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K. K. NEWSOM

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CONTAINER FOR EGGS AND THE LIKE

Filed June 8, 1936

3 Sheets-Sheet 1

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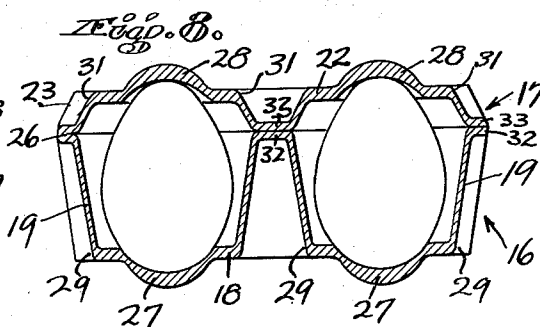
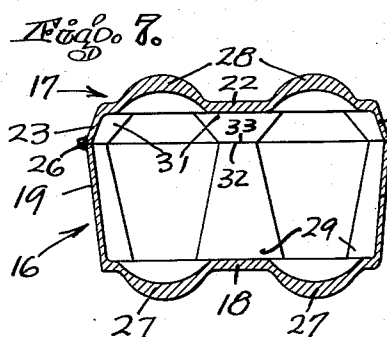
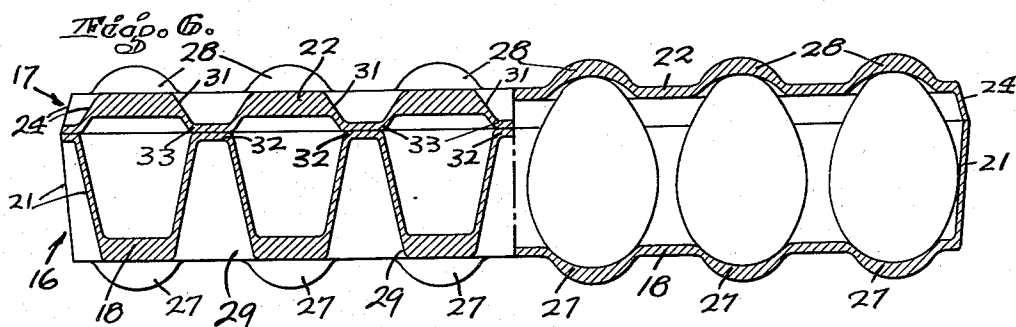
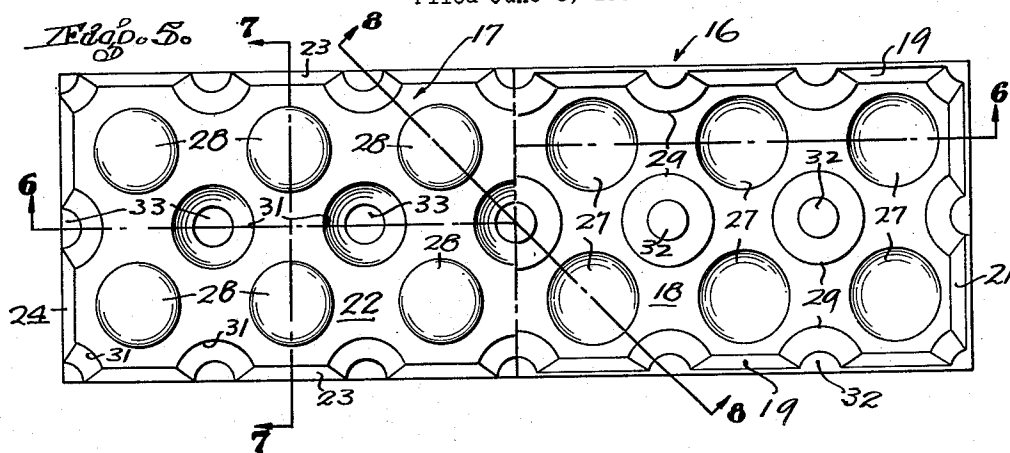
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3 Sheets-Sheet 3

Fig. 9.

