April 5, 1938. H. E. BRUNDIN 2,113,459

EGG CARTON

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FIG. 4.

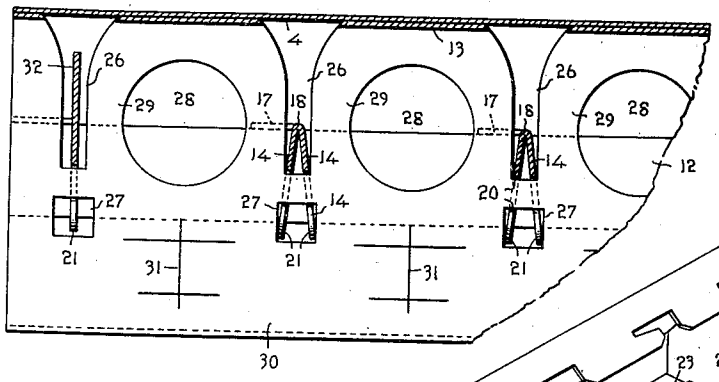
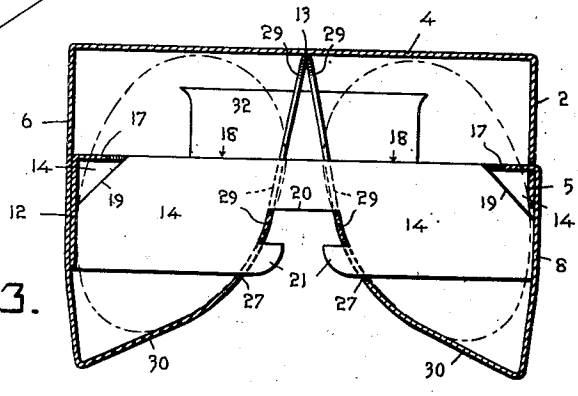


FIG. 1.

FIG. 3.



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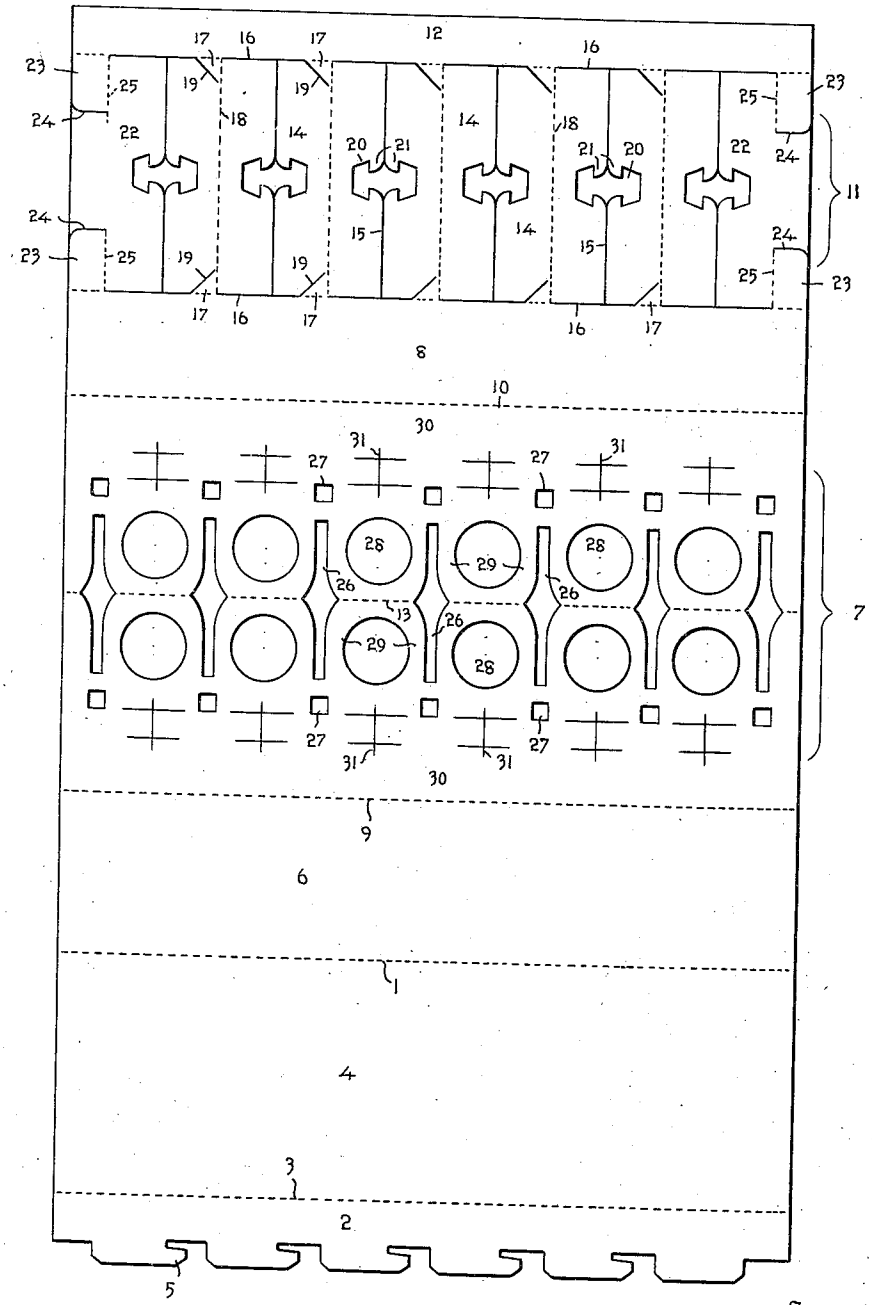


FIG. 2.

