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K. K. NEWSOM

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FILLER AND FLAT FOR CONTAINERS

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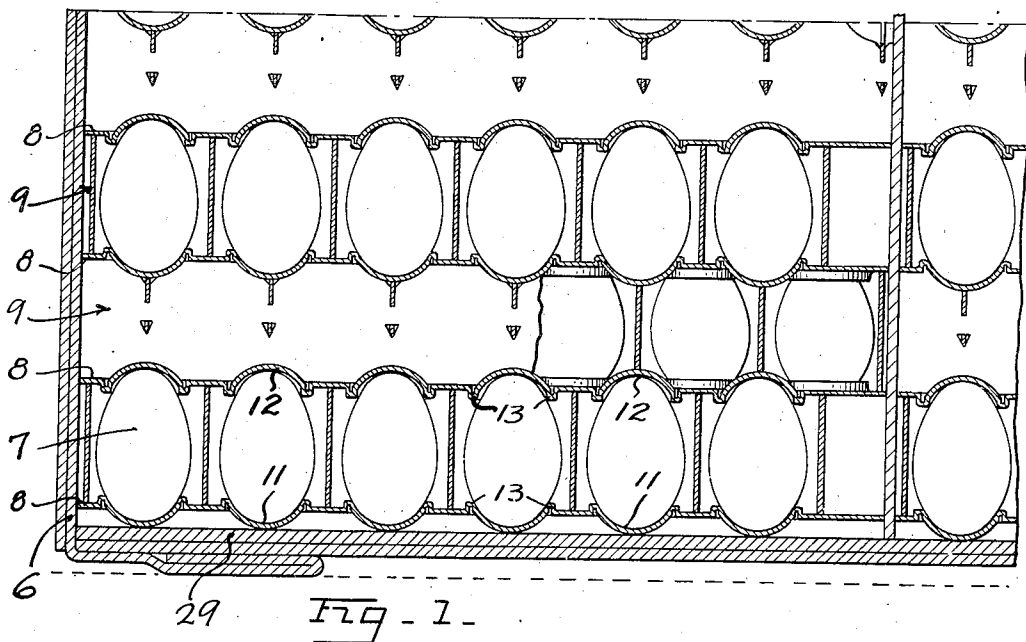
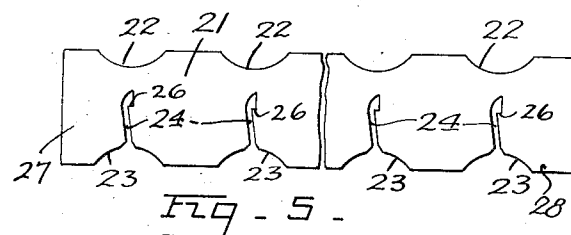
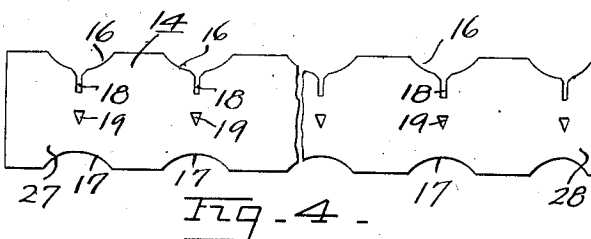
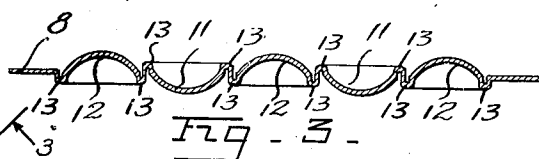
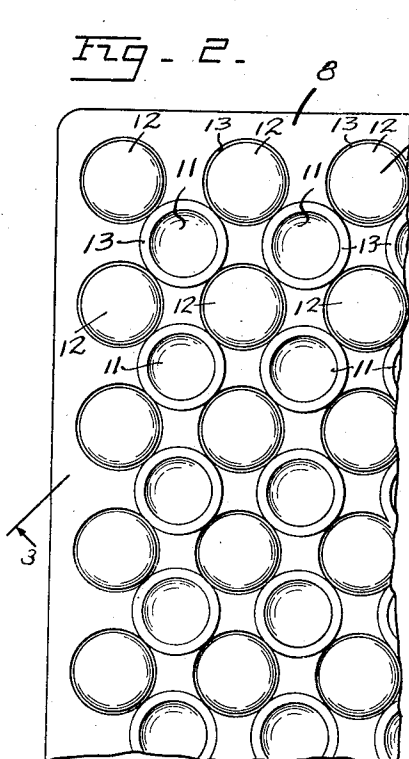


Fig. 2.