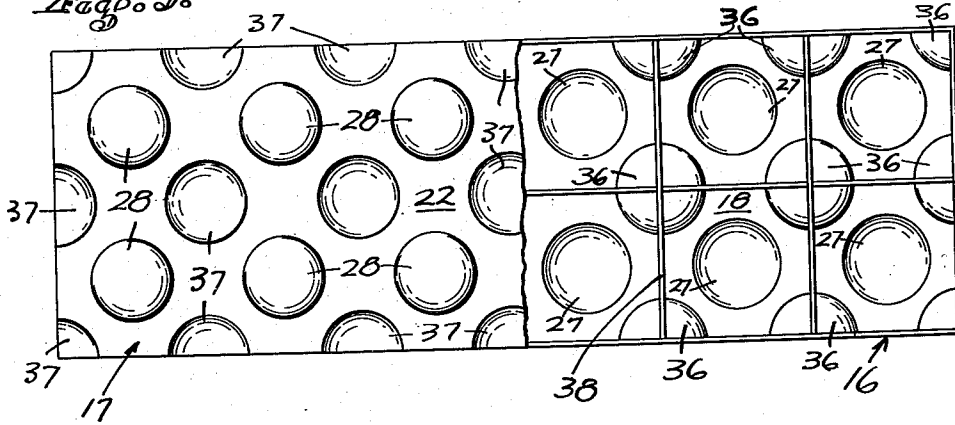


Fig. 10.

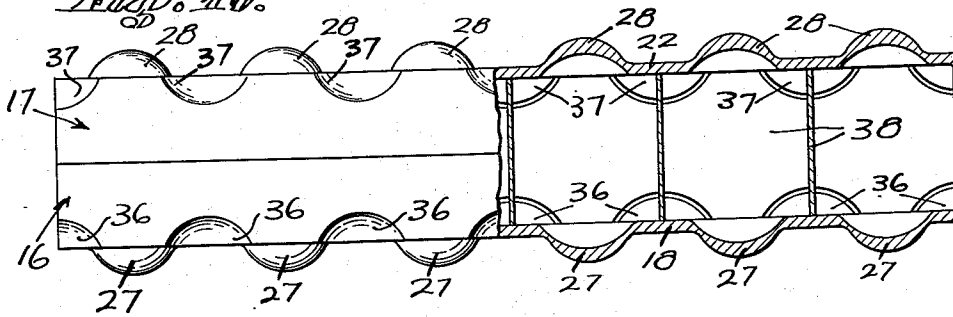


Fig. 11.

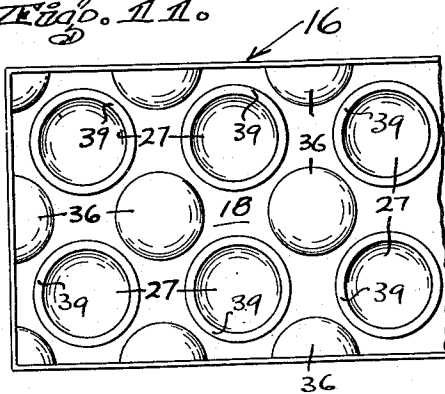
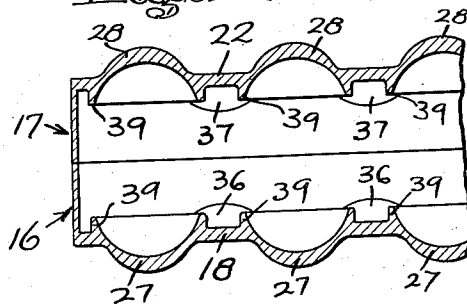


Fig. 12.



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CONTAINER FOR EGGS AND THE LIKE

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8 Claims. (Cl. 206—65)

This invention relates to containers for fragile articles and particularly to cartons for holding eggs and the like.

It is an object of the invention to provide a carton, of the character described which is of simple construction and which can be economically manufactured, and which can be stacked in the usual egg boxes or crates with a saving of space.

Another object of the invention is to provide a carton for eggs which is adapted to be stacked, and interlocked in staggered overlapping relation so as to allow the packing of more eggs than heretofore in a case or crate of given capacity.

Another object of the invention is to provide a carton which holds the eggs or other fragile articles by engaging the opposite tips of the same and which prevents the transmission of any stress or load to the contents of the carton.

A further object of the invention is to provide a carton for eggs, and the like wherein each egg is held between opposed concave depressions on readily separable top and cover of the carton, and in which means are provided between the individual eggs to prevent contact between adjacent eggs in the carton.

