This invention relates to improvements in folding egg cartons.

One of the important features of the invention resides in an egg carton for the retail sale of eggs, which when in its original set up position receives a dozen eggs but which may be broken in half and divided into two separate carton units, each unit adapted to contain a one-half dozen eggs. By such construction of carton, eggs may be originally packed, shipped, and placed on sale in dozen lots and should a dealer have occasion to make a sale of but one-half dozen eggs, the carton may be broken centrally into two separate units without disturbing the eggs contained therein.

Another feature of the invention is to provide a cushioned egg carton of the kind shown in the Lewkoff Reissue Patent No. 19,625, granted June 25, 1936, wherein the carton is constructed of a single blank of cardboard having a longitudinal partition and pivoted cross partitions which divide the body of the carton into twelve individual cell compartments for the respective eggs of a dozen lot. However, when breaking the carton midway of its length to divide the same into two separate carton units for dispensing half dozen lots, an additional cross partition is necessary to close one end of one of the carton units, and for this purpose, I provide a separate supplementary cross partition which may be normally nested within the carton and readily inserted into position to close one end of one of the carton units when the carton is broken to divide the same. By this construction, I am able to construct the carton from a blank of less stock than would be required if the supplementary cross partition were formed from the same blank as the other cross partition.

Another feature of the invention is to provide a one-piece cushion bottomed egg carton of the type having a fixed longitudinal partition, and cross partitions hinged connected to the front and rear walls of the carton body wherein the two end cross partitions fold inwardly in opposite directions to enable the cutting of the carton from a single blank of cardboard stock of true rectangular shape, thus eliminating waste of material which would otherwise occur if the end cross partitions were folded in the same direction.

With these and other objects in view, the invention resides in the certain novel construction, combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawings, in which:

Figure 1 is a plan view of the egg carton in collapsed position.

Figure 2 is a fragmentary top plan view of the carton in set up position with part of the cover broken away.

Figure 3 is an enlarged detail vertical sectional view on the line 3-3 of Figure 2.

Figure 4 is a perspective view of the supplementary cross partition.

Figure 5 is a fragmentary perspective view of the set up carton broken into two separate carton units, a portion of one of the units being broken away to illustrate the supplementary cross partition.

Figure 6 is an end elevational view of the carton unit having the supplementary end partition.

Figure 7 is an enlarged detail vertical sectional view on the line 7-7 of Figure 6.

Figure 8 is a vertical transverse sectional view taken on the line 8-8 of Figure 7.

Figure 9 is a plan view of the blank from which the carton is constructed.

Figure 10 is a view similar to Figure 7 but showing a modified form of supplementary cross partition.

Figure 11 is a perspective view of the modified form of supplementary partition.

Referring to the drawings by reference characters, the letter A designates the blank of material from which my improved collapsible egg carton is constructed. The material A is preferably stiff cardboard of the type customarily used in the construction of egg boxes and the blank shown in Figure 9 is of substantially rectangular configuration. The blank A is scored transversely from top to bottom on the lines 10, 11, 12, 13, 14, 15, 16, 17, and 18. The material beyond the score line 10 constitutes a cover lock flap 19, the free edge of which is provided with spaced locking tongues 20. The material between the score lines 10 and 11 constitutes a cover 21, while the score lines 11 and 12 divide the blank into a rear wall 22. The score lines 13 and 14 are broken score lines and connect with feet 23 which are cut from the material forming the bottom wall sections 24 and 25. The bottom wall section 24 is disposed between the score lines 12 and 13 whereas the bottom section 25 is disposed between the broken score line 15 and the continuous score line 16. The material between the score line 14 and the broken score lines 13 and 15 provides a pair of longitudinal partition walls 27. The longitudinal partition...
walls 27 are provided with a series of spaced slots or cut outs 29 which extend equidistantly on opposite sides of the broken score line 14 to provide notches 28 in the top of the central longitudinal partition which and said partition when the box is set up for use as will be hereinafter explained.

The unnotched portions of the longitudinal partitions formed by folding the partition walls flat against each other provide spaced projections along the top of the longitudinal partition which are adapted to enter passages preferably in the form of slots in the transverse partition about to be described during setting up or collapsing of the carton.

The material between the score lines 16 and the broken score line 17 constitutes front wall 30 while the material between the broken score lines 17 and 18 constitute a topwall 31, while the bottom edge of the blank below the broken score line 18 provides an attaching flap 32.

Cut from the top wall 31 is a plurality of cross or transverse partitions 33, all of which are preferably connected to the front wall 27 and attaching flap 32 on the dotted lines 34. The cross partitions 33 are so cut from the top wall 31 that the end cross partitions both fold inwardly and a bridge piece 35 is formed midway of the blank, there being four cross partitions on the left side of the blank and only three on the right side, and which when swung down to their set up position, divides the carton into twelve separate cells, it being understood that the cross partitions bridge the central longitudinal partition as shown in Figure 6.

