

March 3, 1936.

N. W. MELLARS ET AL

2,032,373

EGG CRATE AND PACKING

Filed Oct. 20, 1931

3 Sheets-Sheet 1

Fig. 1.

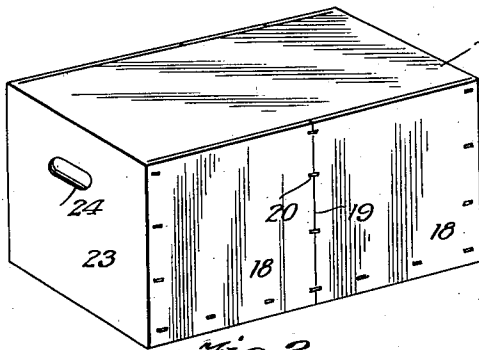


Fig. 2.

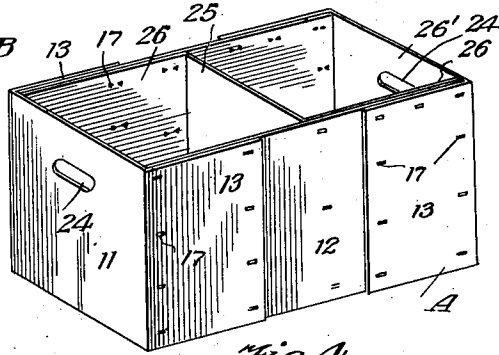


Fig. 3.

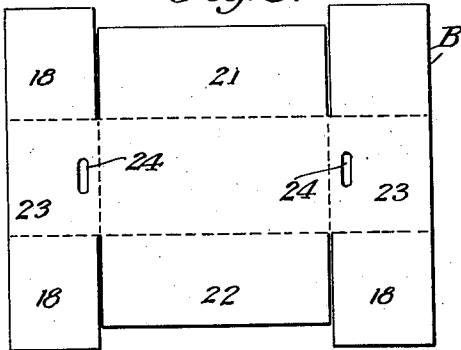


Fig. 4.

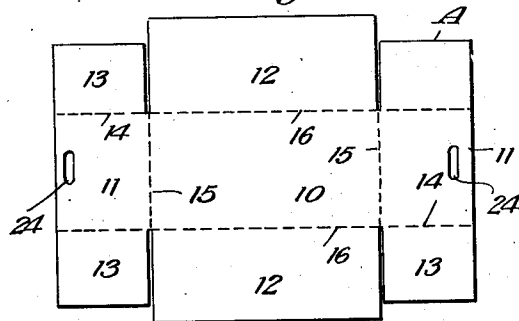


Fig. 5.

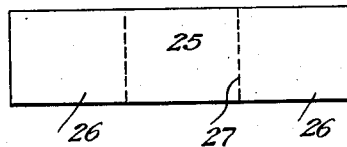
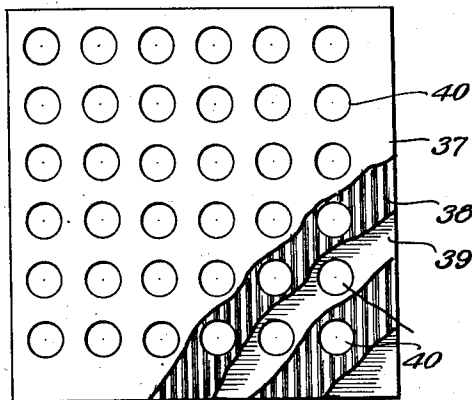


Fig. 8.



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3 Sheets-Sheet 2

Fig. 6.