In general terms, the container or carton of my invention comprises a lower and an upper portion which fit together so that the lower portion is covered by the upper portion and defines an inclosure. The portions may be separate or may be made as a unit connected by a hinge joint at one meeting edge. In the opposed horizontal walls of the portions are aligned rows of concave seats to receive the ends of eggs. On the outside face of each horizontal wall are provided inverse depressions in staggered arrangement relatively to the respective seats and equally with the spacing of said seats, which latter have their convex sides protruded beyond the planes of the outside faces of the respective horizontal walls. When the carton is closed and stacked in a case or crate the protruding backs of the seats engage with the respective offset depressions on the adjacent walls of other cartons and firmly interlock the cartons against sliding. The weight of the upper cartons rest upon the outside depressions of the adjacent lower cartons between and not on the eggs contained in the lower carton. This arrangement also allows vertical overlap of the rows of stacked eggs thereby permitting the stacking of more horizontal rows of eggs in a given vertical space than would be possible with containers where the eggs do not overlap vertically. There are reinforcing separators between the individual eggs formed in registry or in continuation with the exterior depressions, substantially separating the carton into cells. The meeting parts of the upper and lower portions of each carton abut in such a way as to bear the stress or load imposed on top of a carton.

Another object of the invention is to provide a container for fragile articles and particularly to cartons for holding eggs and the like which is highly useful and simple in construction, convenience of arrangement, lightness and comparative inexpense of manufacture are further objects which have been borne in mind in the production and development of the invention.

I am aware that some changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

The invention is clearly illustrated in the accompanying drawings, wherein

Figure 1 is a fragmental perspective view of my cartons in a stacked position in a case.

Figure 2 is a perspective view of a single carton in closed position.

Figure 3 is a fragmental perspective view of my carton in open position.

Figure 4 is a fragmental perspective view of an open carton with ridges.

Figure 5 is a top plan view of my carton the cover being partly broken away.

Figure 6 is a sectional view of the carton, the section being taken on the line 6—6 of Fig. 5.

Figure 7 is a cross sectional view of the carton, the section being taken on the line 7—7 of Fig. 5.

Figure 8 is a diagonal cross sectional view of the carton, the section being taken on the line 8—8 of Figure 5.

Figure 9 is a plan view of a modified embodiment of the carton.

Figure 10 is a side view, partly in section, of said modified embodiment of the carton.

Figure 11 is a fragmental plan view of another modified form of the carton; and

Figure 12 is a sectional view of the form shown in Figure 11.

The preferred form of carton as illustrated by the drawings, is particularly adapted for holding eggs or similar objects.

As illustrated in Figure 2 and Figure 3 the carton is formed of a lower portion 16 and an upper portion 17 each preferably made of fibrous pulp molded into appropriate shape. The lower portion 16 has a horizontal wall 18 forming the bottom, and preferably outwardly and upwardly inclined sides 19 and ends 21 to form an enclosure open at the top. The upper portion 17 has a 60

horizontal wall 22 forming a top when inverted, and outwardly inclined sides 23 and ends 24 to form a top inclosure supplemental to the lower portion 16. The meeting edges of the adjacent sides 19 and 23 of the upper and lower portions may be united to form a hinge joint 26 as shown in Figure 3. The outward incline of the sides 18 and 23 and of the ends 21 and 24 of the carton facilitate the stacking of empty cartons within each other.

On the inner face of the bottom horizontal wall 18 are provided a plurality of circular seats 27, by means of the concave sides of concavo-convex depressions or dents arranged in said wall 18 in parallel spaced rows. In the herein illustration a carton is shown for a dozen eggs and the seats 27 are arranged in two parallel rows, six seats in each row. The top horizontal wall 22 of the carton is also provided with corresponding concavo-convex seats 28 which are in vertical alignment with the respective seats 27 when the upper portion 17 is inverted to cover the lower portion 16. The concave sides of the respective seats 27 and 28 face each other so as to engage the opposite tips of eggs placed therebetween. The depressions forming the seats 27 and 28 are offset out of the planes of the bottom wall 18 and top wall 22 respectively so that the convex sides of the seats 27 and 28 protrude beyond and form spaced domes on the outer faces of the respective horizontal walls 18 and 22.

On both horizontal walls 18 and 22 are formed inverse concavities 29 and 31 respectively, the concave sides of which face to the outside faces of the horizontal walls 18 and 22 and the convex sides of which protrude into the interior of the carton. These inverse concavities 29 and 31 are arranged in parallel rows so as to be offset substantially half way between the seats 27 and 28 respectively. In the herein illustration there is a row of full circle inverse concavities 29 and 31 on the longitudinal center line of the bottom and top walls 18 and 22 respectively, and a row of half circle concavities at each longitudinal edge of said walls 18 and 22. The inverse concavities 29 and 31 at the ends 21 and 24 of the carton are also half circles, because the margin outside and around the seats 27 and 28 is equal to one half of the distance between the adjacent seats 27 and 28 respectively, and the inverse and offset concavities 29 and 31 are spaced from each other at a distance equal to the spacing between the adjacent seats 27 and 28.

