Aug. 10, 1943. G. C. MOORE, JR 2,326,244

EGG CARTON

Filed Jan. 15, 1941 2 Sheets-Sheet 1

Fig. 1.

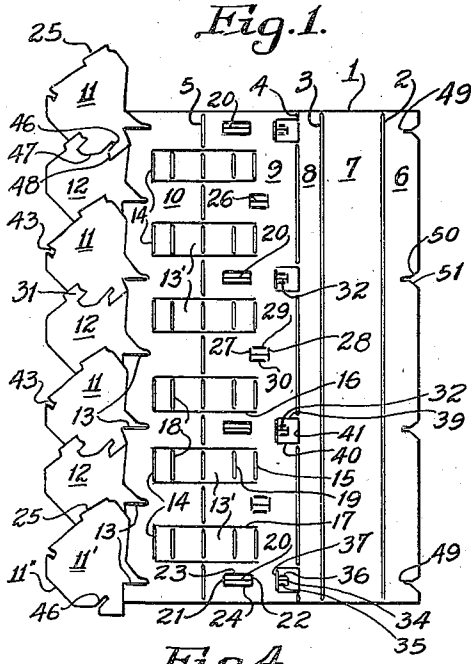
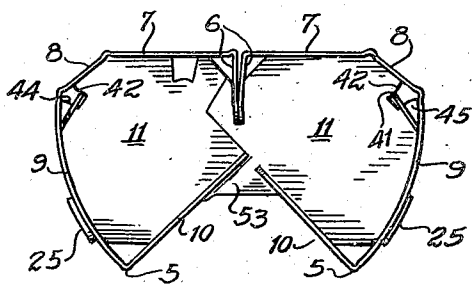


Fig. 4.

Fig. 5.



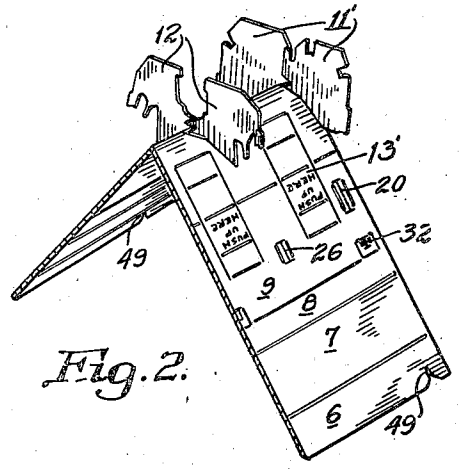


Fig. 2.

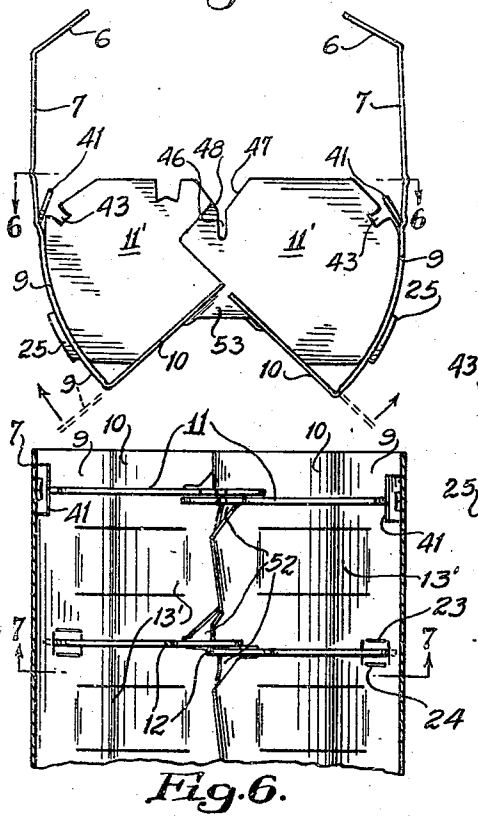
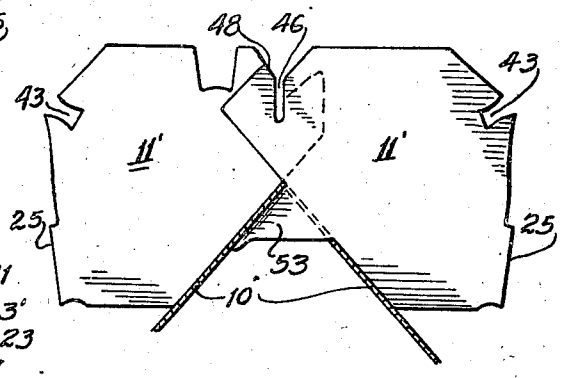


