

Aug. 14, 1945.

K. T. BUTTERY

2,382,202

COLLAPSIBLE CELLULAR CARTON

Filed June 27, 1942

3 Sheets-Sheet 1

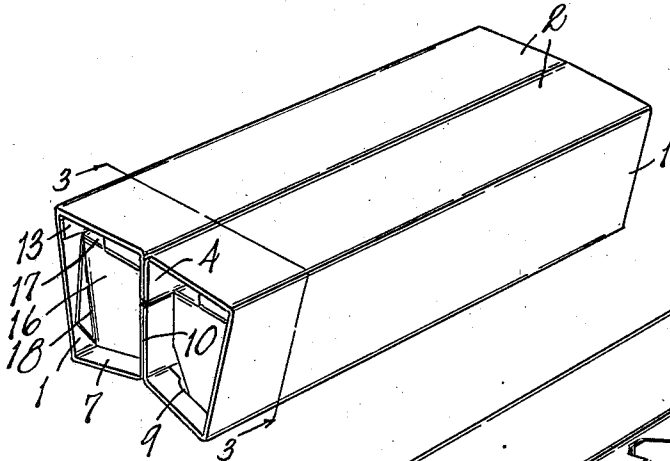


Fig. 1.

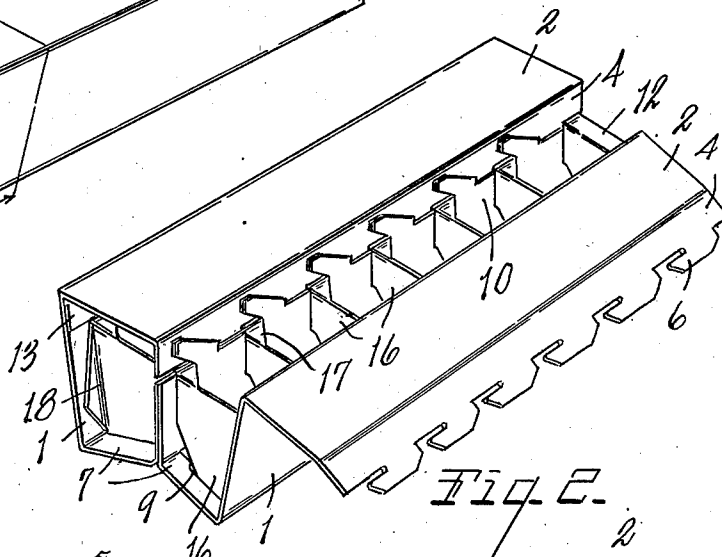


Fig. 2.

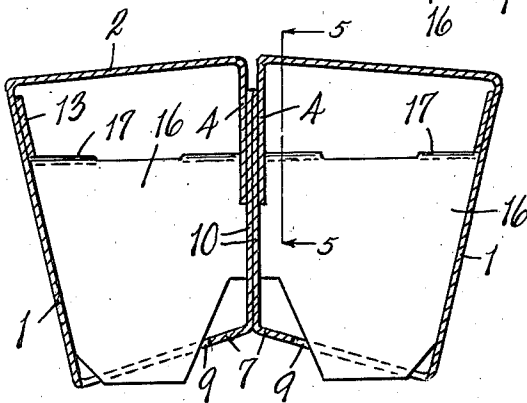


Fig. 3.

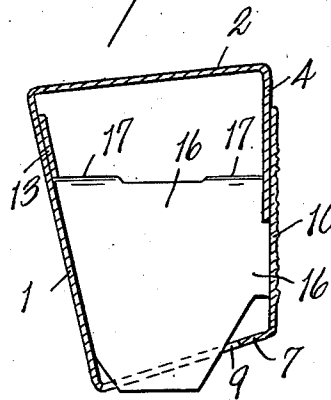


Fig. 4.

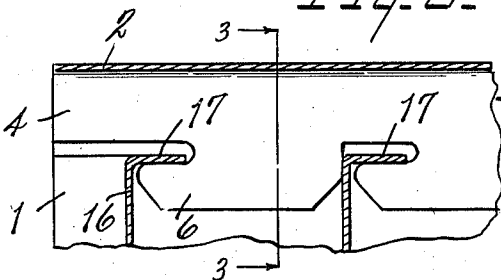


Fig. 5.