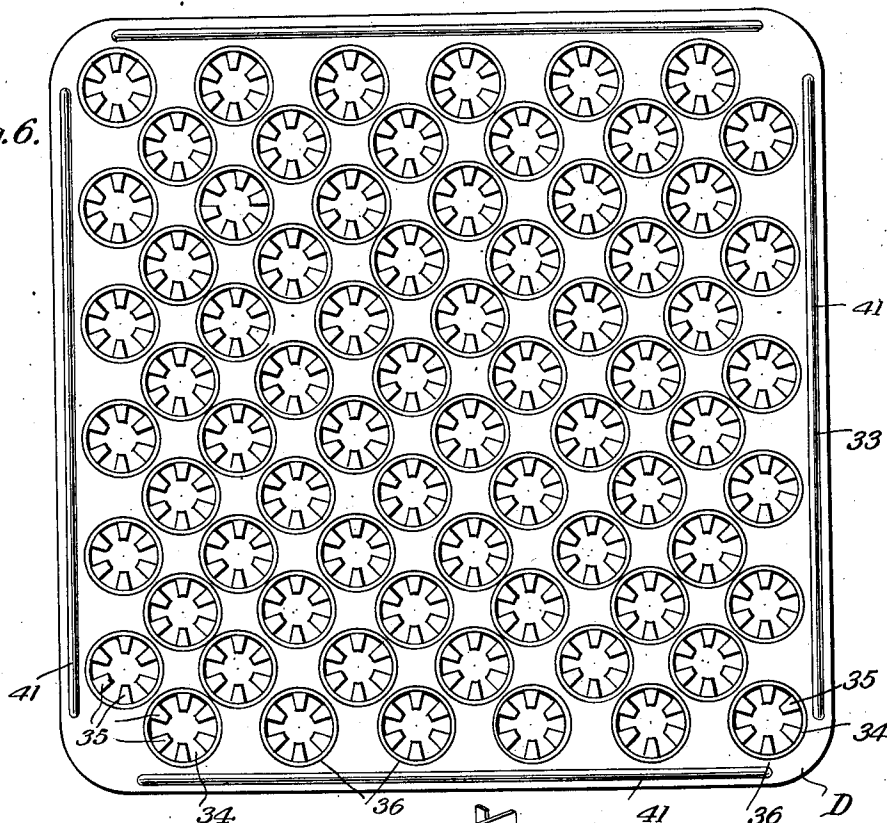
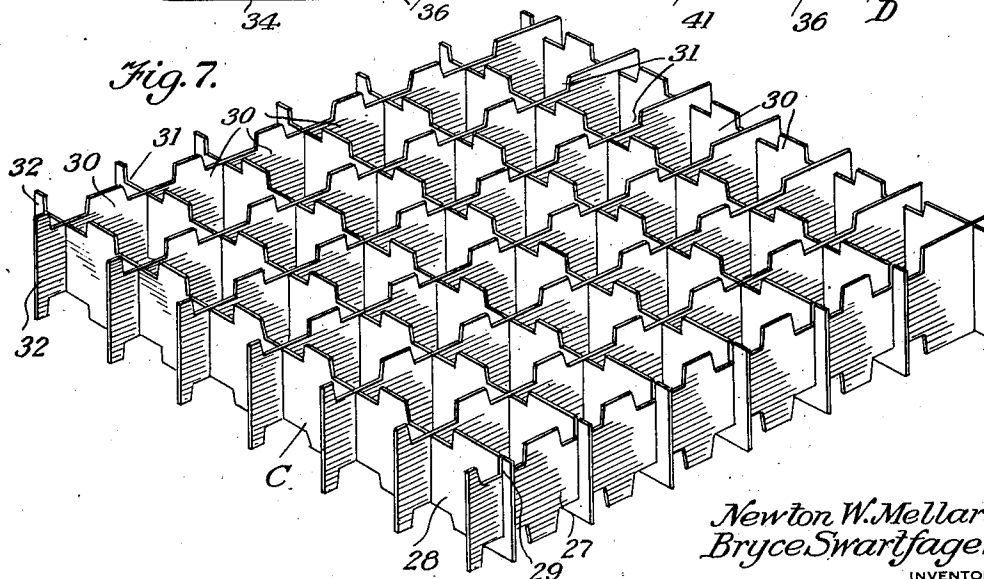


Fig. 7.



