July 18, 1939. C. H. LOWE 2,166,762

CARTON

Filed July 10, 1937

Fig. 1.

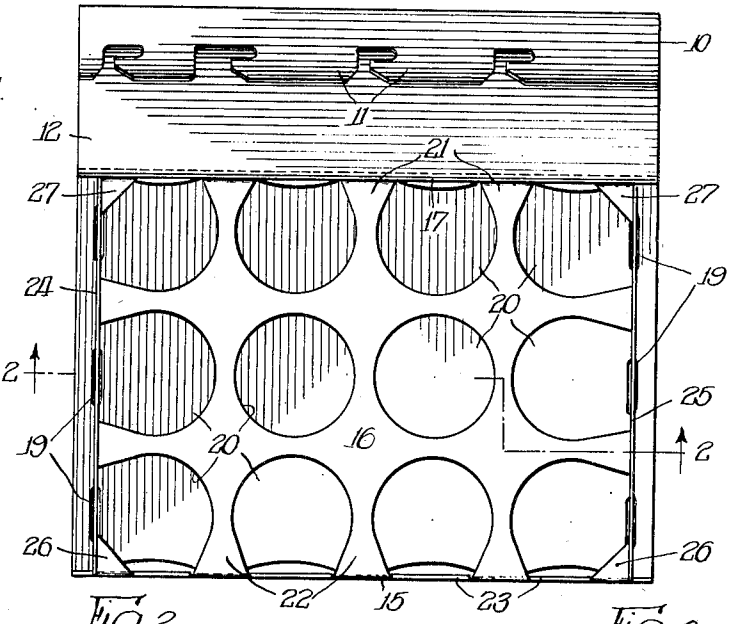


Fig. 2.

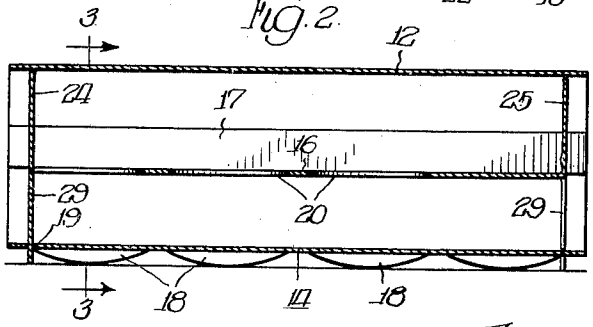


Fig. 3.

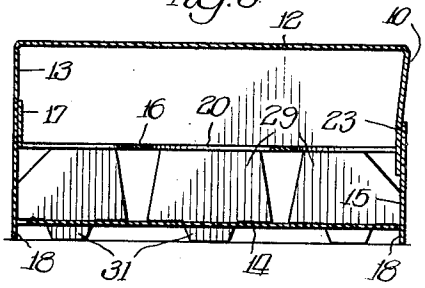
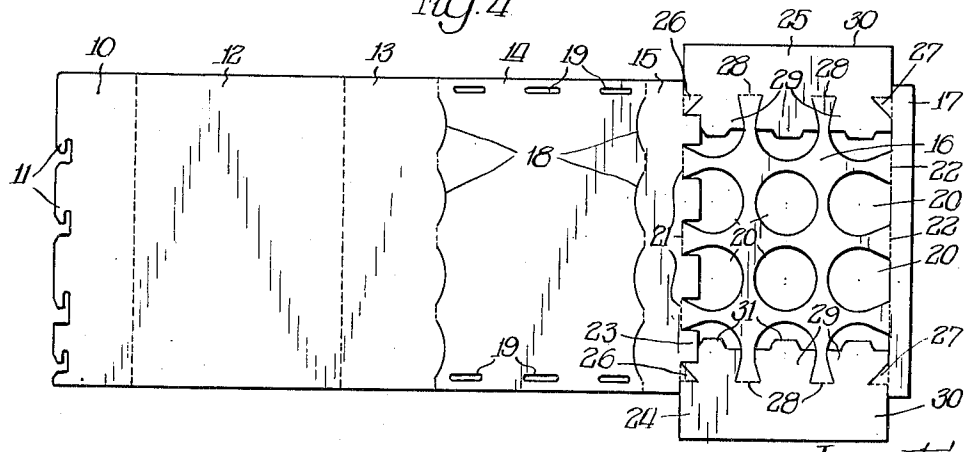


Fig. 4.



