Dec. 19, 1939. C. H. LOWE 2,184,014

CHAIN CELL CARTON

Filed April 17, 1937

Fig. 1

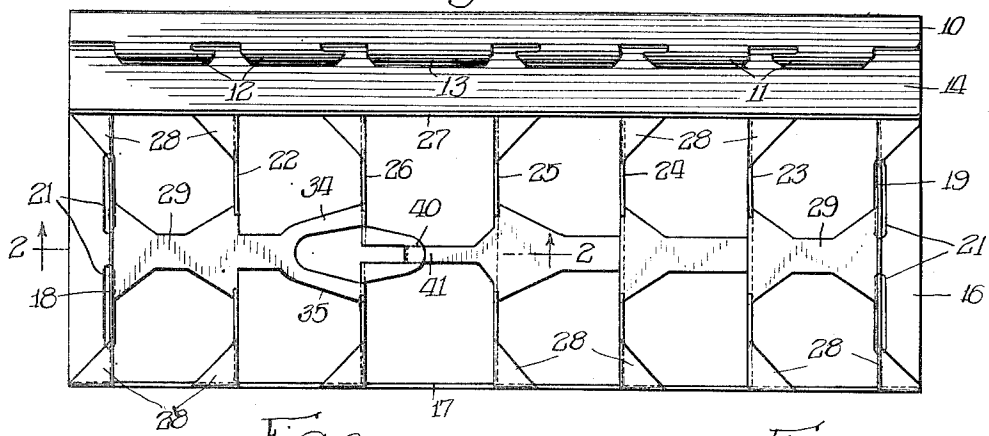


Fig. 2

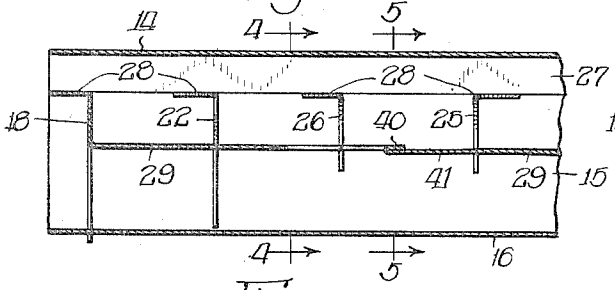


Fig. 6

Fig. 3

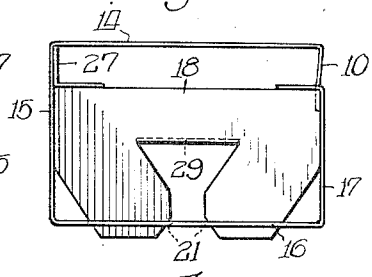
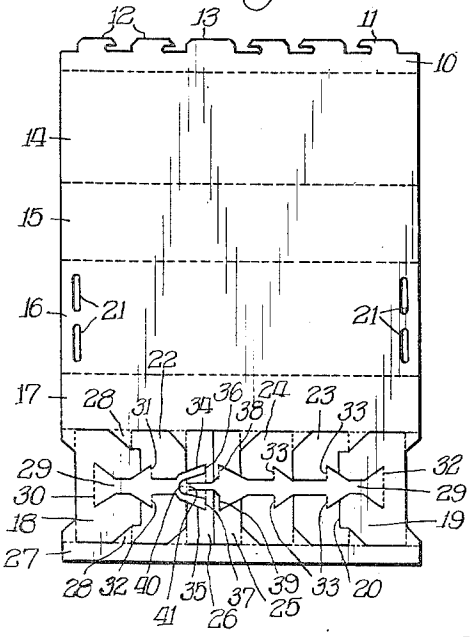


Fig. 4



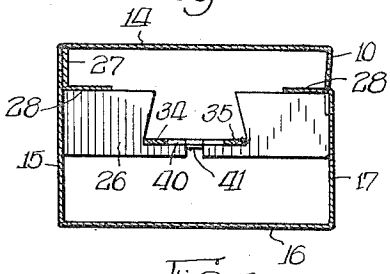
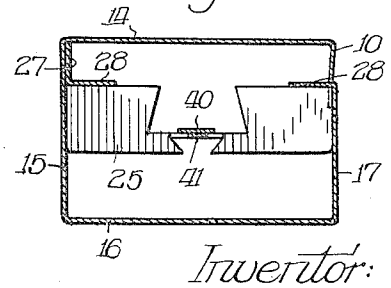


Fig. 5



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UNITED STATES PATENT OFFICE

2,184,014

CHAIN CELL CARTON

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Application April 17, 1937, Serial No. 137,446

5 Claims. (Cl. 229—29)

The present invention relates to cellular cartons of the type employed for packaging eggs and has particular reference to improvements in cartons of the type described in my copending application, Serial No. 63,140, filed February 10, 1936, now Patent No. 2,113,622 of which the present application is a continuation in part.