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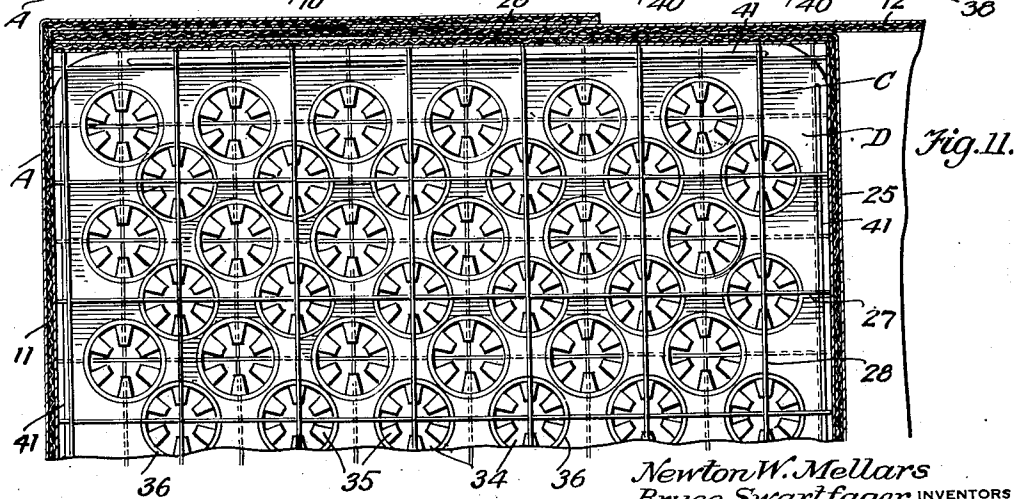
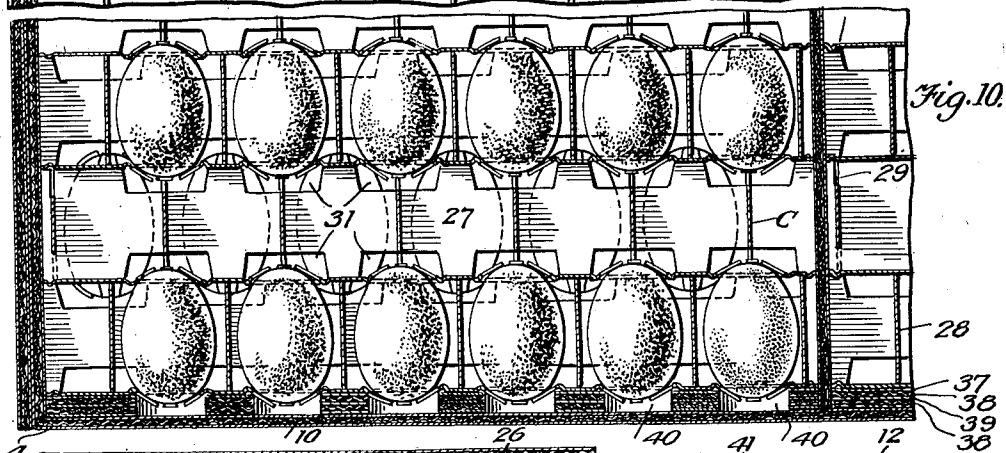
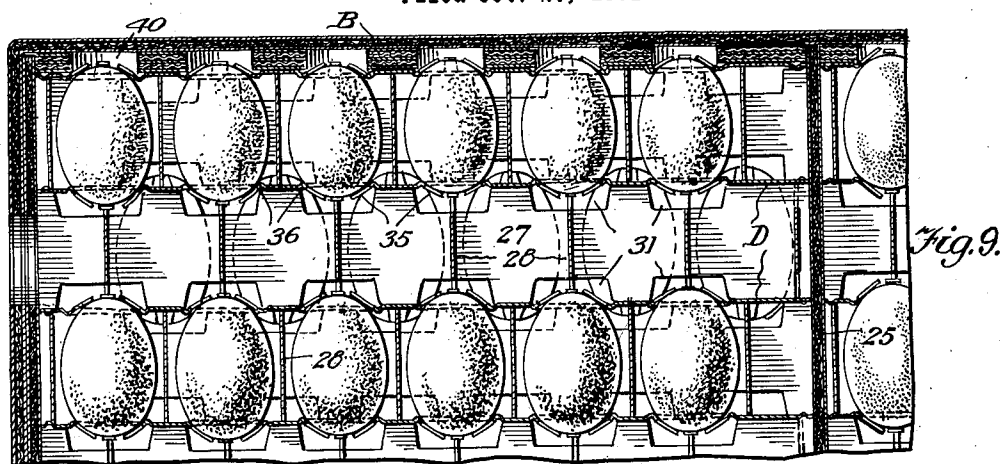
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3 Sheets-Sheet 3



