Oct. 9, 1928.

1,686,521

L. G. HARRISON

FOLDING EGG CARTON

Filed July 2, 1925

2 Sheets-Sheet 1

FIG. 1

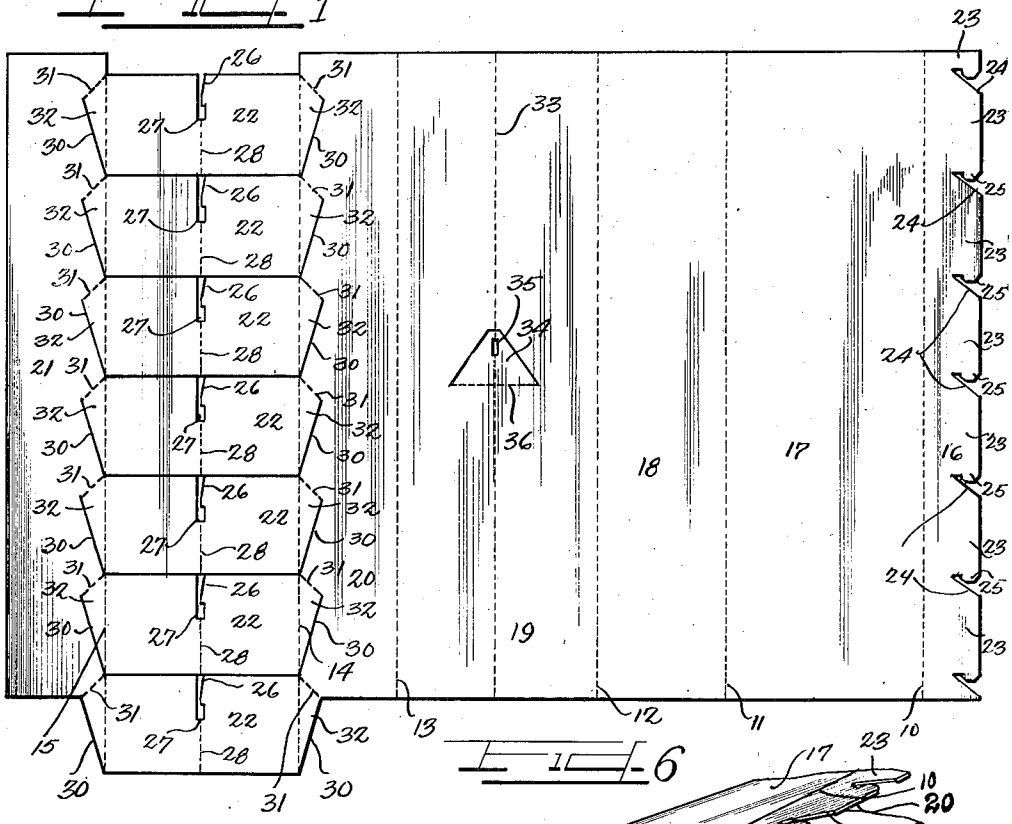


FIG. 6

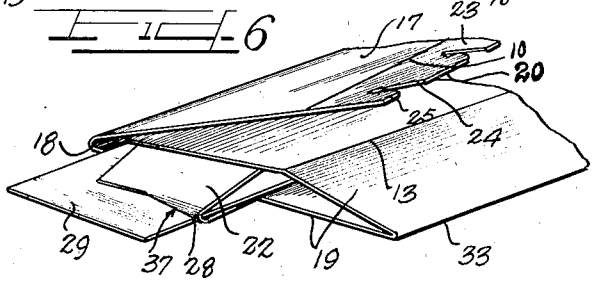
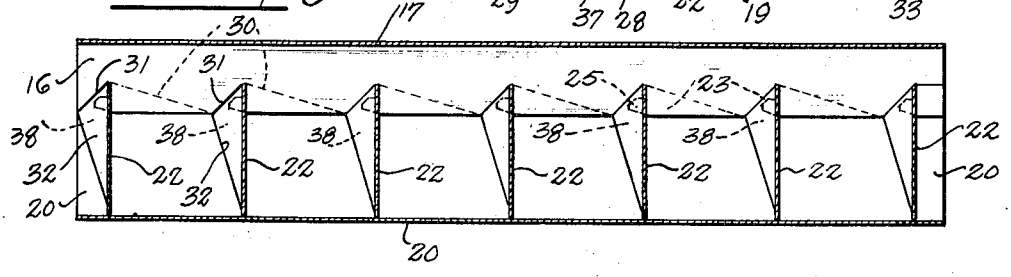


