

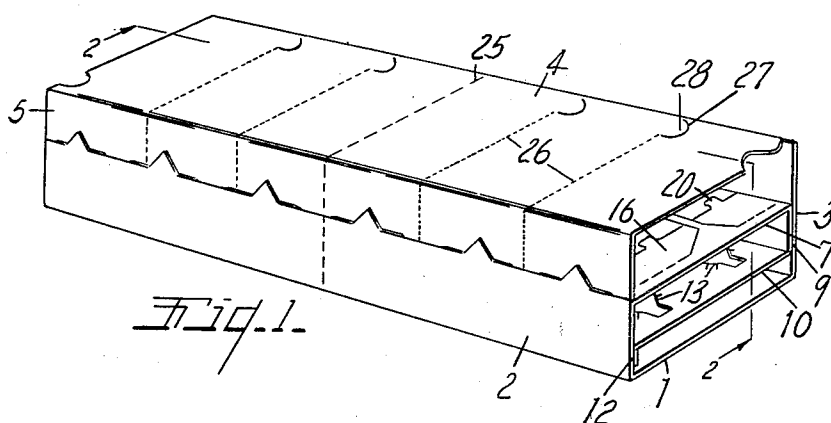
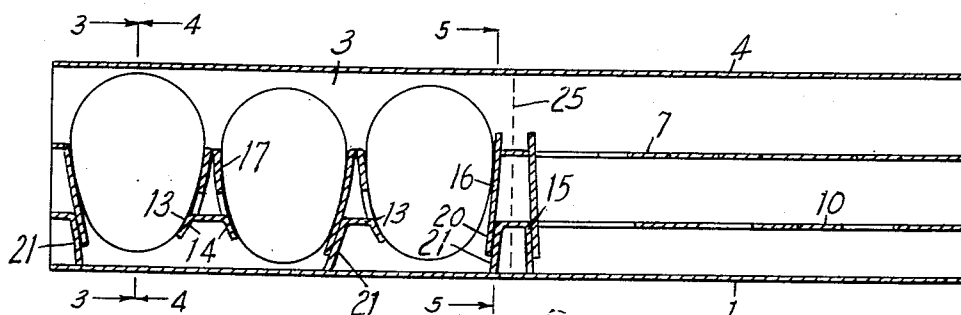
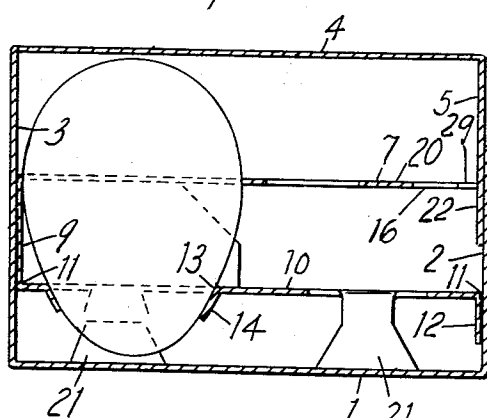
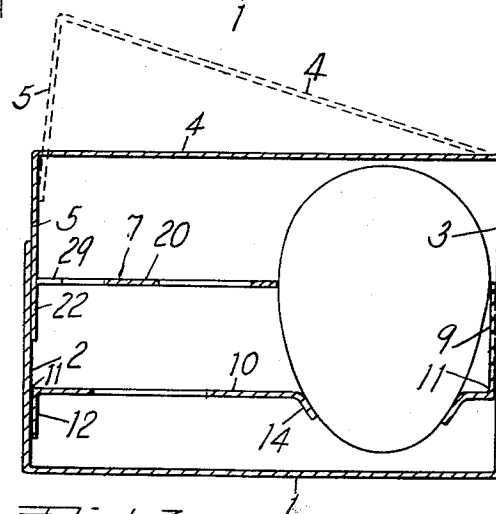
Oct. 11, 1960

J. E. ANNEN, SR
CELLULAR CARTONS

2,955,736

Filed Nov. 17, 1958

3 Sheets-Sheet 1



INVENTOR.
James E. Annen Sr.
BY *James E. Annen Sr.*
ATTORNEY.