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FILLER AND FLAT FOR CONTAINERS

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3 Claims. (Cl. 217—26.5)

This invention relates to a packing for eggs and fragile articles.

An object of this invention is to provide fillers and flats for cases or boxes in which eggs or other fragile articles can be packed in larger quantities in a given space with complete protection against breakage.

Another object of the invention is to provide a shipping box and particularly an egg carrier 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 drawing.

The invention is clearly illustrated in the accompanying drawing, wherein:

Figure 1 is a fragmental view of the flats and fillers assembled in an egg box.

Figure 2 is a fragmental plan view of a flat or packing sheet.

Figure 3 is a sectional view of the flat, or packing sheet, the section being taken on the line 3—3 of Figure 2.

Figure 4 is a fragmental side view of a strip of cellular spacer or filler, and

Figure 5 is a fragmental side view of another strip of the filler.

In the herein illustration I show an embodiment of my invention in connection with packing eggs. Eggs are packed in a case or box 6 in staggered layers, each egg 7 in an individual cell. This is accomplished by a stack of alternate flats 8 and fillers 9. Each flat 8 is made of a molded or pressed sheet, which is slightly flexible and resilient. There are a plurality of parallel rows of aligned concavo-convex depressions provided on each sheet in parallelism with an edge of the sheet. The concave sides of said depressions are on the same side of the flat 8 to form seats 11 for the ends of the eggs. The convex sides of said depressions protrude beyond the plane of the other side of the flat 8. The seats 11 are equally

spaced from each other at a suitable distance to be in alignment with the centers or axes of the cells of the adjacent filler. Another set of similar depressions is provided on the other side of each flat 8. The concave seats 12 of this second set face oppositely to the seats 11 and are staggered and offset midway between the rows of seats 11 of the first set in both directions. The convex sides of the depressions of the second set protrude beyond the first side of the flat 8 and are equidistant from all the adjacent seats 11. The flat 8 is rectangular and its marginal edges are spaced from the outer rows of seats at a distance equal to the parallel distance between the centers of the adjacent opposed seats 11 and 12.

Around the rim of each seat 11 or 12 is provided an annular rib 13 which latter is also preferably of concavo-convex cross section, but each rib protrudes oppositely from the seat which it surrounds. In cross section the concave side of each seat is in continuation of the convex side of the rib 13 at the rim of the seat. The rib 13 is of larger diameter than the portion of the article or egg adjacent to it. Each egg has its opposite ends supported in said seats 11 and 12 due to the resilient reinforcing action of the rib 13 the egg can better withstand axial loads exerted thereon. In other words each flat has parallel rows of holders and each holder is made of a concavo-convex bottom portion forming a seat 11 or 12. Said bottom portion is solid and continuous so as to be contacted by the respective tip of the egg. The convex side of such seat projects beyond a face or side of the flat, and the rim of each seat projects beyond the other, opposite face or side of the flat and then it is turned upon itself back to the plane of the sheet thus forming a concavo-convex rib 13 which resiliently connects the rim of the bottom portion to the sheet. The diameter of the rib 13 is sufficiently large to permit the end of the egg to rest directly on the solid bottom portion.

Each filler is made up of two sets of spaced parallel strips arranged between two adjacent flats 8. One set of parallel strips intersects all the strips of the other set, so as to inclose a plurality of cells for the eggs. The strip 14 shown in Figure 4 is similar to all the strips parallel with it. The lines of intersection of each strip 14 with the strips of the other set is formed by vertically aligned recesses 16 and 17 respectively at the top and bottom of the strip 14, and by a slot 18 which starts at the recess 16 and extends to a limited distance transversely to the strip 14. A hole 19 is provided outside of and in alignment

with the inner end of each slot 16. The spacing between the slots 18 determines the width of each cell of the filler along said strips 14.

The strip 21, shown in Figure 5, is similar to all the strips parallel with it, which intersect the first strips 14. Each strip 21 is also provided with vertically aligned recesses 22 and 23 at the top and bottom of each line of intersection. From each bottom recess 23 extends upwardly and at an angle to the vertical an open slot 24 for engagement with the respective slots 18 of the other strips 14. A prong or tooth 26 is formed on the top side of each slot 24 so spaced from the longitudinal edges of the strip 21 that the prong 26 is aligned with the hole 18 of the intersecting strip 14 when the filler is properly assembled.