FIG. 5



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FIG. 2

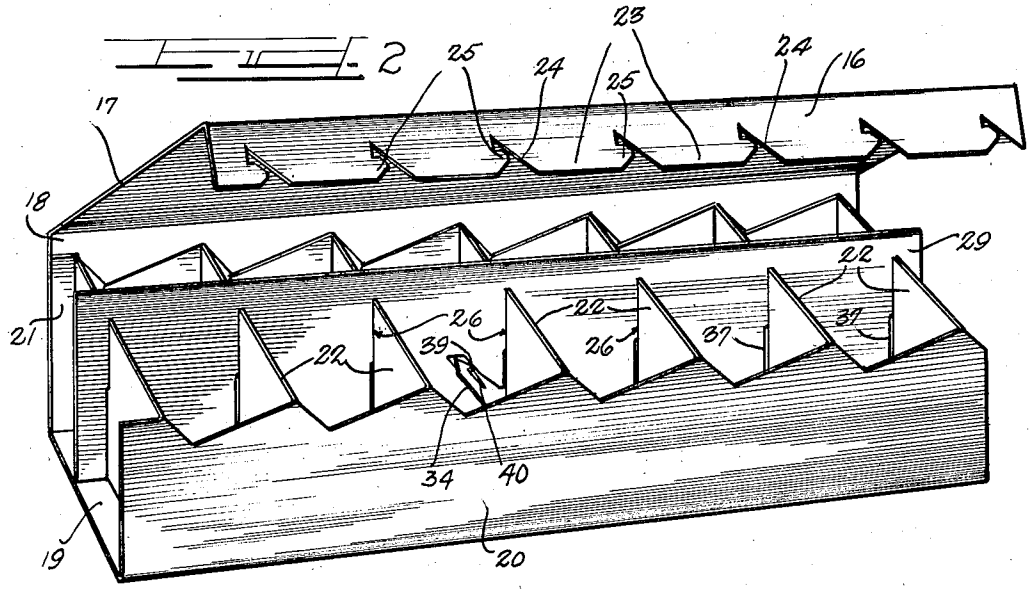


FIG. 4

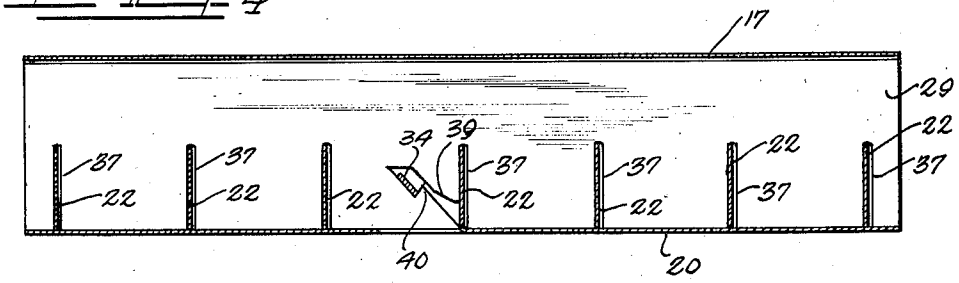
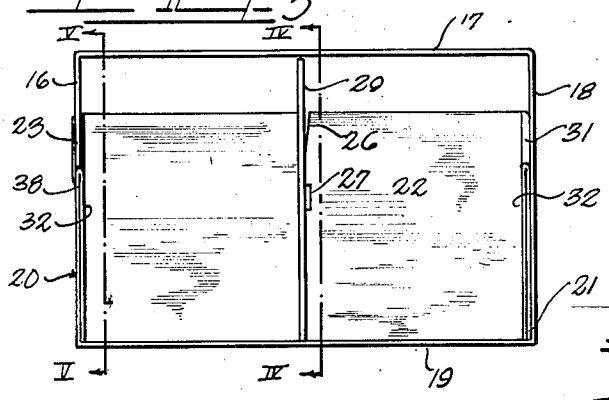


FIG. 3



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Patented Oct. 9, 1928. 1,686,521

UNITED STATES PATENT OFFICE.

