April 14, 1936. J. W. COX 2,037,502

CARTON

Original Filed April 29, 1933 2 Sheets-Sheet 1

Fig. 1

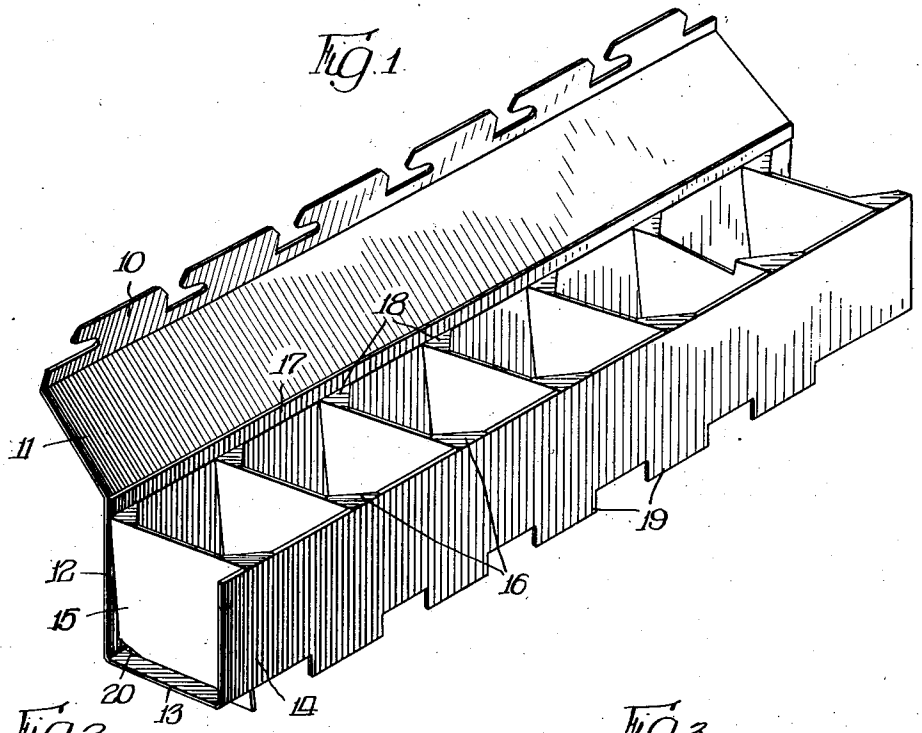


Fig. 2

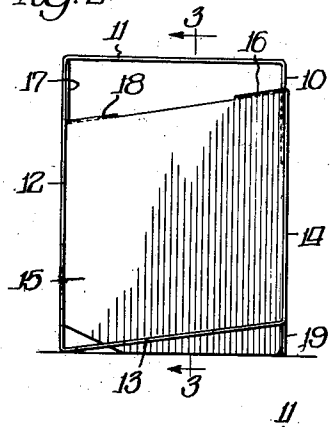
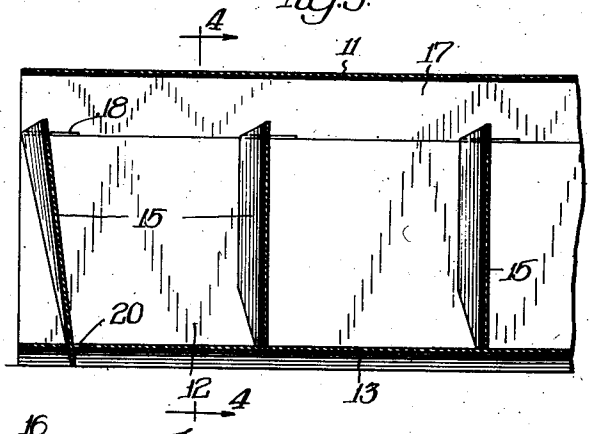