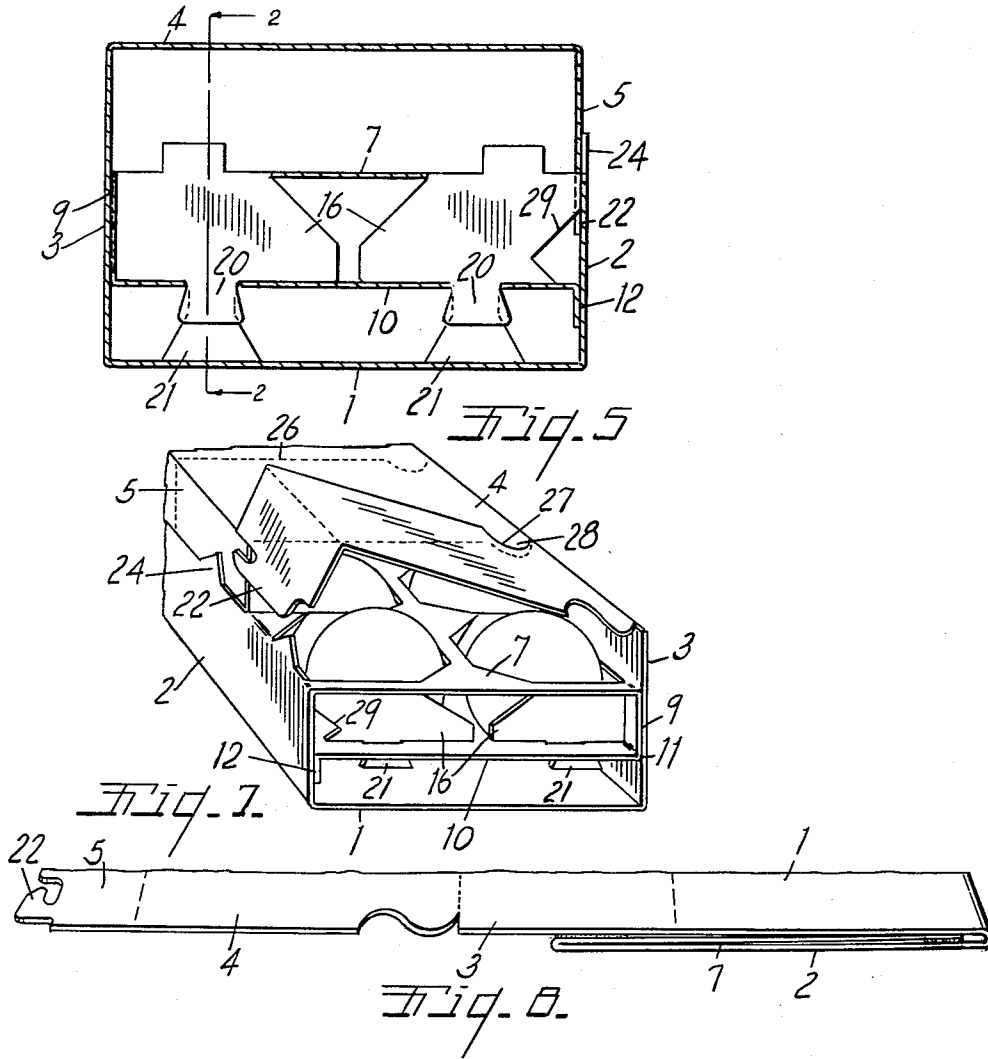
Oct. 11, 1960

J. E. ANNEN, SR
CELLULAR CARTONS

2,955,736

Filed Nov. 17, 1958

3 Sheets-Sheet 2



INVENTOR.
James E. Annen, Sr.
BY *Otto H. Earl*
ATTORNEY.