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3 Sheets-Sheet 2

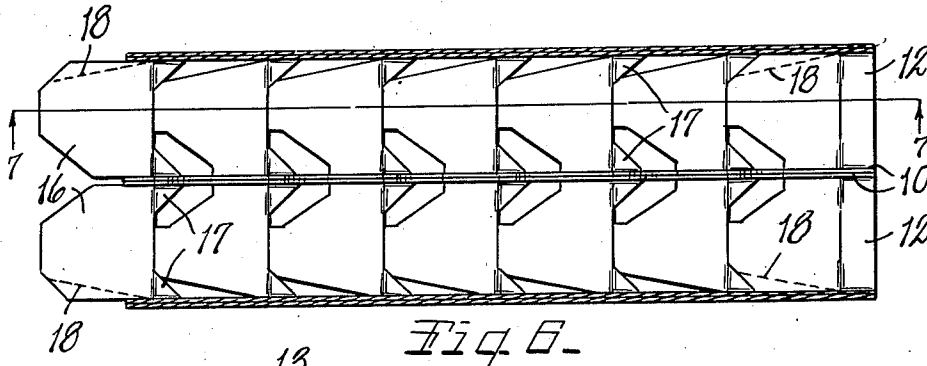
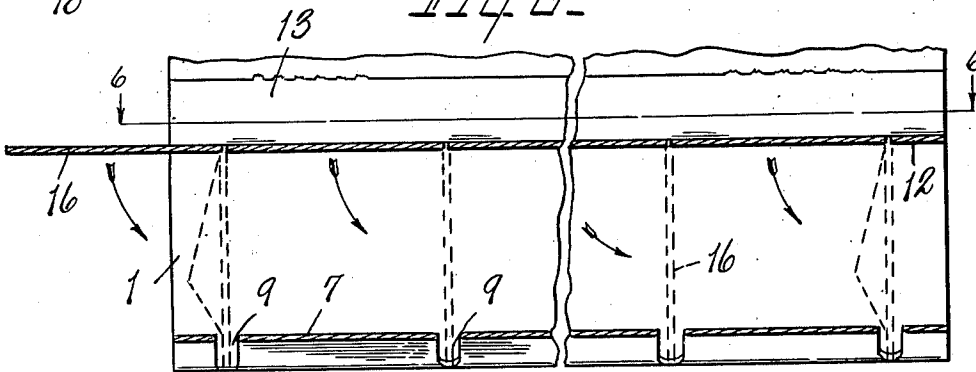
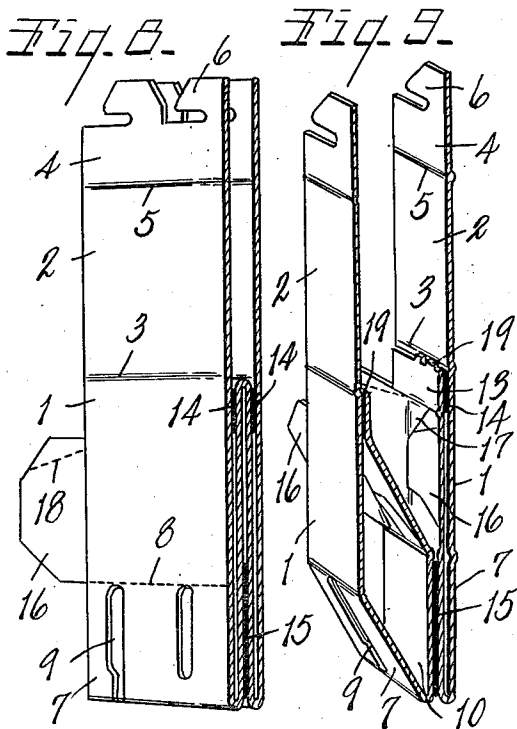


Fig. 7.