Fig. 6.

Fig. 3.



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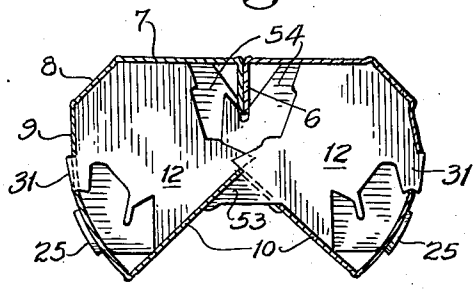
ATTORNEY.

Aug. 10, 1943. G. C. MOORE, JR 2,326,244

EGG CARTON

Filed Jan. 15, 1941 2 Sheets-Sheet 2

Fig. 7.



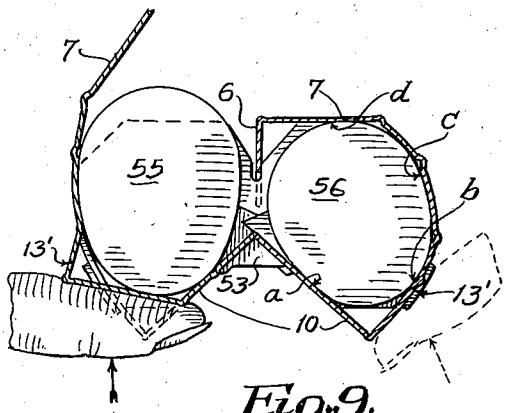


Fig. 9.

Fig. 8.

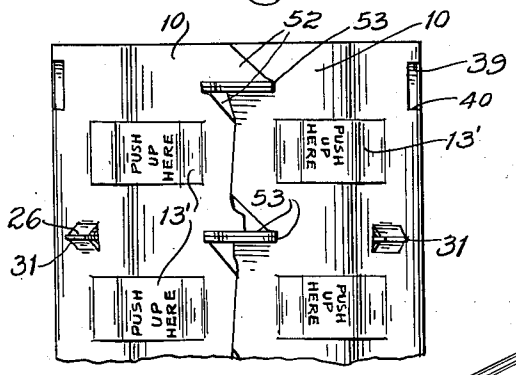
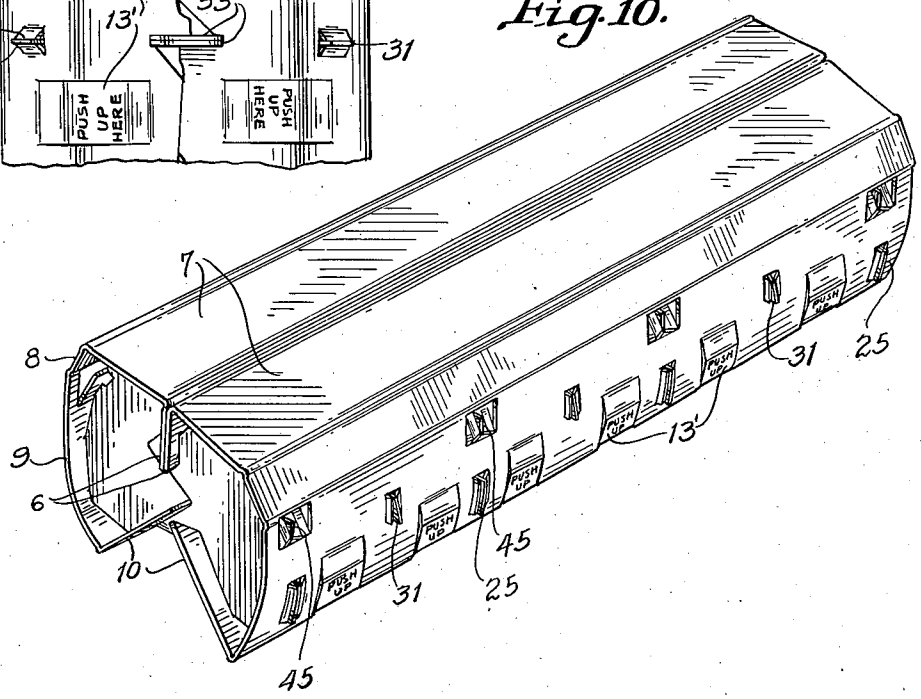