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2,032,373

EGG CRATE AND PACKING

Newton W. Mellars, San Francisco, and Bryce Swartfager, Santa Rosa, Calif., assignors, by direct and mesne assignments, of one-fifth to Frederick W. Mellars and one-fifth to Kitchener K. Newsom, both of San Francisco, Calif., and one-fifth to W. E. Clayton

Application October 20, 1931, Serial No. 569,966

15 Claims. (Cl. 217—35)

The invention relates to a carrier and article nesting arrangement therefor and more especially to packing constructions for eggs or other fragile articles.

5 The primary object of the invention is the provision of a construction of this character, wherein eggs or other fragile articles can be packed so that the same will be suspended in separated relation to each other to avoid possible contact with each other or with any fixed portion of or within a container or carrier therefor, the suspension being of yielding, adjusting and gripping characteristics as well as assuring the requisite ventilation and light control while 10 the packing is of the staggered principle and in the transportation and handling the liability of breakage or the derangement in the packing is reduced to a minimum, thereby assuring safety both in the transportation and handling of the 15 packed eggs or articles.

Another object of the invention is the provision of a construction of this character wherein there is employed a novel form of container and a novel form of packing so that eggs or 20 other fragile articles can be packed for transportation thereof in quantities and the same handled as a unit without breakage, as the eggs or articles are individually supported in suspension and in separated relation to each other and in staggered form, with the supports for the eggs or other articles operative to absorb shocks and jars incident to transportation and handling and self-adjusting as well as having firm gripping action for retensioning of the eggs or articles 25 in set condition or nested within the container.

A further object of the invention is the provision of a construction of this character wherein eggs or other articles can be packed in rows spaced from each other and in superimposed 30 tiers with the rows of each pair staggered with respect to the rows of the next adjacent tiers both above and below and the eggs or articles of the respective rows held nested in suspension through the instrumentality of mats, these being 35 of novel form and of a kind to prevent contamination as the material from which the same are made will be devoid of harmful ingredients and also will eliminate any absorption of moisture which necessarily would cause the formation of 40 mold and the accumulation of impurities.

A still further object of the invention is the provision of a construction of this character, wherein the container is of a kind that will be highly protective to its contents both in transportation thereof and in the handling of the 45

same and is possessed of strength and durability as well as enabling packed sealing thereof desirable in preserving the contents when held in storage.

A still further object of the invention is the provision of a construction of this character which is comparatively simple in make-up, thoroughly reliable and efficient in its purposes, light of weight yet possessing maximum strength and durability and also inexpensive to manufacture. 50

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed. 55

In the accompanying drawings:

Figure 1 is a perspective view of a container or carrier constructed in accordance with the invention.

Figure 2 is a view similar to Figure 1 showing the body of the container or carrier with the cover part removed therefrom. 60

Figure 3 is a plan view of the blank from which the cover part of the container or carrier is made.

Figure 4 is a similar view of the blank from which the body of the container or carrier is made. 65

Figure 5 is a plan view of the divider or partition part of the body when in blank form.