Fig. 3



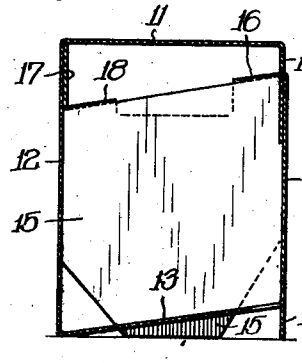


Fig. 4

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Fig. 5

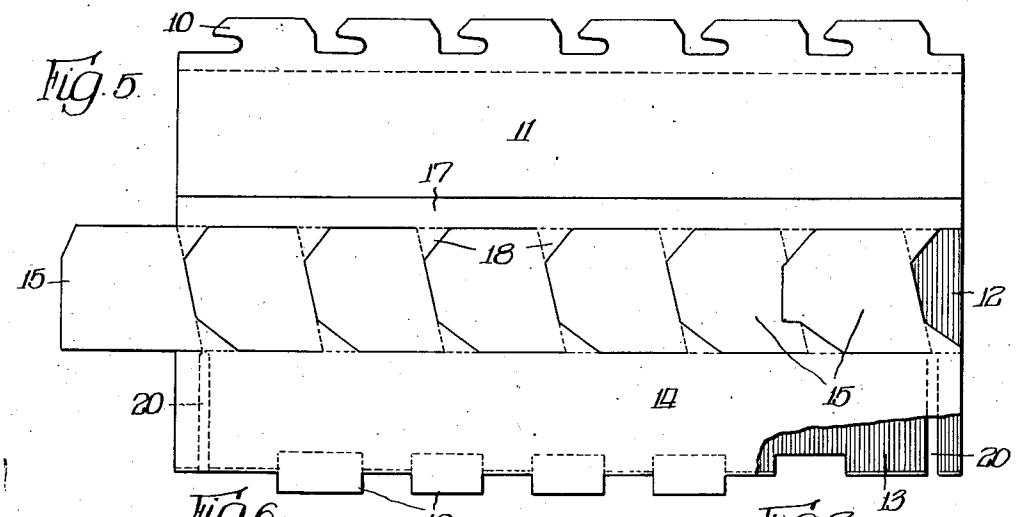


Fig. 6

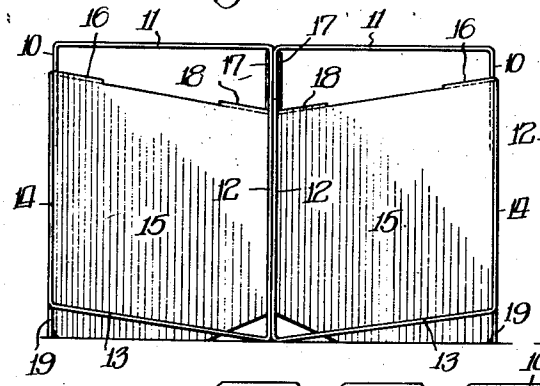


Fig. 7

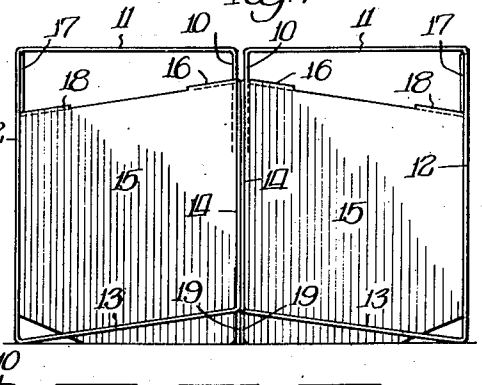
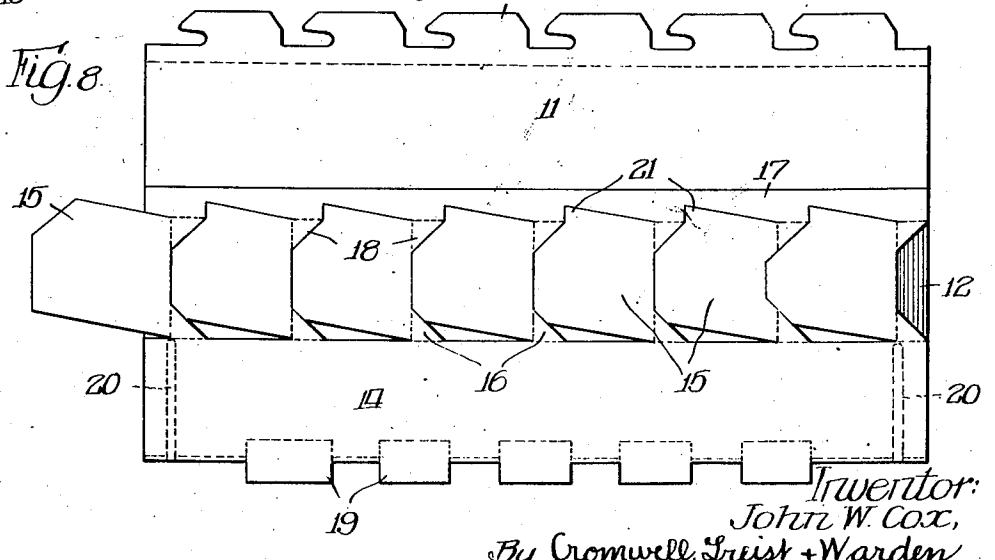