A principal object of the invention is the provision of a cellular carton in which a minimum amount of material is employed.

An additional object is to provide a cellular egg carton of the type described in my aforesaid copending application, in which there is provided a longitudinal partition extending through the center of the carton and being cut from the material of the cross partitions, the improved carton having its end cross partitions each extending inwardly and being provided with a split cell in the interior of the carton.

These and other objects will be observed from a consideration of the following description of 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 in erected position;

Fig. 2 is a fragmentary longitudinal section taken along line 2—2 of Fig. 1;

Fig. 3 is an end view of the carton;

Fig. 4 is a cross-sectional view taken along line 4—4 of Fig. 2;

Fig. 5 is a cross-sectional view taken along line 5—5 of Fig. 2; and

Fig. 6 is a view of the blank from which the carton is constructed.

In the production of cellular egg cartons it is customary to provide a body portion having cross partitions running transversely thereof and a longitudinal partition dividing the carton into two rows of egg-receiving cells. The cross partitions are cut from a transverse section of the same width as the carton and customarily extend in the same direction, one of the end cross partitions protruding from the end of the blank, as in the manner shown in Berkey Patent No. 1,124,266. As shown in the Berkey patent, a separate piece of material is used for the longitudinal partition. In my copending application the separate piece of material is eliminated and the longitudinal partition is produced by properly cutting and scoring the cross partition-forming section.

In accordance with the present invention there is provided a carton having a minimum amount of material and being provided with cross partitions and a longitudinal partition, the longitudinal partition being integral with the cross partitions and cut from the material thereof and the cross partitions on opposite ends of the carton extending toward each other.

As shown in Fig. 6, the carton is constructed from a blank having a cover-locking strip 10 with hooks 11 on one end extending inwardly of the carton and hooks 12 on the other end also extending inwardly. The innermost oppositely directed hooks 11 and 12 are spaced apart from a blank extension 13. The cover-locking strip is joined by means of the usual score line to a cover 14 which in turn is integral with a rear wall portion 15. The rear wall portion is separated by a score line from the bottom member 16. The opposite side of the bottom member connects with the lower portion of a front wall member 17. The upper portion of the front wall member 17 is joined to a cross partition-forming section which is cut and scored to form an end cross partition 18 adjacent one end of the carton and a similar cross partition 19 on the opposite end of the carton. Cross partitions 18 and 19 are directed inwardly and have extensions 20 which are adapted to pass through the openings 21 in the bottom member when the cross partitions are in erect position, as will be seen in Figs. 2 and 3. Adjacent cross partition 18 is an inwardly extending cross partition 22 and adjacent cross partition 19 are two consecutively positioned cross partitions 23 and 24, these partitions likewise being directed inwardly of the carton. The material between the cross partitions 22 and 24 is cut to form a split cell composed of a section 25 extending in the same direction as the partition 24 and a section 26 extending in the same direction as the partition 22.

Each of the cross partitions is joined on the side opposite front wall 17 to an attaching strip 27 which is folded over and glued to the rear wall, as shown in Figs. 3–5, to produce an assembled carton.

The cross partitions are connected to the front wall 17 and to the attaching strip 27 by means of triangular hinge members 28, the hinges being so positioned that the cross partitions can swing from the horizontal position in which they are shown in the blank to an erect position, as shown in the other figures.

To provide a longitudinal partition the cross partition-forming blank is cut and scored to form a continuous horizontal longitudinally ex-

tending strip indicated generally at 29. To form this strip the cross partition 18 is cut so as to have a relatively wide hinge line 30 and the strip 29 is attached to cross partition 22 by means of two spaced hinge lines 31, between which the material is supplied for the continuous strip. Cross partition 19 has a hinge portion 32 by which the strip 29 is attached and partitions 23 and 24 have spaced hinge portions 33, as shown in Figs. 1 and 6.

It will be noted that cross partitions 18 and 19 extend inwardly of the carton so that it is not necessary to cut the blank to form an end cross partition extending beyond the edge of the carton. When all of the cross partitions extend in the same direction and one of the cross partitions extends beyond the carton, there is quite a waste of the material due to the fact that the carton must be struck from a blank having total dimensions equal to the extent the end cross partition protrudes beyond the edge of the carton plus the width of the carton.

To provide for an integral longitudinal partition section constructed from the material of the cross partitions in the carton of the present invention the partitions 22 and 26 are cut to provide spaced yoke portions 34 and 35. These yoke portions respectively are joined to partition 26 along hinge lines 36 and 37. When the cross partition 18 is manually rotated into vertical position the partitions 22 and 26 likewise are rotated into vertical position by reason of the integral connection therewith of the strip 29, it being understood that the yoke portions 34 and 35 are a part of the strip 29.