Figure 6 is a plan view of one of the mats of the nesting construction employed within the container or carrier. 70

Figure 7 is a perspective view of one of the nesting frames as employed for use in the container or carrier. 75

Figure 8 is a plan view of a cushioning section for association with the container or carrier in the packing of eggs or other fragile articles therein, and the same being broken away at several areas to disclose adjunct tiers. 80

Figure 9 is an enlarged fragmentary vertical sectional elevation showing the nesting frames and mats in their associated relation within the container or carrier for the packing of eggs therein. 85

Figure 10 is a view similar to Figure 9 of another sectional elevation. 90

Figure 11 is a fragmentary horizontal sectional view showing in plan the mat and nesting frame with relation to each other. 95

Similar reference characters indicate corresponding parts throughout the several views in the drawings:—

Referring to the drawings in detail and particularly Figures 1 to 5 inclusive, the container 55

or carrier comprises a body unit A and a cover unit B the latter being adapted to be telescoped onto the body unit A which latter comprises a body formed from a single blank of paper board with a corrugated center cut to provide a bottom 10, ends 11, sides 12 and overlapping extensions 13, these being integrally formed with the ends 11 and are foldable on crease lines 14 while the ends are foldable on crease lines 15 and likewise the sides 12 being foldable on crease lines 16. The sides are integral with the bottom 10 and likewise the said ends 11 are integral with the bottom. In the setting up of the body, the sides 12 are folded on the crease line 16 to be disposed at right angles to the bottom 10 and likewise the ends 11 are foldable on the crease lines 15 to extend at right angles to the bottom 10 while the overlapping extensions 13 are folded on the crease lines 14 to overlie the sides 12 exteriorly thereof and these extensions are made secure to the sides through the medium of suitable fasteners 17 either of a permanent or detachable character and in the latter nest the said body can be rendered collapsible.

The cover unit B is formed identically to the body unit A and is preferably made from the same material excepting that the overlapping extensions 18 are of greater extent than the extensions 13 so that with these overlapped sides of this unit B the confronting edges of such extensions as at 19 meet each other and are joined in this fashion through the medium of the fasteners 20 which straddle the joints therebetween. The fasteners 20 also join the extensions with the sides 21 of the cover unit B and in this fashion the latter is materially reinforced at opposite sides thereof. The cover unit B has its sides and ends of uniform depth to the sides and ends of the body unit A so that the container or carrier can be sealed about the free edges of the cover unit to render the same fluid tight. The ends 11 and 23 respectively of the body and cover units A and B are provided with matching slots 24 constituting and engaging openings for the easy carrying of the container or carrier in the handling thereof during transportation or for placement of the same. These slots 24 can be sealed if found desirable by adhesive tape or otherwise for the sealing of the container or carrier.

Within the body unit A is a vertical center transverse partition or divider 25, the latter being made from a blank with extensions 26, these being reversely folded on crease lines 27 to each other to confront opposite sides of the body unit A and also reversely extending therein and secured to said sides by the fasteners 17 or other like fasteners so that in this manner the body unit will be divided or separated into two like sized chambers or compartments 26 for the packing of eggs or other fragile articles therein in a manner presently described.

The packing of eggs or other fragile articles within the compartments 26 is accomplished by the use of nests C and mats D respectively. The nests C each comprises a frame formed of a plurality of spaced crossed partitions or separable strips 27 and 28 respectively, these being inter-fitted by slot formation 29 therein and are suitably interlocked with each other to provide rows of pockets or cells 30, these rows being parallel with respect to each other throughout the extent of the said nest. At the crossing points of the partitions or strips 27 and 28 and at the top and bottom edges thereof are provided notches 31 for

a purpose presently described. The nests at two adjacent sides thereof have the ends 32 of the partitions or strips 27 and 28 extended to a greater degree than the other opposite remaining ends thereof and the purpose of this is to enable interchangeable and reversible setting of the nests superposed with respect to each other within the compartments 26 to properly mesh such nests with the mats D confined therebetween for the suspension of eggs or other fragile articles within the cells or pockets 30 in these nests in staggered rows with the eggs or other fragile articles of the rows of one tier offset or staggered with relation to the eggs or other fragile articles in the rows of the sub and super tiers in the nesting thereof.