Oct. 11, 1960

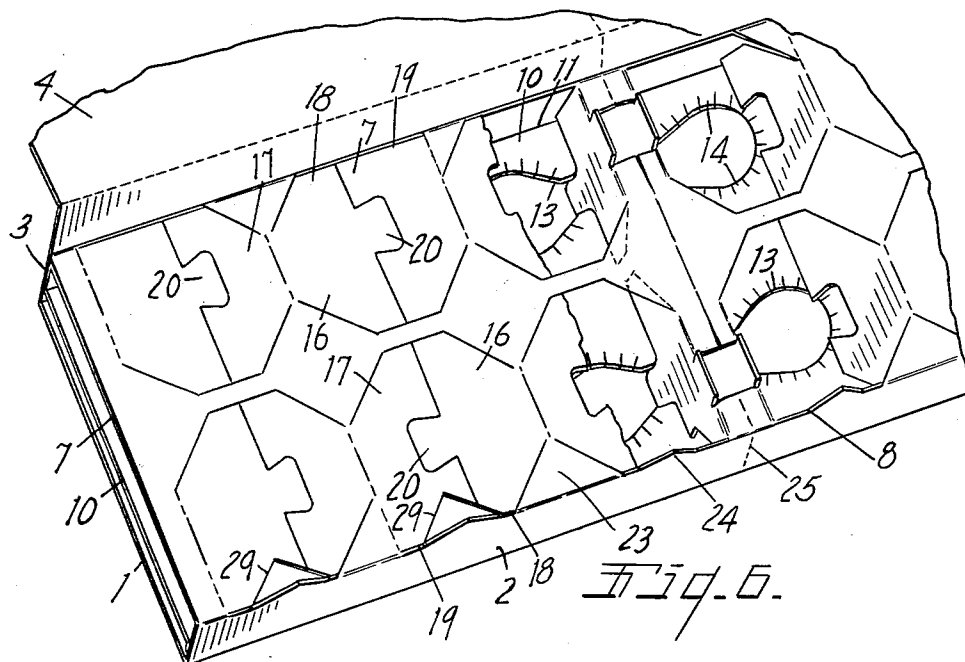
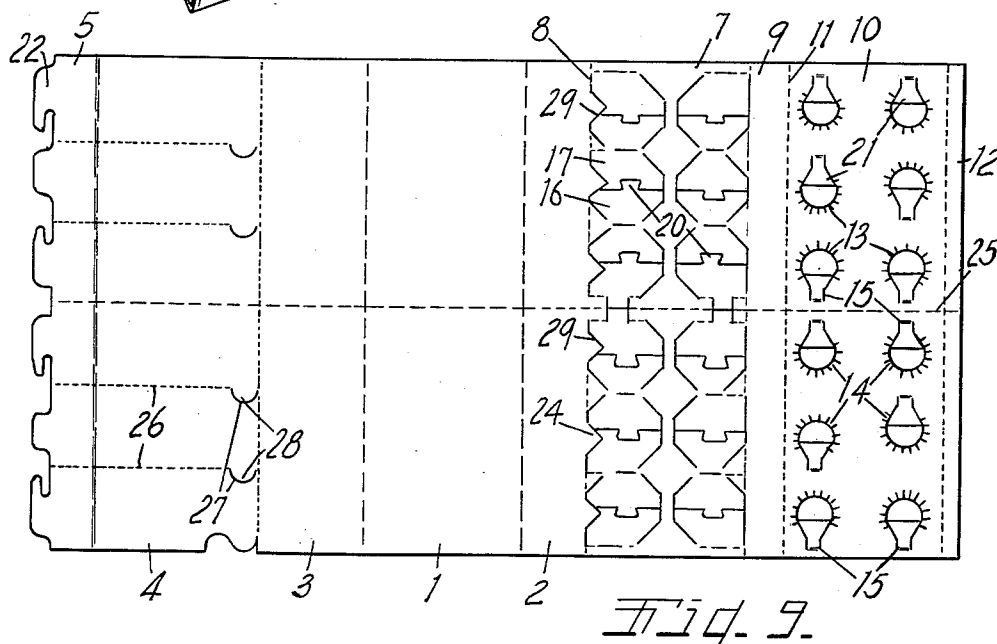
J. E. ANNEN, SR

2,955,736

CELLULAR CARTONS

Filed Nov. 17, 1958

3 Sheets-Sheet 3



INVENTOR.
James E. Annen Sr.
BY *[Signature]*
ATTORNEY.