The convex sides of the inverse concavities 29 and 31 in Figure 3, are extended upwardly to the same height as that of the sides 19 and 23, and of the ends 21 and 24 respectively, and are formed in hollow frusto-conical shape with flat closed ends 32 and 33 which latter abut against each other when the carton is closed.

In addition dividing and reinforcing ribs 34 can be provided as shown in Figure 4. These ribs 34 are also indented from the outside planes of the bottom or top walls 18 and 22 and protrude inwardly of the carton. The ribs 34 are arranged on the longitudinal center line of the bottom and top walls 18 and 23 of the carton from one inverse concavity 29 to the next, and also transversely from each central concavity in each direction to the marginal half circle concavity so as to provide a cellular division of the carton to a limited height both at the bottom and at the top.

In the form shown in Figure 9, and Figure 10, the inverse concavities 36 and 37 are formed similarly to the seats 27 and 28, in that the con-

vex sides form spherical domes or half domes protruding into the interior of the carton. In this form of the carton a so-called filler 38 is placed within each carton. The filler 38 usually consists of a plurality of intersecting and interlocking strips which are cut in at their points of intersection on an arcuate or semicircular line so as to fit over the spherical domes and half domes of the inverse concavities 36 and 37.

In the form shown in Figure 11 and Figure 12 the seats 27 and 28 are provided with annular ribs 39 around their convex edges which protrude into the interior of the carton and form deeper seats for the tips of eggs without increasing the external protuberance.

In all the forms of the carton the exterior concavities 29 and 31, or 36 and 37 are of the same diameter as that of the exterior domes formed by the seats 27 and 28. This allows the interlocking of the cartons when stacked. The half inverse concavities at the marginal edges of one carton are substantially supplemented by the adjacent half concavities of the next carton placed alongside the same. Each carton stacked on top of another is staggered both longitudinally and transversely with respect to the carton below it and the stacked cartons are staggered alternately in opposite directions both longitudinally and transversely, as shown in Figure 1, so that the respective ends and sides of every second carton of a stack adjacent a side of a case or box 41 abuts against said side.

It is to be noted that the stagger stacking or packing of the cartons of eggs so locates the eggs that the tips of the eggs in one carton are located beyond the inner face of the top wall 22 of the adjacent carton on which it rests and beyond the inner face of the bottom wall 18 of the carton resting on its top. The actual vertical space used by each layer in stacking is less than the height of the eggs in said layer by reason of said stagger and said vertical overlap.

The cartons are preferably so dimensioned that three cartons fit into a horizontal layer of a usual egg carrier such as an egg crate, case, or box, leaving a marginal space at two adjacent sides of the usual carrier each of a width equal to the offset between the inverse concavities and the seats of a carton. In this manner staggered layers of the usual number, such as three dozen eggs in each layer, can be stacked in the ordinary carrier, but a carrier can hold more horizontal layers in these cartons than by other methods of stacking, or in other words carriers of lesser height may be used to carry the same number of horizontal layers of eggs. The cartons are also strong and withstand stacking. There is no pressure on the eggs because the eggs in a carton are offset relatively to the eggs in cartons of the next layers and the load is transmitted from the seats of one carton through the inverse concavities of the next carton and to the abutting edges and surfaces of the complementary portions of the carton. The cartons can be easily removed from the stack and handled so that breakage is obviated.

The upper and lower portions of the carton may be held together by a usual transverse band, or a sealing tape or the like may be applied around the abutting edges of said portion. The sides and ends can be flattened at certain points for advertising or printing or for a label. If the storekeeper desires, he may open up a carton, in the manner illustrated in Figure 3, for display or advertising. The consumer also can easily handle

the carton and remove or replace eggs without breakage.

By the expression "connected" referring to the relationship of the top and bottom or body portion of the carton is meant the holding together of the top and body portion of the carton by transverse bands, sealing tape or by means of a hinge.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. In combination, with an egg carrier adapted to contain a plurality of vertically stacked layers of eggs, a plurality of cartons so dimensioned that a number of cartons side by side fits as a layer in said carrier, each carton comprising a bottom portion, a top portion resting on the bottom portion to form an enclosure, rows of concavo-convex seats on the inside of the bottom and the top of the carton, the concave sides of corresponding seats in said bottom and top facing each other, each pair to retain an egg therebetween in the carton, a plurality of rows of inverse indentations on the outside of said top and bottom being offset with respect to the respective seats and being so spaced to be engaged by convex sides of the seats of another carton in the vertical stack so as to hold the superposed layers of cartons of the stack and the eggs in said cartons, alternately staggered with respect to each other equidistant laterally and longitudinally of the cartons.