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2,166,762

CARTON

Carl H. Lowe, Chicago, Ill., assignor to Self-Locking Carton Co., Chicago, Ill., a corporation of Illinois

Application July 10, 1937, Serial No. 152,985

4 Claims. (Cl. 229—29)

The present invention relates to cellular cartons of the type customarily employed in packaging eggs.

A principal object of the invention is the provision of an improved cellular carton of the one-piece type in which the carton easily may be set up or erected by hand.

An additional object is to provide a cellular carton having top and bottom walls and a horizontal intermediate wall provided with openings for receiving eggs and end cross partitions cut from the material of the intermediate wall and rotatable into erect position to provide end closures as well as top wall bracing members.

These and other objects will be observed from a consideration of the following specification, in which there is described a preferred embodiment of the invention, and by reference to the accompanying drawing, in which:

Fig. 1 is a top view of a carton constructed in accordance with the invention, the carton being shown with the cover open;

Fig. 2 is a longitudinal sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view of the carton taken along line 3—3 of Fig. 2; and

Fig. 4 is a plan view of a blank from which the carton is constructed.

In my copending application, Serial No. 137,446, filed April 17, 1937, there is described a carton of the "chain cell" type in which a series of cross partitions are joined by a single longitudinally extending horizontal connecting strip. The cross partitions of the chain cell are hinged at an intermediate point to the longitudinally extending strips. When the cross partitions are rotated into erect position the horizontal connecting strip moves with the cross partitions. In accordance with the present invention a horizontal egg-receiving section is hingedly connected to end cross partitions and to the front and rear walls of the carton, the end cross partitions being rotatable into erect position without movement of the egg-receiving section.

As shown in Fig. 4, the carton of the present invention is produced from a blank which is cut and scored to provide a cover-locking section 10 having marginal hooks 11, a top 12, a rear wall 13, a bottom section 14, a front wall 15, an egg-receiving section indicated generally at 16, and an attaching strip 17. It will be understood that the portions of the blank referred to are separated from the adjacent portions by means of suitable score lines. In producing the carton the blank is formed in the manner shown in Fig. 4 and is folded along the score line between the bottom wall 14 and the front wall 15, the attaching strip 17 then being glued to the rear wall 13 while the carton is in flattened condition.

The front and rear walls 13 and 15 are provided with a series of tabs 18 which are cut from the material of the bottom wall and provide for spacing the bottom wall from a surface upon which the carton is positioned, as will be seen from Figs. 2 and 3. The bottom wall 14 is cut to provide spaced openings 19 which are parallel to the ends of the bottom member and positioned adjacent the ends thereof.

When the carton is squared from collapsed position the intermediate egg-receivng section 16 forms a wall about half-way between the top and bottom of the carton, this wall being parallel to the bottom, as will be seen in Figs. 2 and 3. The wall 16 is provided with egg-receiving cut-out sections 20 positioned symmetrically so as to receive three rows of eggs having four eggs in each row, this type of carton being known in the industry as the "3 x 4" carton. The intermediate wall 16 is connected to the front wall by a series of hinge sections 21 and also is connected to the attaching strip 17 by similar series of hinge sections 22.

Along the front wall it is possible to provide for upstanding tabs 23 by allowing some of the material cut away to produce the egg-receiving openings 20 adjacent the front wall to remain on the front wall. These upstanding tabs 23 lie adjacent the cover-locking strip 10 when the cover of the carton is closed and the hooks 11 are secured beneath the attaching strips 21.