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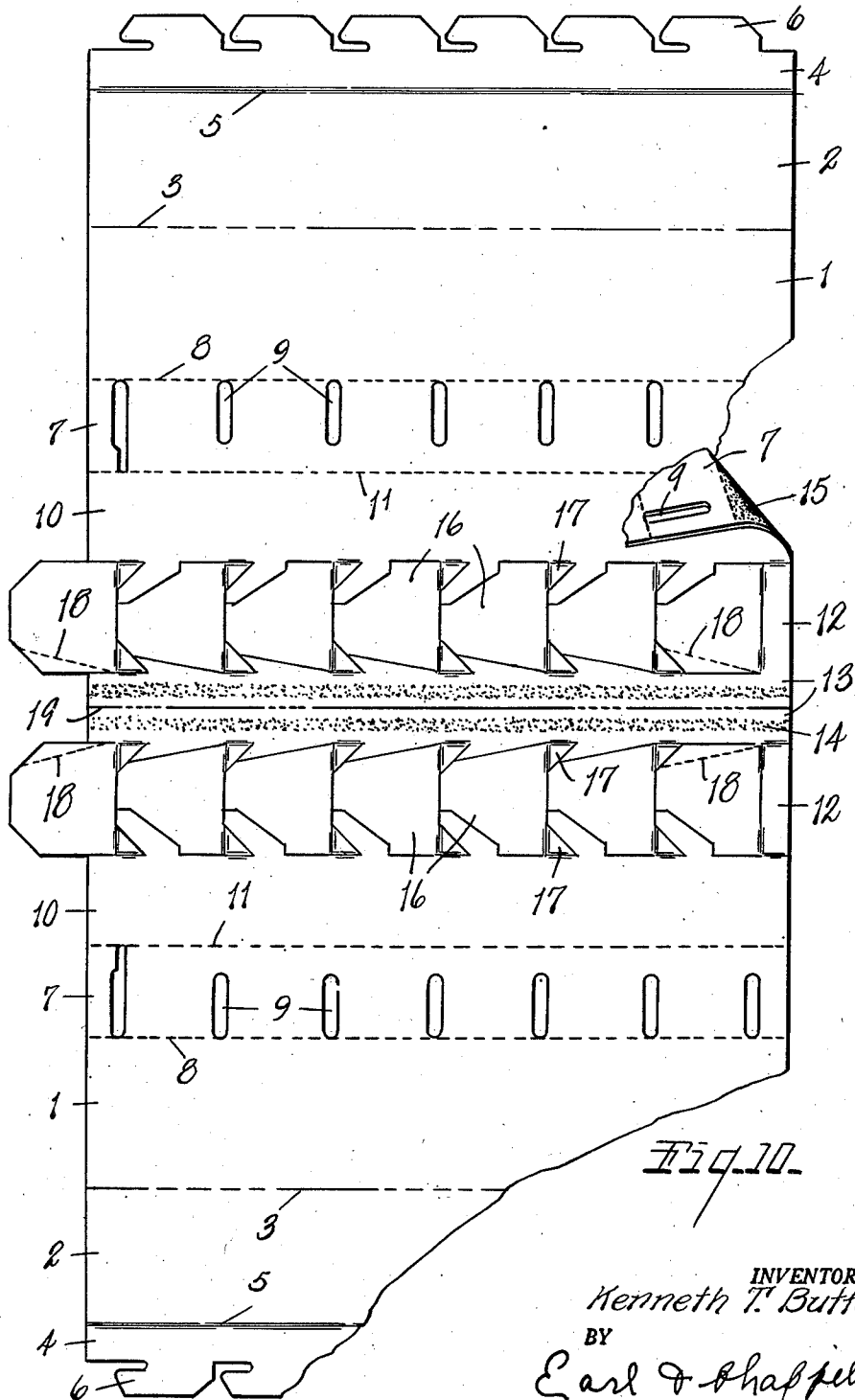
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COLLAPSIBLE CELLULAR CARTON

Filed June 27, 1942

3 Sheets-Sheet 3



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2,382,202

COLLAPSIBLE CELLULAR CARTON

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Application June 27, 1942, Serial No. 448,799

4 Claims. (Cl. 229—29)

The main objects of this invention are:

First, to provide a collapsible egg carton or cellular carton which may be formed of an integral blank by machinery in the knockdown or in collapsed condition and readily set up for use by machinery.

Second, to provide a carton having these advantages which may be readily severed for sales of one-half the contents of the carton while the covers are closed, the dividing or severing being accomplished by fracturing the adhesive bond or connection between the longitudinal partition members.

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 perspective view of a completely set up carton embodying the features of my invention.

Fig. 2 is a perspective view with one of the covers open and the other closed.

Fig. 3 is an enlarged transverse section on line 3—3 of Figs. 1 and 5.

Fig. 4 is a transverse section of one of the rows of cells after the parallel rows have been severed.

Fig. 5 is an enlarged fragmentary section on line 5—5 of Fig. 3 showing the retaining engagement of the cover closure member.

Fig. 6 is a longitudinal horizontal section on line 6—6 of Fig. 7 showing the relation of the partition members to the associated parts prior to the erecting of the partition members.

Fig. 7 is a fragmentary vertical longitudinal section on line 7—7 of Fig. 6 showing the transverse partition members in collapsed position by full lines and in erected position by dotted lines.

Fig. 8 is a perspective view in vertical section of the collapsed carton as it is discharged from the sealing machine.

Fig. 9 is a fragmentary perspective view of the carton transversely sectioned showing an initial step in the setting up of the carton.

Fig. 10 is a fragmentary plan view of the blank from which the carton is formed, a portion of the blank being fractured and rolled back to disclose an adhesive area thereof.