Each mat D is interposed between the nests C when in staggered relation to each other or in other words these mats D are adapted to be disposed above and below each nest C and these when staggered above each other there is located therebetween the said mats D. Each mat comprises a sheet 33 of flat relatively thin formation, preferably made from pulp board or other suitable material not containing harmful ingredients and preferably of non-absorbing characteristics and this sheet as a part of its construction has stamped or otherwise formed therein, uniformly irregular, or other shaped seats or apertures 34 arranged in rows equi-distanced apart, the seats of one row being staggered with relation to the seats of the next adjacent row and preferably these seats each is of circular formation and cut into to provide spaced radially disposed inwardly tapered fingers 35, these converging to the center of said seat 34 but permanently removed therefrom. The fingers 35 in the seats 34 of adjacent alternate rows thereof are reversely distorted or bent so that said fingers will support eggs or other fragile articles at opposite ends thereof when disposed within the pockets or cells 30 in the nests C, while the fingers in the seats 34 in one row of one sheet 33 will underlie eggs or other fragile articles when engaged in these seats to support the lowermost ends thereof, while the fingers in the seats 34 in one row of a superposed sheet 33 will overlie or overhang such eggs or articles of this particular row thereof at the upper most ends of such eggs or articles and in this fashion these eggs or articles will be yieldably suspended within the cells or pockets 30 of the nests C. The staggered relation of the seats 34 of alternate rows enables the disposition of registration of the seats of one row with the cells or pockets 30 of one nest C, while the seats 34 of the next row will register with the notches 31 in the edges of said nests C so that on the packing of the nests and the arranging of the mats therewith the eggs within the pockets 30 of superposed nests will be held yieldably suspended in the seats 34 by the fingers 35 and the rows of eggs or other fragile articles so suspended will be staggered in one tier relative to those in another underlying or supertier and in this manner the eggs will be prevented from possible contact with each other or with the walls of the pockets or cells 30, thus avoiding breakage either in transit or during the handling of the container or carrier, thus packed in the manner before indicated.

Conforming to the shape of the seat 34 and entirely about the fingers 35 is a reinforcement 36 which is effected by distorting the sheet marginally about the seat 34 constituted therein and this will give added strength and support to the sheet

so as to avoid the breaking away of the seat or elongation of the fingers 35 therein.

Adapted to be located within each compartment 26 of the container or carrier both above and below the stacked nests C as well as the assembled mats D therewith are cushioning sections 37, these being of a shape corresponding to the compartments 26 to snugly fit therein and to confront the bottom of the body unit A and the top of the cover unit B respectively. Each section 31 is preferably in the form of a paper board having double corrugated filling 38 and a separating layer 39 therebetween, the section being formed with rows of spaced holes 40, these rows being spaced apart in parallel relation to each other and the group of rows of said holes 40 are offset from a pair of the side edges meeting each other of the sections so as to have the holes register with the seats 34 in the mats D next adjacent thereto for appearance of the fingers 35 at said holes 40 in these sections 37, this being clearly illustrated in Figures 9 and 10 of the drawings.

In packing the container or carrier, it will be apparent that the eggs are allowed to rest in the seats 34 of the mats D of those with the fingers 35 concaved while those seats with the fingers convexed overlie the eggs in the respective tiers in the nests C and these fingers take the concave and convex form in conjunction with the natural pliability of the material of the mat constituting a resting and protecting medium for each egg, having a natural give to accommodate such egg and a natural firmness to support each egg in place.

The staggered relationship of the eggs confined within the pockets or cells 30 of the nests C and as supported by the mats D permits of a possible varying air and light control in and about each egg and also allows a fuller and superior display of the egg. Furthermore the eggs in their nesting by the arrangement under the staggered disposition thereof and the support by the mats D will assure protection to the container A as the same will be held yieldably suspended in the respective nests C without liability of contact with each other or with the walls of the pockets or cells 30 of the nests or the walls of the container or carrier and thus safety is assured in transportation, handling and storage.