1

2,955,736

CELLULAR CARTONS

James E. Annen, Sr., Kalamazoo, Mich., assignor, by mesne assignments, to KVP Sutherland Paper Company, a corporation of Delaware

Filed Nov. 17, 1958, Ser. No. 774,476

12 Claims. (Cl. 229—28)

This invention relates to cellular cartons primarily designed for use as egg cartons, but readily adapted for packaging other fragile articles. The main objects of this invention are,

First, to provide a cellular egg carton which when erected is very strong and rigid and one in which the eggs are supported so that they are well protected both for shipment and handling of the carton.

Second, to provide a cellular egg carton having these advantages which may be formed from a unitary blank and readily set up in collapsed form, and 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 drawing, in which:

Fig. 1 is a front perspective view of a cellular carton embodying my invention.

Fig. 2 is a longitudinal section on a line corresponding to line 2—2 of Figs. 1 and 5, certain of the cells being in fully erected position and eggs conventionally illustrated therein.

Fig. 3 is a transverse section on a line corresponding to line 3—3 of Fig. 2 looking in the direction of the arrows with the cover shown in partially open position by dotted lines.

Fig. 4 is a cross sectional view on a line corresponding to line 4—4 of Fig. 2 looking in the direction of the arrows.

Fig. 5 is a cross sectional view on a line corresponding to line 5—5 of Fig. 2.

Fig. 6 is a fragmentary perspective view with portions of the cell walls in erected position and others in non-erected position.

Fig. 7 is a perspective view illustrating the embodiment of my invention, having the sectionally fracturable cover.

Fig. 8 is a fragmentary perspective view of the collapsed carton.

Fig. 9 is a plan view of the blank from which the carton illustrated in Figs. 1 to 8 is formed.

I have illustrated my invention in the accompanying drawing as embodied in an egg carton. As stated it is particularly desirable for egg cartons although it may be readily adapted for packaging of fragile articles such, for example, as lamp bulbs and the like.

The embodiment of my invention comprises a bottom 1, a front wall member 2 hingedly connected at its lower edge to the bottom, a rear wall member 3 hingedly connected at its lower edge to the rear edge of the bottom 1, a cover 4 hingedly connected to the upper edge of the rear wall member 3, the cover member having an upper front wall member 5 on its swinging edge. The hinging scores on the blank of these parts are conventionally illustrated in Fig. 9, but as such hinging scores are common in egg cartons and numerous other cartons formed of fiberboard stock, they are not numbered and described.

2

The upper cell member 7 is hingedly connected at its front edge 8 to the upper edge of the front wall member 2 and is connected at its rear edge to a downturned supporting strip 9 which is disposed upon the inner side of and adhesively secured to the rear wall member 3. The lower cell member 10 is hingedly secured at 11 to the lower edge of this supporting strip 9 and is provided with an attaching flap 12 at its front edge which is disposed upon and adhesively secured to the inner side of the front wall member 2. These upper and lower cell members 7 and 10 are disposed in parallel relation to each other and to the bottom when the carton is erected as is illustrated. All of these parts of the carton are desirably of the same length, as is illustrated in Fig. 9.

The lower cell member 10 is provided with egg seat openings 13 which receive the lower ends of the eggs, as is illustrated. These seats have a plurality of radial slits in their edges forming deflectable seat tabs 14. The bottom cell member also has slot-like keeper openings 15 which open to the seat openings.

The upper cell member is transversely slit and scored to provide transversely aligned swingably adjustable cell wall members or strut portions 16 and 17 disposed in opposed pairs when in erected position and foldable or swingable downwardly to constitute side walls of the cells and laterally support eggs as is illustrated in Fig. 2. The outer end edges 18 and 19 of these cell wall members 16 and 17 are in lateral thrust sustaining engagement with the front and rear wall members when the cell wall members are in erected position and they prevent the lateral collapsing of the erected carton.