2. A carton of the class described comprising a bottom portion, a top portion to cover said bottom portion, rows of opposed seats in said bottom and top portions for the ends of objects in said carton, rows of inverse concavities on the outside of the top and bottom of the carton offset equally from said seats, the said seats extending to the outside of the planes of the respective top and bottom so as to protrude into the corresponding concavities of another similar carton, and means extended from said concavities inwardly of the carton between the objects held in said seats.

3. In an egg carton and the like a bottom tray, a top tray adapted to cover the bottom tray when inverted, rows of seats for the tips of eggs respectively in the bottom and top of said trays aligned in pairs, inverse concavities on the outside of said bottom and top offset equidistant from the respective seats, said seats protruding beyond the outside planes of said bottom or top so as to extend into the respective cavities of adjacent egg cartons, and the walls of said concavities protruding inwardly of the carton between the eggs in said seats, and a cellular filler fitting over the inwardly protruding walls of said concavities of both the top and the bottom of the carton to divide the space in the carton into cells around said seats.

4. A carton comprising, top and bottom surfaces arranged substantially parallel to each other, a set of nests extending downwardly from said top surface, and a set of protruding elements extending downwardly from said bottom surface, said set of nests and said set of protruding elements being vertically offset relatively to each other, said nests being of such proportions as to receive protruding elements of a similar carton when said carton is disposed above the same in staggered relationship, and said protruding elements being of such proportions as to be receivable by nests of a similar carton when said carton is disposed below the same in staggered relationship, and means in said carton coacting with

the inner convex sides of said nests substantially to divide the interior of the carton into smaller compartments.

5. A carton comprising, top and bottom surfaces arranged substantially parallel to each other, a set of nests extending downwardly from said top surface, and a set of protruding elements extending downwardly from said bottom surface, said set of nests and said set of protruding elements being vertically offset relatively to each other, said nests being of such proportions as to receive protruding elements of a similar carton when said carton is disposed above the same in staggered relationship, and said protruding elements being of such proportions as to be receivable by nests of a similar carton when said carton is disposed below the same in staggered relationship, said protruding elements being of such shape inside said carton as to constitute object retaining seats.

6. In combination, a plurality of superposed containers so dimensioned that a number of containers side by side fits as a usual carrier, each container having: top and bottom walls and sides to form an enclosure, rows of spaced substantially concave seats on said top and bottom walls facing each other and adapted to engage the opposite tips of objects when placed within the container, each of said spaced concave seats having a substantially convex back protruding beyond the plane of the outer surface of said top and bottom walls, respectively, and a row of relatively inverted concavities on said top and bottom walls, respectively, offset both longitudinally and transversely with respect to said concave seats; whereby the convex backs of the spaced seats of one container extend into the concavities of adjacent containers above and below the same and maintain said containers in relatively longitudinally and transversely staggered position.

7. In combination, a plurality of cartons arranged side by side and stacked so as to form superimposed layers, each carton consisting of a portable unit having connected side walls and end walls, a bottom portion comprising a body and a connected top portion to cover the body, a plurality of hollow seats in said bottom and top portions aligned in pairs to engage the opposite ends of objects carried in the carton, said seats protruding from the faces of the top and bottom, the top and the bottom of each carton being provided with indentations into which the protruding seats of vertically adjacent cartons extend, whereby the ends of said objects carried in said cartons project vertically beyond the ends of objects carried in vertically adjacent cartons.

8. The combination with a case of a plurality of individual cartons stacked in vertical tiers within said case, each tier comprising a plurality of cartons disposed side by side, each carton consisting of a portable unit having connected side walls and end walls, a bottom portion comprising a body and a connected top portion to cover the body, a plurality of hollow seats in said bottom and top portions aligned in pairs to engage the opposite ends of objects carried in the carton, said seats protruding from the faces of the top and bottom, the top and bottom of each carton being provided with indentations into which the protruding seats of vertically adjacent cartons extend whereby the ends of said objects carried in said cartons project vertically beyond the ends of objects carried in vertically adjacent cartons.