The section 16 is cut to provide a cross partition 24 adjacent one end of the carton and a similar but oppositely disposed cross partition 25 adjacent the other member of the carton. As the two cross partitions are similar in construction the same reference numerals have been applied to the parts thereof. The cross partitions are connected to the front wall by triangular hinges 26 and to the attaching strip 17 by the triangular hinges 27, the connection to the cross partitions being along a score line. The cross partitions are joined to the non-rotating part of the egg-receiving section 16, as shown at 28, the connection being along score lines which preferably are positioned in line with the hinges 26 and 27. Below the hinge sections of the end cross partitions are the downwardly extending partition-interlocking sections 29. Above the lines along which the cross partitions are joined to the section 16 are the cover-supporting sections 30.

In erecting the carton from its collapsed position the walls are squared into rectangular cross-section and the cross partitions **24** and **25** are rotated in opposite directions so that the cover-supporting structures **30** are positioned beneath the cover of the carton and the lower portions **29** of the cross partitions are positioned as shown in Figs. 2 and 3 with the hook elements **31** thereon engaging the bottom of the carton through the openings **19**. It will be seen that the downwardly depending portions **29** of the cross partitions are cut from the material which is removed to provide the egg-receiving openings **20**. The hooks **31** on the cross partitions and the openings **19** in the bottom wall of the carton provide interlocking means whereby the cross partitions are maintained in an erect position to provide a secure end closure.

As shown, the hook elements **31** are in tapered formation, but in many cases it will be desirable to provide hook portions instead of or in addition to these elements for engaging beneath the material of the bottom section through the openings **19**, thereby affording direct support to the bottom. Also, such hook elements may be employed to maintain the bottom in upwardly raised cushion-forming position somewhat as described and shown in Troyk Patent No. 1,766,155.

The cross partitions are oppositely disposed with respect to each other and, as before stated, are rotated into erect position in opposite directions. The erection of the carton is quite simple and may be done by hand at a very rapid rate. All that is necessary is to rotate the two cross partitions into erect position after squaring the wall structure of the carton. When erected, the section **16** will be seen to provide a series of spaced transverse strips having egg-receiving openings therebetween and a series of spaced longitudinal strips integral with the transversely extending strips. The transverse strips are hingedly connected to the front and rear walls of the carton and the cross partitions are hingedly connected to the front and rear walls and to the longitudinal strips of the section **16**.

In this carton the horizontal strips comprising the section **16** do not move upon movement of the cross partitions and the cellular structure of the carton is provided by the horizontal strips. The material of the section **16** about the egg-receiving openings may be provided with cuts, which will allow the material to bend upon engagement with eggs carried in the carton, thereby cushioning the impact of the eggs with the material surrounding the egg-receiving openings.

Many other changes in the structure of the carton as described herein are possible without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A carton of the type described, comprising front and rear walls, a bottom wall, an intermediate rigid non-rotatable egg-receiving wall having horizontally and longitudinally spaced openings and extending between and being connected to said front and rear walls, and cross partitions hingedly connected to said intermediate wall and to said front and rear walls, said cross partitions being rotatable into erect position and having means for engaging the wall structure of the carton for maintaining said partitions in erect position.

2. A carton of the type described, comprising a single blank cut, scored and folded to form a rear wall, a bottom wall, a front wall, an intermediate rigidly attached non-rotatable egg-receiving section, an attaching strip secured to the rear wall, said egg-receiving section having horizontally and longitudinally spaced openings for individual eggs, and rotatable cross partitions adjacent the ends of the carton, said cross partitions having outer sections extending transversely of the carton and being positioned above said intermediate strip and adjacent the top of the carton when in erect position.

3. A carton of the type described, comprising front, rear and bottom walls, a substantially horizontal non-rotating intermediate wall having egg-receiving openings therein, and end cross partitions rotatably attached to said intermediate wall and extending above and below said wall when in erect position.

4. A carton of the type described, comprising front, rear and bottom walls, a substantially horizontal non-rotating intermediate wall having egg-receiving openings therein, and end cross partitions rotatably attached to said intermediate wall, said end cross partitions including an integral strip above said intermediate wall and spaced strips below said intermediate wall and having means for engaging the wall structure of the carton.

CARL H. LOWE.