The transverse partitions 33 are notched inwardly at their mid-portions from their inner sides to provide notches or passageways 27 which are preferably shown as slots. Each transverse or cross partition is foldable centrally and transversely upon its fold line 38 and which line extends from the inner end of its passageway 27 to the top or head end of the cross partition. The unnotched midportions of the transverse partitions are in transverse alinement with the respective cut outs 29 and are of a width equal to or less than the width of the slots or cut outs to be freely received therein during the setting up of the carton. All of the cross partitions with the exception of the second and fifth partitions from the left in Figure 9 are provided at their free bottom edges with tongues 40 which are received in slots 41 formed in the bottom wall sections 24 and 25.

The end partitions 33 are also provided with outer corner tongues 42 which are received in slots 43 in the front and rear walls when the said end cross partitions are swung to their down position.

The carton is initially set up to assume the position shown in the several views of the drawings, whereupon the longitudinal partition walls 31 are folded flat against each other on the fold line 14, and these two walls are fixedly secured together by an adhesive to prevent outward spreading of the walls. After forming the central longitudinal partition, the bottom wall sections 24 and 25 are bent outwardly, after which the front and rear walls 30 and 22 are bent upwardly and the top section 31 is brought over the longitudinal partition and secured to the rear wall by means of the attaching flap 32, which may be slotted or adhesively secured to the rear wall. Thus it will be seen that by folding and securing the various walls in the manner described, that the body of the box will assume the position shown in Figure 6 of the drawings, whereupon the bottom wall sections 24 and 25 extend upwardly and inwardly into meeting engagement from the rear and front walls respectively, and the front and rear walls extend upwardly and outwardly at a slight angle. The rear wall 22 is of a slightly greater height than the front wall and has the cover 21 hingedly connected thereto, whereby the cover may be swung over the box body and secured closed by engagement of the tab 28 with the transversely shaped portions 44 which connect the transverse partition walls with the front and rear walls. When the box is initially set up as shown in Figure 6, the legs 23 extend downwardly from the meeting edges of the bottom wall sections and provide a support for the central portion of the bottom wall. By folding the partition walls 27 flat against each other and fixedly securing the same together, the cut outs 29 provide notches 45 in the top of the central longitudinal partition and the open mouths of the notches are of a width at least equal to the length of the front, mid-portions of the transverse partitions and are disposed in alinement with the folded mid-portions of respective transverse partitions 33.

After the carton has been assembled in the manner just described, the transverse partitions 33 are folded inwardly to assume a vertical position, the slots 37 receiving the longitudinal partition while the tongues 40 extend through the respective cut out slots 41. From this set up position, the body of the carton may be folded flat as shown in Figure 1 for it is only necessary to press the front and rear walls toward each other, whereupon the top 31 and bottom wall sections 24 and 25 will move to a position substantially parallel to the fixed walls 27 of the longitudinal partition. To open the carton for use, the reverse action takes place, that is the front and rear walls are moved away from each other, the top wall 31 tending to limit the spreading of the top of the front and rear walls, while the fixedly attached partition walls 27 limit outward spreading of the inclined bottom wall sections 24 and 25. Upon opening of the carton body, the mid-portions of the transverse partitions freely enter the notches 45, while the unnotched portions of the longitudinal partition enter the slots or passageways 37 thereof, after which the cross partitions may be swung to vertical positions. Thus it will be seen that the carton body is set up for use to receive the eggs to be packed, the longitudinal partition and the seven cross partitions serving to divide the carton body into twelve egg receiving cells.

The construction of egg carton above described is substantially the same as that set forth in the Levkoff issue patent above referred to, with the exception that both of the end cross partitions 33 fold inwardly, and it is possible to avoid waste of material due to the fact that no end cross partition extends beyond the confines of the rectangular blank. This feature also facilitates the forming of two cross partitions 33 and 33', from one area of material approximately the area from which the other cross partitions are formed. The cross partitions 33 and 33' swing inwardly in opposite directions and are disposed adjacent the lower end cross partition 33 shown in Figure 9. The cross partition 33' swings in the same direction as the next adjacent end cross partition 33 whereas the cross partition 33' swings in the same direction as the remaining cross partitions 33.
The blank A is provided with a weakened tear line 46 which extends centrally and lengthwise of the blank from one end to the other, portions of the weakened lining being in the form of perforations 47 whereas other portions of the weakened line are slit 48. The weakened line 46 divides the carton into two separate sections B and C, the section B having four cross partitions whereas the section C contains but three cross partitions 33. The weakened line 46 however passes to the left of the bridge piece 35 to place the bridge piece to remain with the carton section C for a purpose now to be explained.

Assuming that the carton has been erected in the manner heretofore explained and packed with a dozen eggs and it is desired to break the carton into two separate sections as shown in Figure 5, and which are identified by the letters B and C. In view of the fact that section B contains four cross partitions, two of the cross partitions constitute end walls, therefore the section B constitutes a complete carton unit.

In view of the fact that carton section C contains but three cross partitions 33, it is necessary to provide a supplementary cross partition 48, the same being shown per se in Figure 4 of the drawings. The supplementary cross partition 48 is constructed of cardboard and includes a body portion 50 having a head portion 51 foldable from the body portion 50, the body portion 50 is of a shape conforming to the cross sectional shape of the carton body and is provided with a vertical slot 53 extending upwardly from the bottom edge and a slot 54 in alignment with the slot 53 and which extends into the head portion 51. The bottom edge of the supplementary cross partition 49 on opposite sides of the slot 53 is provided with feet 55.