Fig. 8



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UNITED STATES PATENT OFFICE

2,037,502

CARTON

John W. Cox, Highland Park, Ill., assignor to Self-Locking Carton Co., Chicago, Ill., a corporation of Illinois

Application April 29, 1933, Serial No. 668,515
Renewed September 9, 1935

13 Claims. (Cl. 229—29)

My invention pertains to cellular cartons and relates particularly to an improved type of carton which adapts itself to severability or divisibility.

In the marketing of eggs the consumer often prefers to purchase the eggs in quantities of less than one dozen. As most egg cartons are constructed to contain one dozen eggs the problem is presented as to dividing the carton into two or more sections so that the customer may purchase less than one dozen without the need of removing the eggs from the carton and placing them in a paper sack or similar container. Many suggestions have been made heretofore as to the provision of a divisible carton, and it is to this type of carton that the present invention relates.

A particular object of the invention is to provide a carton unit which is simple in construction and lends itself to divisibility.

An additional object is to provide a cushion style carton unit of the so-called 1 x 6 size.

A further object is to provide a new type of cross partition for cellular cartons.

These and other objects will be apparent from the following description of preferred embodiments of my invention in their reference to the accompanying drawings, in which

Fig. 1 is a perspective view of the carton unit constructed in accordance with my invention;

Fig. 2 is an end view of the carton shown in Fig. 1;

Fig. 3 is a longitudinal section taken along line 3—3 of Fig. 2;

Fig. 4 is a cross section taken along line 4—4 of Fig. 3;

Fig. 5 is a plan view of the carton shown in Fig. 1 in collapsed or flattened condition;

Fig. 6 is an end view of two carton units of the type shown in Fig. 1 glued together along their back portions;

Fig. 7 is an end view of two carton units of the type shown in Fig. 1 glued together along their front walls; and

Fig. 8 is a plan view of a carton unit in collapsed or flattened condition and showing a modified arrangement of the cross partitions.

As shown in the drawings, the carton unit is constructed by suitably cutting, scoring and folding a blank of material to form in the order named a cover-locking strip 10, a cover 11, a rear wall 12, a bottom wall 13, a front wall 14, cross partitions 15 hinged to the top of the front wall by means of triangular web portions 16, an attaching strip 17 folded over and secured to the rear wall 12 and hinged to the cross partitions by means of triangular web portions 18. Heretofore it has been suggested to construct cartons of this general type and in such cases the body of the carton, composed of the front, rear and bottom walls, was of substantially rectangular cross section. When of such rectangular cross section the carton is easily collapsed by rotating the cross partitions into horizontal position and folding the carton along the bottom of the rear wall and the top of the front wall, but, due to the flat or horizontal bottom section of the rectangle, no protection is afforded eggs carried by the carton unless the entire bottom is spaced from a surface upon which the carton is positioned by means of projections extending downwardly from the front and rear walls.