Fig. 10.



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UNITED STATES PATENT OFFICE

2,326,244

EGG CARTON

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Application January 15, 1941, Serial No. 374,518

17 Claims. (Cl. 229—29)

This invention concerns cartons and improvements therein. The invention relates particularly to egg cartons which are streamlined and designed to safely hold and transport eggs in separate compartments. Means are provided, when the carton is open, to aid removal of each egg by incorporating a movable lift strip at the bottom of the carton so that each individual egg can be readily grasped by the fingers.

Egg cartons are manufactured through a series of steps which usually include printing, die cutting, creasing, stripping, gluing and assembling. The steps of gluing, and much stripping are omitted in the manufacture of the carton of this invention, which, therefore, saves time, machinery, labor, and costs, resulting in an inexpensive carton that has a higher safety factor than known competitive cartons.

Each carton consists of only two complementary parts which are identically cut and scored, and which form the carton by identical folds and bends. Adhesive of any kind is not required to hold the carton together whether it is open or closed, loaded or unloaded. Each carton of average size requires only about 227 square inches of stock—very little of which is waste because there are only slight marginal cut-offs and no cut-outs whatsoever within the perimeter of the blank stock. Since the stripping operation is at a minimum, spoilage or damage to cartons is practically eliminated and cost reduced by eliminating the extra work of stripping such cut outs after die cutting the blanks.

The cut blanks of the cartons being identical, they can be conveniently stacked in flat form and shipped to egg packing houses in bundles having a minimum of compass. When assembling the carton, machine or by hand, stacks of different carton parts and glue jars are entirely dispensed with thus avoiding assembling delays.

The carton of this invention is easy to close and open, and when closed, it is automatically locked so as not to accidentally open. All parts are sturdy and designed to cushion the eggs in combination with lift means to aid their removal.

One of the principal objects of this invention is to present a carton for carrying small articles, such as eggs, in safety, and which can be conveniently packed and unpacked with facility.

Another object is to provide a carton that is sturdy, well cushioned, simple in construction and economical to manufacture.

Other objects, advantages and features of my invention will appear from the accompanying drawings, the subjoined detailed description, the preamble of this specification, and the appended claims.

Applicant is about to illustrate and describe one of the forms of his invention in order to teach one how to make, use and vend the same, but it is to be understood that the drawings and description thereof are not to limit the invention in any sense whatsoever, except as limited by the appended claims.

In the drawings:

Fig. 1 shows in developed view (plan view), one of the complementary parts of a carton, cut and scored in accordance to teachings of this invention.

Fig. 2 shows in perspective view, parts thereof being broken away, a pair of the sheets shown in Fig. 1 and as joined together in the first step of operation for forming a complete carton.

Fig. 3 is an end elevation of the upper portion of Fig. 2.

Fig. 4 shows an end elevation of a partly folded carton, a step in operation beyond the showing of Fig. 2.

