 and 4 are hingedly connected at 5, the hinging connections being desirably in the form of scores. The sealing flap 6 is hingedly connected to the wall 1 by the hinging score 7 and is secured to the inner side of the wall 4 by adhesive indicated at 8.

The opposed pair of side walls 1 and 3 are provided with complementary bottom members 9 hingedly secured to their bottom edges at 10. The other opposed pair of walls 2 and 4 have triangular shaped bottom members 11 hingedly secured to their bottom edges at 12. Each of these bottom members 11 has a coupling flap 13 hingedly secured to one edge at 14. These flaps are on corresponding edges of the bottom members 11. Each flap 13 is adhesively secured to the under side of the adjacent bottom member 9, adhesive being indicated at 15.

Each coupling flap is provided with an integral laterally projecting tongue 16 which when the attaching flaps are secured to the bottom members 9 project beyond the swinging edges thereof as is

clearly shown in the drawing. In effect they provide the bottom members 9 with projecting tabs which overlappingly and interlockingly engage with the opposed complementary bottom member and lie on the top thereof as is clearly shown in Fig. 2. The edges 17 of the tongues are inclined so that they swing past each other and have guiding relation to each other as the carton is swung from collapsed to erected position.

The bottom members are collapsed or lie on the inner sides of the side walls so that the carton walls and bottom may be automatically erected merely by pressing on the collapsed carton as viewed in Fig. 4. The complementary bottom members 9 are substantially rectangular but their ends are cut away at 18 and 19 to provide clearance. The edges 20 of the coupling flaps terminate short of the inner ends of the bottom members 11, as best shown in Fig. 3, for the same purpose, that is, to provide sufficient clearance so that the parts may swing to erected position without undesirable frictional engagement with the walls during the movement from the collapsed position, as shown in Fig. 4, within the walls to fully erected position. While the bottom members 9 do not overlap but are complementary, the bottom members 11 underlying the same and the tongues 16 overlying the same result in an effective closed bottom and one which is capable of sustaining substantial loads.

In the embodiment illustrated the walls 2 and 4 are provided with inner closure members 21 hingedly secured to their upper edges at 22 while the wall 1 has an outer closure member 23 hingedly secured thereto at 24 and provided with a tucking flap 25 hingedly secured to its swinging edge at 26. The slits 27 at the juncture of the tucking flap to the outer closure member provide locking tongues 28 which engage with the inner closure members at the front corners thereof when the tucking flap is in closed position. The inner closure members are of such length that they overlap when in closed position.

This application is a division of my application for Letters Patent Serial Number 227,203, filed May 19, 1951, now Patent No. 2,659,526.

This structure is particularly desirable for square cartons. In substantially elongated cartons I prefer to use the structure shown in Figs. 1 to 7 of my original application.

I have illustrated and described my invention in a highly practical commercial embodiment thereof. I have not attempted to illustrate or describe other modifications or adaptations as it is believed that this disclosure will enable those

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skilled in the art to embody or adapt the 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 square carton formed of an integral blank having hingedly connected side walls, one pair of opposed side walls having complementary rectangular bottom members hingedly connected to the bottom edges thereof, the other pair of opposed side walls having triangular bottom members hingedly connected to the bottom edges thereof and each having a coupling flap hingedly connected to the outer diagonal edge thereof, one of said coupling flaps being fixedly secured to the under side of one of said complementary bottom members and the other coupling flap being fixedly secured to the under side of the other of said complementary bottom members, said coupling flaps having integral laterally projecting tongues which project fixedly from the swinging edges of the bottom members to which the flaps are secured and interlockingly engage and lie on the inner sides of the complementary bottom members when the carton is erected.

2. A collapsible carton formed of an integral blank comprising hingedly connected side walls, opposed bottom members hingedly connected to the bottom edges of one opposed pair of side walls, and opposed bottom end members hingedly connected to the bottom edges of the other opposed pair of side walls and each having a coupling flap hingedly secured thereto on a diagonal line, one of said coupling flaps being secured to the under side of one of said first named opposed bottom members, the other coupling flap being hingedly secured to the under side of the other first named bottom members, said coupling flaps having laterally projecting tongues which interlockingly engage and are on the inner sides of the first named bottom members when the carton is fully erected, the tongues having coacting sliding guiding engagement with each other as the carton is moved to erected position.

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3. A collapsible carton formed of an integral blank and comprising hingedly connected side walls, a first pair of bottom members hingedly connected to the bottom edges of one opposed pair of walls, and a second opposed pair of bottom members hingedly connected to the bottom edges of the other opposed pair of side walls and each having a coupling flap hingedly secured thereto on a diagonal line, one of said coupling flaps being secured to the under side of one of said first pair of bottom members and the other coupling flap being hingedly secured to the under side of the other of said first bottom members, said coupling members having integral laterally projecting tongues which project beyond the swinging edges of the bottom member to which the flap is secured and which interlockingly engage and are on the inner sides of said first bottom members when the carton is fully erected and act to supportingly receive downward thrust of the load on the said first bottom members.

4. 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 constituting inner bottom members, the other opposed pair of bottom members having inclined edges with attaching flaps hingedly connected thereto, one attaching flap being fixedly secured to the under side of one of said first mentioned pair of bottom members and the other being fixedly secured to the under side of the other of said first mentioned pair, said attaching flaps having integral laterally projecting tongue extensions at their outer ends which project from the swinging edges of the bottom members to which the flaps are secured and which are positioned on the inner sides of the first mentioned pair of bottom members when the carton is erected.

No references cited.