In accordance with my invention, as represented by the embodiment shown in Figs. 1 to 7, inclusive, the attaching strip 17 is folded over and secured to the rear wall at such a height that the top of the cross partitions, when the carton is in erected position, will have a downward slant toward the rear of the carton. Also, the cross partitions are so cut that the rear triangular hinges 18 are offset with respect to the corresponding hinges 16 on the front wall. By reason of this bias, the cross partitions fold downwardly at an angle and when in vertical position maintain the front wall in upraised position with respect to the rear wall, the hinges 16 being considerably higher than the hinges 18, as shown in Fig. 4.

In producing the carton unit it is preferred to cut the cross partitions on the proper bias and to fold the carton along the score line which separates the bottom of the front wall from the bottom wall and to glue the attaching strips 17 to the rear wall, the flattened carton taking the shape shown in Fig. 5.

In order to provide means for securing the end cross partitions against displacement, the bottom of the carton is provided with slots 20.

The end cross partitions are provided with extra material, as shown in Fig. 5, which snaps into the openings 20 when the partitions are rotated into vertical position.

As will be seen from the drawings, the front and rear walls are in parallel relation and the bottom wall is parallel to a line extending between front hinges 16 and rear hinges 18, the bottom of the front wall being raised above the bottom of the rear wall, and the rear hinges 18 being lowered beneath the front hinges 16. The body of the carton as represented by the front and rear walls, the bottom section and the top edges of

the cross partitions assumes the shape of a parallelogram in cross section when the cross partitions are rotated into vertical position, with the front and rear walls substantially vertical. A series of lugs 19 are struck from the bottom section and allowed to remain integral with the front wall. When the carton is erected, these lugs prevent the carton from falling forwardly due to the upwardly slanting bottom section. That is, the lugs maintain the carton in vertical position and space the bottom section from a surface upon which the carton is positioned.

Although the lugs 19 extend downwardly from the lower portion of the front wall to a surface upon which the carton is positioned, these lugs play no part in maintaining the body of the carton in the shape specified. The function of the lugs or projections 19 is to space the bottom of the carton above a surface upon which the carton is positioned, thereby providing cushioning means for eggs carried by the carton. When the cross partitions are rotated into vertical position their outer edges contact the front and rear walls of the carton, preventing relative movement of these walls from their vertical position and locking the body of the carton in such a position that an acute angle is maintained between the rear wall and the bottom section.

In the embodiment shown in Fig. 8, the cross partitions are hinged in their usual manner, that is, directly across the carton, and the cushion-forming body portion is provided by extending the sides of the cross partitions into the attaching strip. More particularly, the upright edges of the cross partitions are cut on a bias to the top edges of the front and rear walls to provide outwardly projecting portions on the partitions. Thus, when the cross partitions are rotated into vertical position, the backwardly extending edges 21 of the cross partitions press against the rear wall and maintain the bottom section in cushion-forming position, the rear hinges 17 being lowered beneath the front hinges 16 an amount equal to the height the front wall is raised. In any case, it will be seen that the height of the front or higher wall below the hinges 16 plus the width of the bottom section equals the height of the rear wall below the hinges 18 plus the distance between the front and rear walls.

To form a dozen size carton, two units of the type described are brought together along their vertical walls and spot-glued. As shown in Figs. 6 and 7, the units may be secured together along their front or rear walls. If desired, the front wall of one unit may be secured to the rear wall of another unit. When spot-glued together, the units are easily separated by tearing apart, and when so separated, each unit is provided with a cushion bottom and means for maintaining the unit in erect condition.

The cartons described herein are susceptible of modification without departing from my invention. For instance, it will be understood that the cross partitions may be oppositely biased and lugs placed on the rear wall, whereby the bottom section may be made to slant upwardly toward the rear wall. All such embodiments are intended to be included in the appended claims.

I claim:

1. A cellular carton, comprising a rear wall, a bottom, a front wall having projections along its lower edge, and cross partitions hinged to said front and rear walls, said cross partitions being cut on a bias and operable to maintain the lower portion of said front wall above the lower portion of said rear wall when in erect position.