The embodiment of my invention illustrated is designed to receive one dozen eggs arranged in two rows of cells and to permit the severing of the cells while the covers for the individual

rows are in closed position without the necessity of additional cell closures, the severed sections being strong and rigid and well adapted to protect the contents.

My improved carton comprises side walls 1, 1 spaced apart in the blank, these side walls having covers 2, 2 hingedly connected thereto at 3, the covers having closure flaps 4 hingedly connected thereto at 5, these closure flaps having retaining tongues 6.

Bottom members 7 are hingedly connected to the bottom edges of the side walls 1 at 8. These bottom members have longitudinally spaced transverse slots 9 therein, there being seven of these slots.

Longitudinal partition members 10 are hingedly connected to the inner edges of the bottom members 7 at 11.

The top members 12 are hingedly joined to the upper edges of the longitudinal members and are provided with sealing strips 13 at their outer edges, adhesive being indicated at 14, these sealing strips being hingedly joined to the top members 12 and adhesively secured to the inner sides of the side walls as clearly shown in Figs. 8 and 9.

The longitudinal partition members are adhesively secured to each other in side by side relation, the adhesive being indicated at 15, see also Figs. 8 and 9.

The top members are slitted and scored to provide transverse partition members 16 and hinge connections 17 to the upper edges of the longitudinal partition members and to the sealing strips. The end members 18 constitute end retaining walls.

The end partition members are preferably provided with diagonal scores or flexing lines 19 which, owing to the fact that these partition members have parallel edge portions, cause a wedging frictional engagement with the inclined side walls. The sealing flaps 13 are connected by a readily fracturable connection 19.

In sealing, the blank is folded on this readily fracturable connection so that in setting up the carton from the position shown in Fig. 8 which, as stated, is the form in which the carton issues from the machine, it is only necessary to pull outwardly on the two side walls as indicated in Fig. 9.

When the carton walls are swung to erected position as shown in Figs. 6 and 7, the transverse partitions and end walls lie in the horizontal position as shown by full lines in Figs. 6 and 7. These transverse partitions and end walls

are all designed to be swung in one direction to bring them to erected position with their lower ends in engagement with the slots 9 in the bottom members and this operation can be easily performed by a simple machine or erecting device, erecting all of the transverse partitions and end walls simultaneously. When the transverse partitions and end walls are erected, the structure is very rigid—that is, it effectively resists collapsing stresses.

After the carton is filled, the covers are enclosed by engaging the closure retaining tongues with the hinge connections for the transverse partition members to the longitudinal partition members, as is clearly shown in Figs. 3 and 5. When thus engaged, the two longitudinal rows of cells may be readily severed by fracturing the connection between the longitudinal partition members and this may be done without opening the covers and the two resulting six-cell cartons are sufficiently strong and rigid to effectively protect the contents without the additions of any cell walls or parts.

As stated, the carton of my invention may be produced entirely by machinery—that is, so far as forming and manipulation of the blank is concerned to produce the collapsed completed structure shown in Fig. 8 and the collapsed structure may be quickly and easily set up as has been described.

I have illustrated and described my invention as I have embodied the same in egg cartons. It is, however, desirable for use in other containers where cell packing is desired, but 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 cellular carton comprising side walls each having a cover member hingedly joined to its outer edge, bottom members hingedly joined to the lower edges of the side walls and having a series of longitudinally spaced transverse slots therein, longitudinal partition members hingedly joined to the inner edges of said bottom members and adhesively secured together in side by side relation, the height of said longitudinal partition members being substantially less than the height of said side walls, and top members hingedly joined to the upper edges of said longitudinal partition members and having sealing flaps secured to the inner sides of said side walls, said top members constituting cross members connecting the upper portions of said side walls with the upper portions of said longitudinal partition members and being of a width substantially exceeding the width of the bottom members, said connected side walls, longitudinal partition members and top and bottom members coacting when the carton is erected to support the side walls and longitudinal partition members in an upwardly diverging relation with the lower edges of the longitudinal partition members in a plane substantially above the lower edges of the side walls and with the bottom members above the plane of the lower edges of the side walls and in an outwardly inclined arched relation to each other, said top members being slitted and scored to provide a plurality of transverse partition and end walls and hinged connections therefor to the longitudinal partition members and to said sealing flaps whereby said transverse partition and end mem-

bers may be swung to erected position with their lower ends engaged in said slots in said bottom members and constitute section support members when the longitudinal partition members are severed by fracturing the bond between them, both said cover members being provided with closure flaps engageable on the outer side of the adjacent longitudinal partition member with the hinge member connections for the transverse partition members thereto, thereby providing two longitudinal rows of cells separable while the closure flaps are so engaged, said several parts being formed of an integral blank with the side walls, bottom walls, longitudinal partition members, top members, and sealing flaps arranged in reversed relation in the blank and with the sealing flaps side by side in the blank and joined by readily fracturable connections whereby such connections serve to hold the structure in flat collapsed position while permitting the ready erecting thereof.