Fig. 5 is an end elevation of the carton showing it closed.

Fig. 6 shows a horizontal end section of the carton taken substantially along the line 6—6 of Fig. 4.

Fig. 7 is a vertical section taken substantially along the line 7—7 of Fig. 6.

Fig. 8 is a bottom view of the carton at one end thereof.

Fig. 9 is a vertical section of the carton showing a detail thereof.

Fig. 10 is a perspective view showing a complete assembled carton with the cover closed.

The blank stock, from which the two complementary parts of the egg carton are to be die cut, may be of any material suitable for the purpose, such as cardboard, chip board, and the like. The reference character 1 indicates such a blank and is scored longitudinally along the lines 2, 3, 4 and 5 to form longitudinal spaces 6, 7, 8, 9 and 10. When the carton is folded, the space 10 of each blank becomes the inner bottom side, the scored line 5 becomes the runner or skid rail, the space 9 forms one side of the carton, the space 7 becomes the cover, the space 8, a biased corner, and the space 6 is the locking flap.

Each blank has a plurality of integral stampings along one edge, like stampings 11 and 12 and are alternately arranged as shown. The end stamping 11' is slightly different than stampings 11 and is cut along a plain biased edge 11'' since

it does not contact any adjacent stamping and hence forms an end partition for the carton. At their only place of attachment to the blank, they have scored impressions 13 which allows them to be easily twisted so that their planes lie at right angles to the plane at the rest of the blank 1.

All the stampings 11 are identical and all the stampings 12 are identical, and when the like stampings are arranged adjacent one another, they form transverse partitions along the carton as illustrated in Fig. 6. For instance, the first partition of the carton would consist of a pair of stampings 11, the second partition of a pair of stampings 12, and so on alternately until the end of the carton is reached.

Equally spaced longitudinally along each blank are a plurality of push sections 13', each of which is divided by the scored line 5, the longitudinal limit of each push section being the end scored lines 14 and 15, and the lateral limits the cut-through lines 16 and 17. Toward the ends of each section are scored lines 18 and 19.

Between the lines 4 and 5 of each blank, there are a plurality of slits 20 having cross cuts 21 and 22 at their ends and parallel spaced apart scored lines 23 and 24 along the slits which extend from cross cut to cross cut, as shown.

These slits 20 are designed to snugly receive the tongues 25 of the stampings 11 of the complementary blank 1. Therefore, these slits are alined with the scored lines 13 of the stampings 11 and spaced therefrom so as to readily receive the tongues 25 when the carton is folded.

Also between the lines 4 and 5 are a plurality of slits 26 having cross cuts 27 and 28 at their ends. Parallel to the slits and reaching from cross cut to cross cut are the spaced apart parallel scored lines 29 and 30. These slits 26 are designed to snugly receive the tongues 31 of the stampings 12, see Fig. 7.

Along the line 4, are a plurality of slits 32 having end cross cuts 33 and 34 and spaced apart parallel scored lines 35 and 36. Extending beyond the cuts 33 are the short scored lines 37 and 38. A relatively large flap is formed by the scored lines 37 and 38, and the cut lines 39, 40 and 41 arranged as shown. These flaps are bent inward of the carton and the cuts 41 adapted to engage the side edges 42 of the recesses 43 in the stampings 11 see Fig. 5. The opposite sides 44 in conjunction with the edges 45 of the stampings 11 form a tongue that engages the slits 32 thus making a braced and locked fit of all these elements so as to firmly, yet resiliently, hold the carton at these points. The edges 42 and 44 are slightly curved so as to aid the assembly of these elements, and also to aid the locking of the flap edge 41 in the recess 43.

The stampings 11 are each provided with a deep rectangular recess 46 having its upper edges biased as at 47 and 48. These recesses are designed to receive the cover flaps 6 and aid in locking same to prevent accidental opening of the cover. The cover flaps are provided with a plurality of recesses 49 and have their edges biased at 50 and 51 so that the recesses 49 can easily be straddled over the bottoms of the recesses 46 of the stampings 11.