2. A carton unit having front and rear walls, a bottom section connecting the lower portion of said walls, and cross partitions hinged to the upper portion of said walls, said cross partitions being offset in such a manner as to maintain the bottom of one of said walls above the bottom of the other when in vertical position.

3. A carton, comprising front and rear walls, a bottom section connecting the lower edges of said walls, and cross partitions hinged adjacent the upper portion of said walls, said partitions being offset so that the hinge portions adjacent one of said walls are higher than the hinge portions adjacent the other of said walls and the bottom of the wall adjacent the higher of said hinge portions is maintained above the bottom of the other wall when the walls of the carton are in vertical position.

4. A carton, comprising front and rear walls, a bottom section connecting the lower edges of said walls, and cross partitions hinged adjacent the upper portion of said walls, said partitions being biased so that the hinge portions adjacent one of said walls are higher than the hinge portions adjacent the other of said walls and the bottom of the wall adjacent the higher of said hinge portions is maintained above the bottom of the other wall when said cross partitions are in vertical position, and the height of said higher wall below said hinge portions plus the width of the bottom section being equal to the height of said lower wall plus the distance between the front and rear walls.

5. A carton, comprising a rear wall, a bottom section, a front wall having downwardly extending lugs, and cross partitions hinged to said front and rear walls and extending at an angle thereto, the hinges adjacent the front wall being higher than the hinges adjacent the rear wall.

6. A carton, comprising a rear wall, a bottom section, a front wall having downwardly extending lugs along its lower edge, and cross partitions hinged to said front and rear walls, said cross partitions having an edge adjacent the rear wall extending outwardly, whereby to maintain an acute angle between the rear wall and bottom section.

7. A carton unit, comprising front and rear walls, cross partitions extending between said walls, and a bottom section joining the lower edges of said walls, said cross partitions being offset whereby to form a carton body having the lower portion of one of said walls extending adjacent the bottom of the carton and the lower portion of the other of said walls spaced upwardly from the bottom of the carton in cushion-forming position when the carton is in erect condition.

8. A carton, comprising front and rear walls, cross partitions extending between said walls and being secured to the upper portions thereof, a bottom section joining the lower edges of said walls, said cross partitions being offset whereby to form a carton body of substantially parallelogram shape and having one vertical wall in higher position than the other, and means for supporting said higher wall in said higher position.

9. A carton, comprising front and rear walls, the lower edge of one of said walls being higher than the lower edge of the other of said walls, a bottom section connecting the lower edge of said walls, rotatable cross partitions hinged to said walls and extending downwardly adjacent said

other wall at a non-perpendicular angle to the axis of rotation of said cross partitions, and means for supporting the lower edge of said one wall in said higher position.

10. A carton, comprising a collapsible body portion having front and rear walls and a bottom section, and cross partitions hinged to said front and rear walls, said cross partitions being foldable into flattened condition when the body portion of the carton is collapsed and being rotatable into erect condition when the body portion of the carton is erected and the lower portion of one of said walls is higher than the lower portion of the other.

11. A carton, comprising upright front and rear walls, the lower edge of one of said walls being higher than the lower edge of the other, a bottom section connecting the lower edges of said walls, and cross partitions hinged to said walls and having a lower portion contacting the lower of said walls.

12. A carton, comprising upright front and rear walls, the lower edge of one of said walls being higher than the lower edge of the other of said walls, a bottom section joining the lower edges of said walls, and cross partitions hinged to said walls, said cross partitions extending downwardly in contact with the lower of said walls and certain of said cross partitions extending through said bottom section.

13. A carton, comprising a body portion composed of longitudinal walls and a bottom, and cross partitions hinged to said longitudinal walls at different heights when the carton is in erect position to form fold lines which are non-perpendicular to said walls, said body portion and said cross partitions having engaging portions for maintaining said bottom in cushion-forming position when said cross partitions are folded along said non-perpendicular lines.

JOHN W. COX.