LLOYD G. HARRISON, OF CHICAGO, ILLINOIS.

FOLDING EGG CARTON.

Application filed July 2, 1925. Serial No. 41,013.

This invention relates to new and useful improvements in cartons, particularly designed for the packaging of eggs, and has for its object the provision of a collapsible carton which may be opened for the reception of eggs and retained in such position without any assembly or makeup prior to the use thereof.

With the above and other objects in view, as will be apparent, this invention consists in the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings wherein Figure 1 is a plan view of the blank from which the present carton is made.

Figure 2 is a perspective view of the carton assembled.

Figure 3 is a transverse section taken through the carton with the lid thereof in position over the contents.

Figure 4 is a vertical section taken along line IV—IV of Figure 3, to illustrate the means whereby the carton is maintained in its open position for the reception of eggs.

Figure 5 is a similar view taken along the line V—V of Figure 4 to illustrate the means of locking the lid or cover in its operative position.

Figure 6 is a perspective view of one end of the carton collapsed, showing the relative locations of the parts in their collapsed positions prior to the distention thereof for the reception of eggs.

As is well known, cartons in which eggs are packaged for consumer delivery consist in a box divided by lateral partitions and a central longitudinal partition into a series of twelve compartments, each of which is designed to receive an egg. The ordinary variety of carton requires full and complete assembly and in some instances the carton is delivered to the candler collapsed with the central longitudinal partition separate and distinct therefrom. Both of these types of cartons require assembly or makeup. The first must be completely assembled and the second must be opened and the central longitudinal partition positioned to hold the lateral partitions in their vertical positions. In none of these cartons is any means provided for holding the carton in its made-up position so that the insertion of eggs therein is rendered difficult by the semi-collapse of the elements making up the carton. Thus the cartons which have been heretofore used are open to two objections, to-wit; the time and expense attendant upon the makeup or assembly thereof, and the constant tendency thereof to collapse during the filling process.

The present carton is designed to be delivered to the candler collapsed but does not require any assembly or makeup prior to its use. That is to say, all parts of the carton are in their proper positions when the carton is delivered to the candler and it is only necessary to open the carton and utilize the means illustrated in Figure 4 to lock it in distended position for the reception of eggs to be packaged therein.

Reference being had more particularly to the drawings, the blank illustrated in Figure 1 is scored at 10, 11, 12, 13, 14 and 15, to create the locking flap 16, the lid or cover 17, the rear side 18, the bottom 19, the forward side 20, and the transverse partition supporting flap 21. An examination of Figure 1 discloses that the transverse partitions 22 are formed from the blank and are located between the front side 20 and the transverse partition supporting flap 21. The locking flap 16 is located on the outer edge of the lid or cover 17 and is cut along its outer edge to provide the necks 23, each neck being oblique at one end as at 24 and having a locking teat 25 at the opposite end adjoining the oblique end 24 of the next adjacent neck 23. These oblique ends 24 of the necks 23 operate in a manner to be hereinafter described, to guide the locking flap 16 and the necks 23 into a position whereby the teats 25 will be engaged by the body of the carton to secure the lid or cover 17 in its operative position.

The transverse partitions 22 are provided with the central tapered notches 26 along what constitutes their upper edges when the partitions occupy vertical positions, which notches terminate in enlargements 27 located in the approximate center of the partition. Between the enlargement 27 of each partition and the edge of the partition opposed to the notch 26, the partitions 22 are centrally scored as at 28 to provide means whereby the transverse partitions may be folded medially of their length to rest flush against the longitudinal partition 29 located in the notches 26, as will hereinafter be more fully described, when the entire carton is collapsed.