When the stampings are turned at right angles to the plane of the blank 1, lateral openings 52 are created along the abutting edges of the assembled carton, see Figs. 6 and 8, allowing portions 53 of the partitions, formed by the stampings 11 and 12, to pass across the underside of the carton and materially aid in strengthening the carton transversely and longitudinally thereof.

The push elements 13' are forced slightly outwardly, see Fig. 9, when the carton is folded. This step in the folding operation, provides a bottom cushion for the egg and also makes it easier to lift the egg by the finger whenever so desired. To aid removal of the eggs by hand, finger spaces 54 are provided along the longitudinal center of the carton. These spaces were created in the stampings 12 by the cut-away tongue portions 25. Since the complementary partition halves 12—12 do not meet at the top of the completed carton, ample finger room prevails for grasping any egg and removing it from the carton.

In Fig. 9, eggs 55 and 56 are shown in the carton with one side cover raised and egg 55 lifted. The other side of the carton shows how the eggs normally lie in the carton. Note that egg 56 is well cushioned on all sides. At the point *a* one side of the egg rests against the flexible bottom 10; at the point *b*, the other side of the egg is resiliently supported upon the loosened push element 13', and the points *c* and *d* of the egg are cushioned against the flexible sides 9, 8 and the top 7. Other parts of the eggs have lateral cushioned support offered by the partitions 11—11 and 12—12. Thus, by this construction, the eggs are well cushioned and protected in a sturdy carton that is easy to open and close.

The folding process is executed as follows: First, take two of the blanks and turn all the stampings 11, 11' and 12 thereof so that their planes are at right angles to the planes of their respective blank. Second, turn the outer printed surfaces of the blanks toward each other with the stamps at the top. Third, bring the stampings of the blanks together sliding the stampings of one blank past the stampings of the other blanks to form the cross partitions, the parts 53 of one set of stampings on one blank fitting into the recesses 52 of the other blank so that the assembled pair of blanks appear as they are shown in Fig. 2 of the drawings. Fourth, the blanks are then bent around the edges of the stampings or partitions, the sharp bends being made along the scored lines 5, 4 and 3 consecutively, and thus forming the bottom, side, corner and top walls 10, 9, 8 and 7, respectively. During this operation, the tongues 25 are forced through the slits 20, and the flap edges 41 are pressed inwardly to engage the recesses 43 while the edges 44 thereof are forced into the slits 32 so as to lock the carton sides into place. Fifth, the cover flaps 6 may then be bent sharply along the scored lines 2 and forced into the recesses 46 of the paired stampings, and pushed on down until the recesses 49 snugly engage the outer sides of each portion. The carton is thus completed and the cover locked in place. No adhesive is used for holding any part or parts of the cartons in assembled position. Note that the right bottom section, and the left cross partition are formed from one blank and that the left bottom section and the right cross partition are formed from the other identical blank.

Having thus described my invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A carton for eggs and the like comprising two blanks with partition stampings along one of their edges, said stampings having scored connection with their respective blanks and adapted to be turned at right angles to their respective blanks, said stampings forming partitions in the

carton when the two blanks are folded to form the carton, one blank and its stampings forming a right carton side and left partition sides respectively, and the other blank and its stampings forming a left side of the carton and right partition sides, respectively.

2. An egg carton made of two individual shaped blanks, partition stampings along one edge of each blank and bent at an angle to the blank, said blanks having their stampings locked together in partial overlapping relation and the blanks forming an inverted V-shaped bottom, slightly curved sides, top covers and friction flaps therefor adapted to abut one another when the carton is closed, said stampings forming partitions in the carton and dividing it into cells, friction engaging means along the outer edges of each stamping, the friction engaging edges of each stamping engaging the side wall of its complementary blank so as to form a unitary carton, said overlapped portions of alternate stampings providing cross braces beneath the bottom of the carton and cover flap friction holding means at the top of the carton for the purposes described.