The strip 29 is joined to cross partition 25 along the spaced hinge lines 38 and 39. The material of the strip 29 between hinge lines 38 and 39 tapers to a narrow strip which extends between the yoke portions 34 and 35. The material of cross partitions 22 and 26 are cut so as to provide the strip 29 with an extension or yoke section 40 which is joined to the strip 29 along a hinge line shown at 41 and has yoke portions extending about the narrow strip within and parallel to the yoke sections 34 and 35. The inner yoke member 40 is connected to the material of cross partition 26 along extensions of the hinge lines 36 and 37.

When the cross partition 19 is rotated from the horizontal position shown in 26 to the erect position shown in Fig. 1 the strip 29 pulls cross partitions 23, 24 and 25 into erect position. This movement causes the strip 29 to raise or depress the extension section 40 and to rotate the same into unfolded position, thereby providing the material for strip 29 and producing a continuous longitudinal partition throughout the carton which is longer than the distance between hinge portions 30 and 32 when the cross partitions are in horizontal or collapsed position.

The extension portion by which the longitudinal partition is formed is shown clearly in Figs. 1 and 2, in which the extension yoke 40 has been folded over in reverse position to provide the extra material insert for producing a longitudinal strip extending the full length of the carton.

The sets of cross partitions extending in opposite directions are more or less independent of each other in that either set can be rotated into vertical position without moving the other set. When the end cross partitions are moved into vertical position and engaged with the openings 21 the erection of the carton is complete and the cross partitions and longitudinal strip 29 are held in proper position.

The particular configuration by which the cross partitions are cut to provide the continuous strip may be different than as shown and the position of the split cells may be changed as desired. The adjacent reversely directed cells 25 and 26 are provided with a leading portion and a following portion which folds over to provide material for the extension of the longitudinal strip. The hinge portion by which the longitudinal strip is connected to the cross partitions is positioned off-center with respect to the hinges by which the cross partitions are secured to the walls so as to produce a "chain cell" construction in which the erection of the end member causes the other cross partitions to rotate into vertical position. The cross partition 26 is cut to provide three longitudinal partition sections. One of these sections includes the yoke members 34 and 35. Another of these sections includes the interior reversible yoke member 40. The third section consists of the narrow strip of the longitudinal partition hinged at 41 to the yoke member 40. The dimensions of the yoke member 40 and the narrow strip by which this yoke member is connected to partition 25 are substantially equal in total length to the distance between the hinge portions by which the cross partitions are connected to front and rear walls.

The construction described provides a carton of satisfactory construction in so far as the egg-carrying function is concerned and at the same time there is employed a minimum of paper. The carton is shown as having a flat bottom but may be constructed to provide a cushion bottom without departing from the scope of the invention.

Various other changes and modifications may be made and these are intended to be included in the appended claims.

I claim:

1. A carton of the type described, which comprises front and rear walls, cross partitions hinged to said walls and extending toward each other when in collapsed condition, said cross partitions being cut to provide a horizontal longitudinally extending strip having a leading portion and a reversing portion of a total length substantially equal to the distance between the hinge portions of said cross partitions.

2. A carton of the type described, comprising front and rear walls, two series respectively of cross partitions terminating in adjacent cross partitions of reduced width, said cross partitions being cut to provide an integral longitudinally extending strip and one of said adjacent cross partitions being cut to provide one longitudinal section connected to the other cross partitions extending in the same direction, another section connected to the adjacent cross partition, and a third reversible section connecting said last named sections to provide an extensible longitudinal partition.

3. A carton of the type described, comprising front and rear walls, a series of cross partitions extending inwardly from one end of the carton when in collapsed condition and a second series of cross partitions extending inwardly from the other end of said carton when in collapsed condition, said two series meeting in adjacent cross partitions of reduced width, and a longitudinally extending partition integral with and cut from the material of said cross partitions, said strip including a yoke portion connected to one of said adjacent cross partitions, and a second reversible

yoke portion connected to said one adjacent cross partition.

4. A cellular carton, comprising front and rear walls, adjacent cross partitions oppositely hinged to said walls, said partitions being connected by two integral sections each cut from the material of one of said partitions, said sections being of unequal length and the section of smaller length being in turned-over position.

5. A carton, comprising walls and a cross partition section extending between said walls, said section being cut to form oppositely foldable cross partitions having adjacent free ends when in collapsed position, the material of one of said partitions being cut to provide one strip hinged to said partition and extending away from said other partition and a second strip connected to said one strip and to said other partition.

CARL H. LOWE.