The central longitudinal partition of the carton section C adjacent the open end thereof, is provided with a hook portion 56 which passes through the slot 54 in the supplementary partition 48. When the carton is collapsed as shown in Figure 1, the supplementary partition lies flat against the folded carton, but after breaking of the carton the supplementary partition 48 is swung into position by folding the same on the line 52 which crosses the bridge piece 35 to flex and abut the central longitudinal partition as shown in Figure 7, the slot 58 receiving a portion of the central longitudinal partition while the feet 55 extend into a set of end slots 41. It will thus be seen that the supplementary partition 49 is locked in position and constitutes an end wall for the carton section C.

Figures 10 and 11 of the drawings show a slightly modified form of supplementary cross partition designated 58 having a slot 57 extending inwardly from the bottom and centrally located, there being downward extending feet 58 on opposite sides of the slot. By reference to Figure 10, it will be seen that the modified form of supplementary partition is inserted vertically between the end of the central longitudinal partition and the bridge piece 38, the slot 57 receiving the central longitudinal partition while the feet 58 extend through a set of end slots 41. This form of cross partition is merely laid flat on the collapsed carton prior to its insertion into position.

While I have shown and described what I consider to be the preferred embodiments of my invention, I wish it to be understood that such changes and alterations as come within the scope of the appended claims may be resorted to if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A collapsible egg carton comprising a single rectangular blank of cardboard cut, folded and set up to provide a carton having a front wall, a rear wall, a bottom wall, a central longitudinal partition, a cover, and spaced cross partitions hinged to said front and rear walls adjacent the top thereof; said blank of cardboard being weakened on a line midway of and for the length thereof, the weakened line extending on a plane between the two spaced central cross partitions to enable breaking of the carton into two separate carton units along the weakened line, one of the central cross partitions constituting an end wall for one of the carton units, a connecting bridge piece between the front and rear walls at the adjacent end of the other carton unit, a separate supplementary cardboard cross partition, and means on the severed end of the other last mentioned carton unit for securing said supplementary cross partition in position against the said bridge piece for closing said end.

2. A collapsible egg carton comprising a single rectangular blank of cardboard cut, folded and set up to provide a carton having a front wall, a rear wall, a bottom wall, a central longitudinal partition, a cover, and spaced cross partitions hinged to said front and rear walls adjacent the top thereof; said blank of cardboard being weakened on a line midway of and for the length thereof, the weakened line extending on a plane between the two spaced central cross partitions to enable breaking of the carton into two separate carton units along the weakened line, one of the central cross partitions constituting an end wall for one of the carton units, a separate supplementary cardboard cross partition, a hook portion formed on the central longitudinal partition at the severed end of the other carton unit, the top of said supplementary cross partition having a vertical slot adjacent the top thereof for interlocking engagement with the hook portion and bent downwardly to a position parallel to the other cross partitions having means for securing said supplementary partition against outward movement.

3. A collapsible egg carton comprising a front wall, a rear wall, a bottom wall, a central longitudinal partition wall, a cover hinged to said rear wall, a plurality of spaced cross partitions hinged to the front and rear walls adjacent the top thereof and dividing the carbon into a number of individual cells when the same is set up for use, the transverse midportion of the carbon being weakened to enable breaking of the carton into two separate carton units, the cross partitions serving to close both ends of one of said carton units while one of the ends of the other carton unit is open and the other end thereof closed by one of the end cross partitions, a separate supplementary cross partition, releasable means for captively nesting said supplementary cross partition within the carbon substantially parallel to said cover when the carton is set up for use with the cover closed, and means for subsequently securing said supplementary cross partition to the open end of the last mentioned carton unit when the carton is broken into two separate carton units.

4. A collapsible egg carton comprising a carton body having a front wall, a rear wall, a cen-
tral longitudinal partition, and spaced cross partitions, a cover hinged to said rear wall, said carton body and cover being flat when in collapsed position, a weakened tear line extending midway and transversely of said carton body and cover and passing on a plane intermediate two of the central cross partitions, a separate supplementary cross partition for closing one of the ends of one carton section when the carton is broken along said weakened tear line, and means for captively connecting said supplementary cross partition to said longitudinal partition for folding into end closing position when the carton is set up for use and severed along said weakened tear line, said supplementary cross partition normally disposed flat against the collapsed carton body and cover.

5. A collapsible cellular egg carton formed from a blank of cardboard comprising a pair of carton sections normally joined together and severable along a transverse weakened tear line, one of said carton sections having integral end cross partitions at both ends thereof while the other of said carton sections has an outer end cross partition, a connecting bridge piece between the front and rear walls of said last mentioned carton section adjacent said weakened tear line, a separate supplementary cross partition, and interfitting means between said separate supplementary cross partitions and said last named carton section for securing said supplementary cross partition in position against the said bridge piece for closing that end of said carton section.

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