The wall members 16 are provided with dove-tailed tongues 20 which engage the keepers 15 of the lower cell member when the carton is in fully erected position. The lower cell member has strut portions 21 struck out therefrom to form the openings and keepers, and when erected they are swung downwardly into bottom engaging position, as best shown in Fig. 4. They are swung to bottom engaging position when the cell wall members 16 are swung downwardly to the position as is clearly shown in Fig. 2.

The cover flap or upper front wall member 5 is provided with laterally facing tongues 22 which are retainingly engageable with the upper cell member parts which project inwardly from the lower front wall member. These parts designated generally by the numeral 24 are of different shapes, but they are designated by the same numeral. Desirably the upper cell member has triangular slits 29 therein at its front edge which result in retaining the parts in erected position in the upwardly projecting tabs, facilitating the positioning of the cover member 5.

In the embodiment illustrated, the carton blank has a fractioning score 25 disposed centrally thereof so that the carton illustrated, designed to receive a dozen eggs, may be divided into two six egg cartons. For convenience in use without opening the cover, the cover 4 and the extension 5 have transverse scores 26 positioned between the pairs of cells so that the cover can be removed section by section to expose each pair of cells. This avoids the necessity of opening the cover when it is desired to remove eggs. At the inner ends of these weakened scores or perforations 26 I preferably provide curved slits 27 which define tabs 28 which may be conveniently grasped for severing the cover sections from the rear wall member and the disengagement of the tongues 22 without any special manipulation of the tongues or the cover member 5 to disengage the tongues.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe other adaptations and

3

modifications as it is believed that this disclosure will enable those skilled in the art to embody my invention as may be desired. The structure illustrated is, however, very rigid when erected and may be handled when transported without likelihood of injury to the contents.

What is claimed as new is:

1. A collapsible egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall hingedly connected to the rear edge of the bottom and of a vertical width substantially exceeding the vertical width of the front wall, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to its swinging edge of said cover and provided with tongues on its outer edge, an upper cell member hingedly connected to the lower front wall member and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the rear wall, a lower cell member hingedly connected to the lower edge of said supporting strip and having an attaching flap on its front edge secured to the inner side of the lower front wall member, said upper and lower cell members being in vertically spaced substantially parallel relation to each other when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein, said lower cell member having bottom engaging struts adjacent said openings and keepers opening to said seat openings, the upper cell member being transversely slit and scored providing transversely aligned swingably adjustable cell wall members dimensioned to engage the lower cell member and the adjacent side wall when in erected position, some of said cell wall members being provided with tongues engageable with said keepers in said lower cell member, said upper front wall member on said cover being disposed with its edge on the inner side of said lower front wall member and in supported relation to said upper cell member with its tongues in releasable retaining engagement therewith when the cover is in closed position.

2. A collapsible egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall hingedly connected to the rear edge of the bottom and of a vertical width substantially exceeding the vertical width of the front wall, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to its swinging edge of said cover and provided with tongues on its outer edge, an upper cell member hingedly connected to the lower front wall member and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the rear wall, a lower cell member hingedly connected to the lower edge of said supporting strip and having an attaching flap on its front edge secured to the inner side of the lower front wall member, said upper and lower cell members being in vertically spaced substantially parallel relation to each other when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein, the upper cell member being slit and scored providing transversely aligned swingably adjustable cell members, some of said cell wall members being provided with tongues engageable with said keepers in said lower cell member, said upper front wall member on said cover being disposed with its edge on the inner side of said lower front wall member and in supported relation to said upper cell member with its tongues in releasable retaining engagement therewith when the cover is in closed position.

3. A collapsible egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall hingedly connected to the rear edge of the bottom and of a vertical width substantially exceeding the vertical width of the front wall, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to

4

its swinging edge of said cover and provided with tongues on its outer edge, an upper cell member hingedly connected to the lower front wall member and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the rear wall, a lower cell member hingedly connected to the lower edge of said supporting strip and having an attaching flap on its front edge secured to the inner side of the lower front wall member, said upper and lower cell members being in vertically spaced substantially parallel relation to each other when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein, the edges of said openings having a plurality of inwardly projecting springably deflectable tabs thereon, the upper cell member being slit and scored providing transversely aligned swingably adjustable cell members, some of said cell wall members being provided with tongues engageable with said keepers in said lower cell member, said upper front wall member on said cover being disposed with its edge on the inner side of said lower front wall member and in supported relation to said upper cell member with its tongues in releasable retaining engagement therewith when the cover is in closed position.