The disposition and associated relationship of the nests C, mats D and sections 37 with the eggs confined within the cells or pockets 30 in said nests C and the stacked condition thereof within the compartments 26 in the body unit A of the carrier or container is clearly illustrated in Figures 9 and 10 of the drawings.

Located removed from each marginal edge of the mat D and parallel therewith for a major extent thereof is an imprint constituting a corrugation 41 to effect a reinforcing rib, thus giving added strength and support to the said mat as will be obvious.

It is thought that the construction and manner of use of the invention will be clearly understood from the foregoing description and therefore a more extended explanation has been omitted.

The contemplated scope of the invention as well as changes, variations and modifications therein will be defined by the appended claims.

What is claimed is:

1. A packing for eggs comprising a sheet having an extending marginal corrugation or imprint and having therein a series of apertures, each with an extending ringed corrugation or imprint, and spaced into the sheet in horizontal and vertical

rows, and formed into two-super-imposed systems which are offset one to the other half the mean distance between the forming apertures of each system and having the apertures of one system slightly convex and those of the other system slightly concave, and adapted to receive and accommodate the eggs placed therein, and packed in tiers of staggered or alternately offset relation and yieldable fingers converging to the center of each aperture from the edge of the latter to constitute a hanging medium for the eggs for holding the same suspended in the opening at its center.

2. A packing for eggs comprising a sheet having an extending marginal corrugation or imprint and having therein a series of apertures, each with an extending ringed corrugation or imprint, and spaced into the sheet in horizontal and vertical rows and formed into two superimposed systems which are off-set one to the other half the mean distance between the forming apertures of each system and having the apertures of one system slightly convex and those of the other system slightly concave, and yieldable fingers within the apertures to receive and to give gripping support to the eggs, both at the top and at the bottom of each egg and constituting hanging mediums for the latter for holding the same suspended in the apertures at their centers.

3. A filler for a packing for eggs for use in an egg case, comprising a plurality of spaced, crossed elements interfitted with each other at the intersections thereof to form a plurality of cells for fragile articles so that all the cells at the borders of the fillers are spaced from the respective walls of the egg case, spacers for said fillers formed by extending the ends of said elements beyond the cells adjacent the borders of the filler, said spacers extending to a greater length beyond said border cells on one side of the filler than on the opposite side of the filler thereby to determine the stagger of the cells of superposed fillers when said longer spacers of one filler extend in a different direction than the said longer spacers of the superposed filler.

4. In a packing for eggs, a container, a plurality of superposed fillers stacked in the container, each filler having a plurality of cells formed therein to receive the eggs, means beyond the sides of each filler to space the outside borders of the filler from the walls of the container, the spacing means on one side of each filler providing for longer spacing from the adjacent container wall, than the spacing means at the opposite side of the same filler, thereby to cause the cells of one filler to be staggered relative to the cells of the next filler when the longer spacings are at different walls of the container.

5. In a packing for eggs, a container, a plurality of superposed fillers in the container, each filler having a plurality of rows of cells formed therein to receive the eggs, means beyond each side of each filler to space the outside borders of the filler from the respective walls of the container, the spacing means on two adjacent sides of each filler providing for longer spacing of said adjacent sides from the walls of the container, than the spacing means on the other sides of the container, thereby to cause the cells of one filler to be staggered relatively to the cells of another filler when the longer spacing means of the respective fillers are opposite to different walls of the container.

6. A flat for use in egg packing between superposed layers of eggs, comprising a sheet, a plurality of seats on the sheet for the ends of the

eggs, and a marginal rib formed on each seat to reinforce the seat and render the same yieldable, said rib being larger than the circumference of an egg at its end, so that the end of the egg rests only on the bottom of the seat.

7. A flat for use between layers of eggs in egg packing, comprising a sheet, a plurality of seats on the sheet, each seat being divided into a plurality of separate fingers, a marginal reinforcing element adjacent the outer circumference of the seat to maintain the fingers in position.