2. A collapsible cellular carton comprising side walls, bottom members hingedly joined to the lower edges of the side walls and having a series of longitudinally spaced transverse slots therein, longitudinal partition members hingedly joined to the inner edges of said bottom members and adhesively secured together in side by side relation, the height of said longitudinal partition members being substantially less than the height of said side walls, and top members hingedly joined to the upper edges of said longitudinal partition members and having sealing flaps secured to the inner sides of said side walls, said top members constituting cross members connecting the upper portions of said side walls with the upper portions of said longitudinal partition members and being of a width substantially exceeding the width of the bottom members, said connected side walls, longitudinal partition members and top and bottom members coacting when the carton is erected to support the side walls and longitudinal partition members in an upwardly diverging relation with the lower edges of the longitudinal partition members in a plane substantially above the lower edges of the side walls and with the bottom members above the plane of the lower edges of the side walls and in an outwardly inclined arched relation to each other, said top members being slitted and scored to provide a plurality of transverse partition and end walls and hinged connections therefor to the longitudinal partition members and to said sealing flaps whereby said transverse partition and end members may be swung to erected position with their lower ends engaged in said slots in said bottom members and constitute section support members when the longitudinal partition members are severed by fracturing the bond between them, said several parts being formed of an integral blank with the side walls, bottom walls, longitudinal partition members, top members, and sealing flaps arranged in reversed relation in the blank and with the sealing flaps side by side in the blank and joined by readily fracturable connections whereby such connections serve to hold the structure in flat collapsed position while permitting the ready erecting thereof.

3. A collapsible cellular carton comprising side walls each having a cover member hingedly joined to its outer edge, bottom members hingedly joined to the lower edges of the side walls, longitudinal partition members hingedly joined to the inner edges of said bottom members and

adhesively secured together in side by side relation, the height of said longitudinal partition members being substantially less than the height of said side walls, and top members hingedly joined to the upper edges of said longitudinal partition members and having sealing flaps secured to the inner sides of said side walls, said top members constituting cross members connecting the upper portions of said side walls with the upper portions of said longitudinal partition members and being of a width substantially exceeding the width of the bottom members, said connected side walls, longitudinal partition members and top and bottom members coacting when the carton is erected to support the longitudinal partition members with their lower edges in a plane above the lower edges of the side walls and the bottom members in an outwardly inclined arched relation to each other and above the plane of the lower edges of the side walls, said top members being slitted and scored to provide a plurality of transverse partitions erectable between said side walls and longitudinal partition members, both said cover members being provided with closure flaps engageable on the outer side of the adjacent longitudinal partition member with the hinge member connections for the transverse partition members thereto, thereby providing two longitudinal rows of cells separable while the closure flaps are so engaged, said several parts being formed of an integral blank with the side walls, bottom walls, longitudinal partition members, top members, and sealing flaps arranged in reversed relation in the blank and with the sealing flaps side by side in the blank and joined by readily fracturable connections whereby such connections serve to hold the structure in flat collapsed position while permitting the ready erecting thereof.

4. A collapsible cellular carton comprising side walls, bottom members hingedly joined to the lower edges of the side walls, longitudinal partition members hingedly joined to the inner edges of said bottom members and adhesively secured in side by side relation, the height of said longitudinal partition members being substantially less than the height of said side walls, and top members hingedly joined to the upper edges of said longitudinal partition members and having sealing flaps secured to the inner sides of said side walls, said top members constituting cross members connecting the upper portions of said side walls with the upper portions of said longitudinal partition members and being of a width substantially exceeding the width of the bottom members, said connected side walls, longitudinal partition members and top and bottom members coacting when the carton is erected to support the longitudinal partition members with their lower edges in a plane above the lower edges of the side walls and the bottom members in an outwardly inclined arched relation to each other and above the plane of the lower edges of the side walls, said top members being slitted and scored to provide a plurality of transverse partitions erectable between said side walls and longitudinal partition members, said several parts being formed of an integral blank with the side walls, bottom walls, longitudinal partition members, top members, and sealing flaps arranged in reversed relation in the blank and with the sealing flaps side by side in the blank and joined by readily fracturable connections whereby such connections serve to hold the structure in flat collapsed position while permitting the ready erecting thereof.

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