3. In a cellular holder, a pair of generally rectangular sheet blanks bent to form the bottoms and sides of two side-by-side trough portions of the holder and having corresponding edges thereof in adjacency, two series of partition members, one integral with each blank and disposed at right angles to the trough portion thereof and disposed to lie partly within the trough portion of the other blank, corresponding partition members of the blanks having adjacent faces thereof substantially co-planular to provide opposite cells in the trough portions of the holder, and interlocking means between an edge of certain partition members of one blank and the trough portion of the adjacent blank acting to maintain the blanks against lateral separation.

4. In a cellular holder, a pair of generally rectangular sheet blanks with parallel bends to form the bottoms and sides of a pair of side-by-side troughs having adjacent edges, two series of partition members, each series projecting from one of said edges at right angles thereto and the partition members of each blank being disposed partly within the trough of the other blank, one edge of the partition members of each blank engaging a wall of the trough of the adjacent blank to maintain said blanks in a predetermined side-by-side relation.

5. A cellular holder comprising a pair of generally rectangular sheet blanks forming the bottom and sides of the holder, each blank being bent intermediate its edges to provide a pair of troughs having inner side walls whose upper edges are adjacent each other, the blanks being formed with a plurality of integral oppositely spaced partition members projecting outwardly from said adjacent edges together with a notch beside each partition member extending inwardly from said edges, the partition member of each blank extending into the adjacent notch of the other blank with edge portions of certain of the partition members engaging a wall of said other blank to provide fixedly secured cell partitions in each trough.

6. In a cellular holder for eggs or the like, a pair of substantially rectangular blanks of flexible sheet material, each being bendable to provide the sides and bottom walls of a trough which extends in side-by-side adjacent relation with the other trough, each blank having along its edge proximate to the other blank a plurality of integral but separate partition-forming members connected thereto by a bend line, whereby said partition members may be swung into parallelism at substantially right angles to the troughs of the holder and to extend partly into and across the trough of the other blank, and interlocking means on certain of said partition members and the blanks for securing said blanks with their troughs in adjacent parallel relation.

7. In a cellular holder for eggs or the like, a pair of separate sheet blanks bendable in parallelism to form the bottom and sides of a pair of troughs having adjacent edges, a plurality of cross walls each extending transversely across each trough, each cross wall comprising two complementary co-planular members joined integrally with one of the adjacent edges of the two blanks and extended therefrom crosswise of the trough of the other blank, and means providing an interlocking connection between each cross wall member and one trough wall at a point remote from said adjacent edge.

8. In a cellular holder, a pair of generally rectangular sheet blanks forming the bottom and sides of the holder, a series of partition-forming members unitary with and at right angles to an edge of each blank, corresponding partition forming members of the two series being arranged in substantially transversely aligned pairs to provide cell partitions in the holder, the partition-forming members having adjacent bottom edges in planes converging upwardly, and the bottom forming portion of each blank engaging said edges of the partition-forming members of the other blank for retaining the blanks and associated partition-forming members in holder forming position.

9. In a cellular holder, a pair of generally rectangular sheet blanks longitudinally bendable intermediate their edges to provide a pair of parallel troughs, substantially transversely aligned partition forming members integral with adjacent edges of the blanks, the adjacent inner wall of the trough provided by each blank being engaged by corresponding edges of the partition-forming members of the other blank, certain of said partition-forming members having vertically disposed recesses, and said blanks providing covers for said troughs terminating in flaps frictionally engageable in said recesses to hold the covers in position.

10. A holder for eggs or the like comprising two companion blanks each having slits extending inwardly from one edge to provide between them a plurality of tongues adapted to be turned from the plane of the blank into substantially parallel, uniformly spaced, relation, the two blanks being adjacently disposed so that the parallelized tongues of the one are substantially aligned with those of the other, and each blank being bent to provide a trough one edge of which is adjacent the base of the several slits defining the tongues integral therewith, each of the tongues formed on one blank being extended to lie transversely of the trough of the other blank to provide cross walls therefor, and interlocking means on each blank and certain of the tongues extended from the other blank for maintaining the two blanks in unitary relation and the troughs thereof against collapse.