In assembling the filler the strips 21 can be slightly bent to allow the complete interlocking of the slots 24 and 18 and then when released the prong 26 engages the adjacent hole 18 and positively prevents accidental release of said interlocking slots. The same positive interlocking is established at all lines of intersection of the strips 14 and 21 of the filler. The spacing of the filler strips 14 and 21 is such that the recesses are aligned with the convex sides of the depressions in the flats at each end.

It is to be noted that the layers of eggs vertically overlap on account of the staggered packing and because the seats 11 and 12 are depressed beyond the respective planes of the flats 8.

The fillers at two adjacent sides thereof have the ends 27 extended to a greater degree than the other opposite remaining ends 28 thereof, thus the same fillers may be used on both sides of the flats 8, by a horizontal turn of an upper filler, relatively to the adjacent lower filler. In other words a filler is so placed on a flat 8 that the bottom recesses 16 and 23 at all interlocking points are substantially in registry with center lines of the convex projections of said flat and the cells of the filler are centered above the concave seats 11. Then another flat 8 is placed on top of the filler with concave seats 12 centered in said cells. By turning the next filler so that the longer ends of the strips thereof are opposite different walls of the box than those of the lower filler, the cells of this upper filler will be centered over the seats 11 on the upper side of the last flat 8. The tiers of filler cells and eggs therein are thus stacked in staggered relation to each other.

A suitable cushioning layer 29 may be provided below the lowermost flat and above the uppermost flat of the pack.

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

1. A packing flat for eggs and other fragile globular articles, comprising a relatively flat rectangular sheet, a set of permanent concavo-convex distortions on the sheet, the concave sides of the distortions forming seats for the ends of articles on one side of the sheet, said concavo-convex distributions being disposed in rows parallel to the edges of said sheet, a set of convexo-concave distortions disposed diagonally ad-

jacent said concavo-convex distortions and disposed in rows staggered with respect to said first mentioned rows of distortions, the rows of distortions along diagonal lines being alternately concavo-convex and convexo-concave, the concave sides of said convexo-concave distortions facing oppositely to the concave sides of said first mentioned distortions to form seats for the ends of articles on the other side of the sheet, all of said distortions protruding beyond the plane of the respective faces of the sheet, and an annular bead around the rim of each seat, each bead extending on the opposite side of the plane of the flat from the seat which it defines and being of larger diameter than that of the portion of the articles resting in the respective seats.

2. A packing flat for eggs and other fragile articles, comprising a rectangular relatively flat sheet, a set of permanent concavo-convex distortions disposed in rows on the sheet, the concave sides of the distortions forming seats for the ends of articles on one side of the sheet, a set of convexo-concave distortions disposed in rows interspersed between said first mentioned rows of distortions, the rows of distortions along diagonal lines being alternately concavo-convex and convexo-concave, the concave sides of said convexo-concave distortions facing oppositely to the concave sides of said first mentioned distortions to form seats for the ends of articles on the other side of the sheet, all of said distortions protruding beyond the plane of the respective faces of the sheet, and an annular bead around the rim of each seat, each bead extending on the opposite side of the plane of the flat from the seat which it defines and being of larger diameter than that of the portion of the articles resting in the respective seats.

3. In an egg case the combination with a filler forming a series of cells and having cut away portions at the corners of the cells, of flats, each flat comprising a relatively flat rectangular sheet, a set of permanent concavo-convex distortions on the sheet, the concave sides of the distortions forming seats for the ends of articles on one side of the sheet, said concavo-convex distortions being disposed in rows parallel to the edges of said sheet and opening into said cells, a set of convexo-concave distortions disposed diagonally adjacent said concavo-convex distortions and disposed in rows staggered with respect to said first mentioned rows of distortions, the rows of distortions along diagonal lines being alternately concavo-convex and convexo-concave, the concave sides of said convexo-concave distortions facing oppositely to the concave sides of said first mentioned distortions to form seats for the ends of articles on the other side of the sheet, the convex sides of said convexo-concave distortions protruding into the cut-away portions of the corners of said cells, all of said distortions protruding beyond the plane of the respective faces of the sheet, and an annular bead around the rim of each seat, each bead extending on the opposite side of the plane of the flat from the seat which it defines.

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