8. A flat for use between layers of eggs in egg packing, comprising a sheet, a plurality of seats on the sheet, each seat being divided into a plurality of separate fingers, a marginal reinforcing element adjacent the outer circumference of the seat to maintain the fingers in position, said element being spaced from the outer circumference of the end of an egg resting on said fingers.

9. In a packing for eggs the combination with an egg case made of fibre board and superimposed fillers made of intersecting strips and flats in said egg case, said fillers having rows of cells formed therein for the eggs, and said flats having sets of seats depressed into the opposite sides of each flat, the set of seats on one side of each flat being offset relatively to the set of seats on the other side of the same flat, of spacers outside of the borders of each filler extended in continuation of the respective strips of the filler to the adjacent side of the case, the spacers at two adjacent sides of each filler extending to a longer distance beyond said sides than the spacers on the other two sides of the filler, the offset of said sets of seats in the flats being such that the seats of one set are aligned with the respective cells of a filler below the flat, and the seats of the other set being aligned with cells of a filler above the flat, when the longer spacers of the lower filler face different sides of the case than the longer spacers of the upper filler, and a telescoping cover for the container the sides of the cover overlapping the respective sides of the container to reinforce the same.

10. The combination with a flat having a plurality of seats depressed therein on each side thereof to engage the respective ends of eggs in superimposed staggered tiers, of a rib of substantially concavo convex cross section spaced around the largest circumference of each seat and being depressed oppositely to the depression of the seat, the relative diameter of said rib being larger than that portion of the egg which extends into the seat to allow the resting of the ends of the eggs directly on the bottoms of the respective seats.

11. The combination with a flat having a plurality of seats depressed therein on each side thereof to engage the respective ends of eggs in superimposed staggered tiers, of a rib of substantially concavo convex cross section spaced around the largest circumference of each seat and being depressed oppositely to the depression of the seat, and a marginal rib formed by de-

pressions adjacent each border of the flat outside of the area of the flat within which the seats are formed, the relative diameter of said rib being larger than that portion of the egg which extends into the seat to allow the resting of the ends of the eggs directly on the bottoms of the respective seats.

12. In combination, an egg case having fibre-board walls to form a closed substantially rectangular compartment, a plurality of alternately superimposed flats and fillers, said flats being of the same area as the transverse area of the compartment and having depressed seats protruding beyond the respective faces of the flats, each filler being made of intersecting strips forming a plurality of rows of cells for the eggs spaced from the walls of the compartment all around, spacers extended as integral continuations of the strips of the fillers at the borders of each filler to the respective walls of said compartment, the spacers at two sides of the filler extending to a longer distance from the borders of the filler than at the other sides of the filler so as to offset the cells of the superimposed fillers relatively to each other when the longer spacers of the superimposed fillers are opposite different walls of the compartment.

13. The combination with a mat or flat for egg packing formed of a sheet and having a plurality of seats formed on the sheet by alternately and reversely distorting the sheet so that the alternate seats hold the respective ends only of eggs on the opposite sides of the sheet; of means at the rim of each seat to render the seats resiliently yieldable.

14. The combination with a container and a stack of alternate fillers and mats in the container so formed that the ends of the eggs in the cells of the fillers protrude beyond the respective cells in staggered relation to the adjacent tiers of eggs in the stack; of a cushion on the bottom of the container, the thickness of the cushion being less than the height of a filler, said cushion having a plurality of cavities therein in spaced parallel rows offset relatively to a pair of side edges of the cushion, and being adapted to seat and cushion the respective ends of eggs of the adjacent tier in said cavities.

15. The combination with a container and a stack of alternate fillers and mats in the container so formed that the ends of the eggs in the cells of the fillers protrude beyond the respective cells in staggered relation to the adjacent tiers of eggs in the stack; of a cushion on the bottom, and another cushion on the top of the stack, the thickness of each cushion being less than the height of a filler, each cushion having a plurality of cavities therein in spaced, parallel rows offset relatively to a pair of side edges of the cushion, and being adapted to seat and cushion the ends of eggs in said cavities.

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