11. The method of producing, from two companion blanks each having a plurality of tongues formed along one edge thereof, a holder for eggs or the like which comprises the steps of turning all the tongues into parallelism, in substan-

tially aligning the parallelized tongues of the two blanks in closely adjacent relation, in bending each blank into the form of a trough into which the parallelized tongues of the other blank are extended to provide cross walls therefor, and in interlocking certain of the tongues with the blank trough into which they extend at points remote from their integral connection with the other blank whereby to maintain the two blanks in unitary relation.

12. A carton made of two separate adjacent blanks each bendable to provide slanting sides converging to join at the bottom to form a trough, two sets of transverse partitions, one integral with each blank and each set turned to lie transversely of and within the trough of the other blank, and interengaging means on each partition and blank into whose trough it is extended acting to support one slanting side thereof.

13. A carton made of two separate blanks in assembled relation and together forming an elongated inverted V-shaped bottom with outer diverging sides, a plurality of transverse partitions having means along their edges to engage the diverging sides of the carton, said transverse partitions comprising two sets of stampings, one integral with each blank and each set of stampings disposed transversely of the bottom, the stampings of one set occupying coplanular positions with the stampings of the other set, and each stamping vacating an opening adjacent its point of juncture with the blank to which it is integrally joined, each pair of co-planular stampings being in part overlapped and extended through one of the openings to form double partitions on the under side of the carton.

14. An egg carton made of two separate individual blanks in side-by-side relation, partition stampings along one edge of each blank and bent at an angle thereto, said blanks having their respective stampings locked together in partial overlapping relation, means defining lines of bend for the blanks such that each is predisposed to form an inverted V-shaped bottom with side walls one of which supports a top cover and a friction flap thereon, the two flaps being engageable with each other when the carton is closed, said stampings of one blank extending crosswise to form partitions in the V-shaped bottom of the blank and dividing it into cells, one blank forming the right side of the carton and the left stampings of each partition, and means along the outer edge of each stamping engageable with the side wall of the complementary blank and coacting therewith to support the same.

15. In a cellular holder for eggs or the like, two sheet blanks bent to provide the bottoms and opposite sides of a pair of side-by-side adjacent troughs, a plurality of cross walls each integrally joined with one of the two inner sides of the adjacent troughs and extending transversely across the other trough, and means on the inner wall of the trough into which each cross wall is extended in separable engagement therewith and acting to restrain movement of the cross walls from their positions transversely of the holder.

16. An egg carton comprising two complementary sheet parts each being trough-folded and assembled with the other part to provide a carton having adjacent right and left troughs, each of said parts having a plurality of adjacent co-planular partitions joined thereto and extending transversely therefrom within the trough of the other part, and means interlocking the assembled parts, so that one sheet part provides the right side of the carton and the partitions for the left part and the other sheet part provides the left side of the carton and the partitions for the right side.

17. An egg carton comprising parallel folded blank parts providing an inverted V-shaped bottom having parallel spaced skids and upwardly and inwardly angled side walls and cover portions, said cover portions terminating in flaps for locking engagement adjacent the apex of the bottom of the carton, and cooperating pairs of partition units extending across the interior of the carton from opposite sides of the V-shaped bottom, one of the partition units being integral with one side of the V-shaped bottom and extending between the other side of the V-shaped bottom and the adjacent side wall and the other of said pair of units being integral with the last named side of the V-shaped bottom and extending between the first named side of the V-shaped bottom and its adjacent side wall, and said pair of units having overlapping portions adjacent the longitudinal center of the carton mutually embracing the apex of the V-shaped bottom and locking flaps of the cover portions.

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