From Figure 1 it will be observed that the transverse partitions 22 as well as the other elements heretofore described are formed from a single sheet of material, such as cardboard, so that the elements 16 to 22 inclusive

are all interconnected and are merely folded along the scoring heretofore described to occupy their designated positions. For this purpose oblique cuts 30 are provided at the ends of the partitions 22 to provide a means whereby each partition may be folded to occupy a final position at right angles to the remainder of the elements of the carton. Those portions of the connections between the blank as a whole and the partitions 22 that are not severed by the cuts 30, are scored as at 31 to permit the partitions 22 to be folded to swing to a position at right angles to the carton generally. The scores 14 and 15 which create the partitions 22 as hereinbefore described, cooperate with the cuts 30 and the scorings 31, to create triangular end flaps 32 at the ends of the partitions which occupy positions flush against the supporting flap 21 and the forward side 20 when the entire carton is assembled, as will be hereinafter apparent. It will be noted that the end flaps 32 extend in a vertical direction when the carton is formed from the blank and that on account of the scoring lines 14 and 15, which provide creases, a sort of vertical hinge is provided between each transverse partition 22 and its ends flaps. These end flaps 32 which lie parallel with the side walls of the carton, hence not only provide anchoring means for the cover, but they also provide hinge connection for the transverse partitions allowing ready collapsibility.

The bottom 19 of the carton is medially scored as at 33 to provide a means whereby the bottom may collapse outwardly when the carton is collapsed as illustrated in Figure 6. A triangular tongue 34 is also provided in and formed from the bottom of the carton and has a rectangular aperture 35 adjoining its free end whereby the tongue may be sprung inwardly along the scoring 36 at its base so that the aperture 35 may engage, as will hereafter be described, with the central longitudinal partition 29 to lock the partition 29 in its operative position and maintain the carton distended.

The longitudinal partition 29 constitutes a single strip of cardboard having a series of slots 37 along its lower edge whereby the partition 29 and transverse partitions 22 may be interlocked as shown in Figure 2. This is accomplished by inserting the partitions 22 in the slots 37 of the partition 29 so that the notches 26 in the transverse partitions 22 frictionally engage the unslotted portion of the longitudinal partition 29 and the slots 37 of the longitudinal partition 29 engage the unnotched portions of the transverse partitions 22.

After the blank has been cut and scored as shown in Figure 1, the partition supporting flap 21 is brought over the bottom 19 to rest flush against the rear side 18 of the carton, where it is fastened by gluing or otherwise. When, and as, this is done, the sides 18 and 20, through the scores 12 and 13, assume positions at right angles to the bottom 19 and the transverse partitions 22 swing about the scores 31 to assume vertical positions with the end flaps 32 resting against the front side 20 and the partition supporting flap 21.

These flaps 32, positioned at right angles to the partitions 22 and against the side 20 and flap 21, create a series of pockets or sheaths 38 between the side 20 and the flaps 32, the upper ends of which are obliquely closed by the connections having the scores 31. When it is desired to lock the lid or cover 17 in its closed position over the carton contents, the locking flap 16 is inserted to the rear of the front side 20 with one neck 23 positioned between each pair of transverse partitions 22. This insertion of the flap 16 causes the oblique end 24 of each neck 23 to ride on the closed side or end of one pocket 38 to guide the teat 25 of that neck 23 into the next adjacent pocket 38. Thus the cover is locked in its closed position at the front end of each transverse partition 22, by having one of the teats 25 engaged by the pocket 38 at the front end thereof.

After the blank has been assembled as hereinbefore described, the longitudinal partition 29 is interlocked with the transverse partitions 22, as described, and the entire carton collapsed, as shown in Figure 6, for delivery to the candler who opens it for use, in a manner to be described. In collapsing, the bottom 19 of the carton folds upon itself along the scoring 33 bringing the front side 20 to a position adjoining and spaced from the rear side 21. The partitions 22 and 29 are located between the sides 20 and 21, the transverse partitions 22 having bent along the scorings 28 to fold against the longitudinal partition 29 as shown. The lid or cover 17 rests over the whole structure. In this manner the carton is collapsed to occupy a minimum of space during shipment and storage prior to use.

To open the carton for the reception of the eggs, the lid 17 is raised and the longitudinal partition 29 is moved in a direction to straighten the transverse partitions 22 and at the same time the parts of the bottom 19 on each side of the scoring 33 assume coplanar position and the carton is ready for filling.