4. A cellular carton comprising a bottom, a front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall member, an upper cell member integral with and hingedly connected to said front wall member and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the rear wall member, a lower cell member hingedly connected to the lower edge of said support strip and having an attaching flap on its front edge secured to the inner side of said front wall member, said lower and upper cell members being in vertically spaced substantially parallel relation to each other when the carton is erected and being collapsible into side by side relation, said bottom cell member having a plurality of uniformly spaced seat openings therein, said lower cell member having bottom engaging struts integral therewith and keepers opening to said seat openings, the upper cell member having swingable cell side members which when in erected position supportedly and bracingly engage the lower cell member and the adjacent wall members, the upper cell member being slit and scored providing transversely aligned swingably adjustable cell members, some of said cell side wall members having tongues engageable with said keepers in said lower cell member.

5. A collapsible egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom and of a vertical width substantially exceeding the vertical width of the front wall member, a cover hingedly connected to the upper edge of the rear wall member, an upper front wall member hingedly connected to its swinging edge of said cover and provided with detents on its outer edge, upper and lower cell members hingedly connected to the inner sides of the said lower front and rear wall members in vertically spaced relation to each other when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein the edges of which have a plurality of inwardly projecting deflectable seat elements thereon, said lower cell member also having bottom engaging struts and keepers opening to said seat openings thereof, the upper cell member having transversely aligned swingably adjustable cell wall members certain of said cell wall members being provided with dove-tail shaped tongues interlockingly engageable with said keepers of said lower cell member, said upper front wall member when closed being disposed in supported relation to said upper cell member with its detents in releasable retaining engagement therewith when the

5

cover is in closed position, said lower front wall member having upwardly projecting guide tabs for said upper front wall members.

6. A collapsible egg carton comprising a bottom a lower front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom and of a vertical width substantially exceeding the vertical width of the front wall member, a cover hingedly connected to the upper edge of the rear wall member, an upper front wall member hingedly connected to its swinging edge of said cover, upper and lower cell members hingedly connected to the inner sides of the said lower front and rear wall members in vertically spaced relation to each other when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein the edges of which have a plurality of inwardly projecting deflectable seat elements thereon, said lower cell member also having bottom engaging struts and keepers opening to said seat openings thereof, the upper cell member having transversely aligned swingably adjustable cell wall members certain of said cell wall members being provided with dove-tail shaped tongues interlockingly engageable with said keepers of said lower cell member, said upper front wall member when closed being disposed in supported relation to said upper cell member.

7. A cellular carton comprising a bottom, front and rear wall members hingedly connected to the front and rear edges of the bottom, a cover hingedly connected to the upper edge of the rear wall member, upper and lower cell members hingedly connected at their front edges to the front wall member and at their rear edges to the rear wall member, said upper and lower cell members being in vertically spaced substantially parallel relation to each other and to the bottom when the carton is erected, said lower cell member having a plurality of uniformly spaced egg seat openings therein, said lower cell member also having bottom engaging struts and keepers opening to said seat openings thereof, the upper cell member having transversely aligned swingably adjustable cell wall members dimensioned to engage the lower cell member when in erected position, certain of said cell wall members being provided with dove-tail shaped tongues interlockingly engageable with said keepers of said lower cell member.

8. An egg carton comprising a bottom, a lower front wall hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to the swinging edge of the cover, an upper cell member integral with and hingedly connected to the upper edge of the lower front wall and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the inner side of the rear wall member in vertically spaced relation to the bottom, a lower cell member hingedly connected to the lower edge of said supporting strip and having an attaching flap on its front edge hingedly secured to the inner side of said lower front wall member, said bottom and said lower and upper cell members and said top being in vertically spaced substantially horizontal and parallel relation to each other and said rear and front wall members being in substantially vertical and parallel relation to each other when the carton is erected and disposed in upright position, said lower cell member having integral strut portions supportingly engaged with the bottom, and said upper cell member having strut portions interlockingly engaged with said lower cell member and abutting the strut portions on said lower cell member when the carton is erected, said strut portions being folded from the planes of said cell members along lines transverse to the front and rear edges of the cell members whereby the carton is held in erected position and is of substantially rectangular cross section, said cell mem-

6

bers having a plurality of vertically aligned seat openings therein, the edges of the seat openings of the lower cell member having a plurality of springably deflectable supporting tabs on the edges thereof.