In order to lock the carton in its open position to prevent collapse during the filling thereof, the lower edge of the longitudinal partition 29 is provided with a notch 39 at an angle to the lower edge of said partition and to the plane of the bottom 19 when distended. One side of this notch 39 is provided with a tooth 40. As the carton is opened, the tongue 34 is projected inwardly and is engaged by the notch 39 during the movement of the partition 29 into which it extends until the aperture 37 of the tongue receives and engages the tooth 40. Thus the

longitudinal partition 29 is held from retrograde or collapsing movement and is held in its operative position whereby the carton is held open.

I claim is my invention:

1. The combination with a carton consisting of a bottom, sides and lid, of transverse partitions interposed between said sides and integrally connected therewith, a longitudinal partition interlocked with said transverse partitions, means whereby said bottom and transverse partitions may fold to collapse said carton, and means of cooperation between said bottom and said longitudinal partition for locking said carton in its distended position.

2. The combination with a carton consisting of a bottom, sides and lid, of transverse partitions interposed between said sides and integrally connected therewith, a longitudinal partition interlocked with said transverse partitions, means whereby said bottom and transverse partitions may fold to collapse said carton, and means on said bottom adapted to engage said longitudinal partition to hold said carton in its distended position.

3. The combination with a carton consisting of a bottom, a lid and sides, of transverse partitions interposed between said sides and integrally connected therewith, a longitudinal partition interlocked with said transverse partitions having a toothed notch in its lower edge, means whereby said bottom and transverse partitions may fold to collapse said carton upon the movement of said longitudinal partition relative thereto, and means formed from said bottom adapted to engage said toothed notch in said longitudinal partition to prevent the collapse of said carton.

4. The combination with a carton consisting of a bottom, a lid and sides, of transverse partitions interposed between said sides and integrally connected therewith, a longitudinal partition interlocked with said transverse partitions having a toothed notch in its lower edge, means whereby said bottom and transverse partitions may fold to collapse said carton upon the movement of said longitudinal partition relative thereto, and a tongue formed on said bottom for engagement with the teeth of the notch in the longitudinal partition aforesaid to prevent the collapse of the carton.

5. The combination with a carton consisting of a lid, bottom and sides, of transverse partitions interposed between said sides and integrally connected therewith, flaps on said partitions forming pockets with said sides, a longitudinal partition interlocked with said transverse partitions, having a toothed notch in its lower edge, teats on said lid for cooperating with said pockets for locking the lid in its operative position, means whereby said bottom and transverse partitions may fold to collapse said carton upon the movement of said longitudinal partition, and a tongue carried by said bottom for engagement with the teeth of the notch aforesaid in the longitudinal position for retaining the carton in its distended position.

6. In a collapsible carton, the combination with sides, of transverse partitions between said sides, a bottom, a longitudinal partition secured to said transverse partitions, said transverse partitions and bottom being arranged to collapse and be distended by the movement of the longitudinal partition relatively to said bottom and sides, and means of cooperation between the bottom and longitudinal partition operative as the latter moves relative to the bottom for locking the elements in their distended positions.

7. In a collapsible carton the combination with sides, of transverse partitions between said sides, a bottom all formed from a single section of material, longitudinal partition secured to said transverse partitions having a toothed notch in one edge thereof, said transverse partitions and bottom being arranged to collapse and be distended by the movement of the longitudinal partition relatively to said bottom and sides, and a tongue formed from said bottom to engage the toothed notch in the longitudinal partition when the elements are distended and the longitudinal partition moves relatively to the bottom for the purpose of locking them in such position.

8. In a collapsible carton formed from a blank which is cut and creased to provide a bottom, sides and transverse partitions between said sides, said partitions having end flaps normally parallel to the sides and connected thereto at their upper ends, and a cover adapted to be interlocked with said flaps.

9. A blank for a carton comprising a body portion scored to provide a cover, a front side, a bottom, a rear side, a scored portion comprising a plurality of transverse partitions, and a flap, the scored portion for said partitions having spaced cuts extending between the scoring thereof, and diagonal cuts extending from said spaced cuts into said rear side and flap, and scorings extending from the ends of said diagonal cuts in said rear side and flap to the adjacent spaced cut.

In testimony whereof I have hereunto subscribed my name.

LLOYD G. HARRISON.