9. An egg carton comprising a bottom, a lower front wall hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to the swinging edge of the cover, an upper cell member integral with and hingedly connected to the upper edge of the lower front wall and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the inner side of the rear wall member in vertically spaced relation to the bottom, a lower cell member hingedly connected to the lower edge of said supporting strip and having an attaching flap on its front edge hingedly secured to the inner side of said lower front wall member, said bottom and said lower and upper cell members and said top being in vertically spaced substantially horizontal and parallel relation to each other and said rear and front wall members being in substantially vertical and parallel relation to each other when the carton is erected and disposed in upright position, said lower cell member having integral strut portions supportingly engaged with the bottom, and said upper cell member having strut portions interlockingly engaged with said lower cell member and abutting the strut portions on said lower cell member when the carton is erected, said strut portions being folded from the planes of said cell members along lines transverse to the front and rear edges of the cell members whereby the carton is held in erected position and is of substantially rectangular cross section.

10. An egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to the swinging edge of the cover, an upper cell member integral with and hingedly connected to the upper edge of the lower front wall and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the inner side of the rear wall member in vertically spaced relation to the bottom, and a lower cell member hingedly connected to the lower edge of said supporting strip in vertically spaced relation to the bottom and having an attaching flap on its front edge hingedly secured to the inner side of said lower front wall member in vertically spaced parallel relation to the bottom and said bottom and said lower and upper cell members and said top being in vertically spaced horizontal parallel relation to each other and said rear and front wall members being in vertical parallel relation to each other when the carton is in erected upright position, said cell members having a plurality of vertically aligned seat openings therein, the edges of the seat openings of the lower cell member having a plurality of springably deflectable supporting tabs on the edges thereof.

11. An egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to the swinging edge of the cover, an upper cell member integral with and hingedly connected to the upper edge of the lower front wall and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the inner side of the rear wall member in vertically spaced relation to the bottom, and a lower cell member hingedly connected to the lower edge of said supporting strip in vertically spaced relation to the bottom and having an attaching flap on its front edge hingedly secured to the inner side

of said lower front wall member in vertically spaced parallel relation to the bottom and said bottom and said lower and upper cell members and said top being in vertically spaced horizontal parallel relation to each other and said rear and front wall members being in vertical parallel relation to each other when the carton is in erected upright position.

12. An egg carton comprising a bottom, a lower front wall member hingedly connected to the front edge of the bottom, a rear wall member hingedly connected to the rear edge of the bottom, a cover hingedly connected to the upper edge of the rear wall, an upper front wall member hingedly connected to the swinging edge of the cover, an upper cell member integral with and hingedly connected to the upper edge of the lower front wall and hingedly connected at its rear edge to a downturned supporting strip which is fixedly secured to the inner side of the rear wall member in vertically spaced relation to the bottom, and a lower cell member hingedly connected to the lower edge of said supporting strip in vertically spaced relation to the bottom and having an attaching

flap on its front edge hingedly secured to the inner side of said lower front wall member in vertically spaced parallel relation to the bottom and said bottom and said lower and upper cell members and said top being in vertically spaced horizontal parallel relation to each other and said rear and front wall members being in vertical parallel relation to each other when the carton is in erected upright position, said lower cell member having integral bottom engagement strut portions, and said upper cell member having integral strut portions interlockingly and supportingly engaged with said lower cell member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,853,746	Robin	Apr. 12, 1932
2,640,589	Foster et al.	June 2, 1953
2,776,082	Bennorth	Jan. 1, 1957

FOREIGN PATENTS

529,590	Canada	Aug. 28, 1956
---------	--------	---------------