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2,113,459

EGG CARTON

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Application October 14, 1935, Serial No. 44,956

3 Claims. (Cl. 229—29)

The present invention relates to cartons for fragile objects such as eggs, and has for its object to produce a carton of this nature, of novel construction possessing great strength and rigidity, at a low cost and from a minimum of material, all of which will be hereinafter pointed out and are illustrated in the accompanying drawings.

Figure 1 is a perspective view of a carton embodying the present invention;

Figure 2 is a plan view of the integral blank from which the carton is constructed;

Figure 3 is a transverse sectional view of the carton; and

Figure 4 is a longitudinal sectional view of a portion of the carton.

The parts of the blank from which the carton is constructed will first be described, reference being had particularly to Figure 2. The blank is rectangular in outline at one end of which is the locking strip 2 which is cut to form a set of hooks 5 employed to hold the lid closed in a well-known manner. The said locking strip 2 is located along one edge of the blank and next adjacent to a section 4 which constitutes the lid or cover of the carton, the two parts, 2 and 4, being separated by a score line 3 permitting the easy bending of these parts relative one to the other. Next adjacent to the lid or cover 4 is a section 6 that serves as the rear side wall of the carton, there being a line of scoring 1 between the parts 4 and 6. Next beyond the side wall 6 is a relatively wide section, designated as a whole by 7, which is constructed to constitute the filler of the carton, by which I mean those parts that constitute the inner side walls and bottoms of the individual cells for the eggs or other articles. A score line 9 divides the filler section 7 from the rear wall section 6 on the one side, while on the opposite side a score line 10 separates it from the front side wall section 8. Next beyond this side wall section is the transverse partition section, 11, along the edge of which is a relatively narrow side strip 12.

The transverse partition section is cut or severed along parallel lines 15 to form a series of cross or transverse partitions 14, which are partially separated from the parts 8 and 12 by cuts 16, extending from one hinge piece 17 to another, which hinge pieces are of triangular shape and respectively serve to unite the transverse partitions with the side sections 8 and 12. Each of the intermediate transverse partitions 14 is transversely scored along its center as at 18, the respective transverse scorings aligning with and connecting the opposite hinge lines upon which the partitions turn when moved from a horizontal or flat position such as indicated in Fig. 2 to the upright positions which they occupy when the carton is erected or set up as shown in Fig. 1.

19 indicates a series of short angularly arranged cuts serving to sever the transverse partitions 14 from their hinge pieces 17 and extending inwardly from their opposite edges to the line 18. At the central portions of the free edges of the cross partitions, formed by the cuts 15, the material is cut out as represented at 20 to form a pair of oppositely disposed hooks or catches 21. These cut-outs, formed in the opposite edges of contiguous blanks, register one with the other, as represented in Fig. 2, so that a single stamping or cutting out operation serves to produce two cut outs, one in each transverse partition.

The end transverse partitions are shaped somewhat differently from the intermediate ones, and these are indicated by 22. The hinge pieces that unite the transverse partitions 22 respectively with the side pieces 8 and 12 are designated 23, and are preferably of oblong shape, as shown in Figs. 1 and 2. Incisions 24, at the inner ends of the hinge pieces 23, sever those portions of the end partitions which when the carton is set up extend upwardly above the hinge lines 25, from the hinge pieces.

A series of transverse slots 26 are formed crossing the middle portion of the filler section of the blank. These slots are in line with the score lines 18 crossing the transverse partition section. The section 7 is centrally divided by a transverse score line 13 that permits this section to be folded into the position indicated in Figs. 1 and 3, so that when the carton is set up the two parts on either side of the central line 13 assume an inverted V-shape relation one to the other, as best shown in Fig. 3, the two parts of such V constituting the longitudinal partition of the carton separating the two rows of cells from each other. In the section 7 of the blank, in line with the slots 26 and a little beyond the opposite ends of the same, are formed openings 27. The parts of the section 7 on either side of the line 13 and between the slots 26 are perforated, preferably with circular shaped openings, as indicated at 28, to allow the eggs which may be placed in the individual cells to project slightly through the longitudinal partition walls, constituting the inner side walls of the egg cells, this being represented in Fig. 3, and serving to assist in retaining the eggs in position and against movement when the eggs are placed in the cells and the cover or lid 4 is brought down and secured to close the carton.

I preferably weaken the bottoms 30 of the cells by scorings or cuts 31, permitting the supporting surfaces of the cells to yield, especially when eggs of extra large size are placed in the cells.

In erecting a carton from a flat blank such as

shown in Fig. 2, the transverse partition members are turned on the lines uniting them with their respective connecting hinge pieces from positions in the plane of the other parts of the blank to positions at right angles to the hinge pieces; and the intermediate partition members 14 are folded, along the lines 18, so that the two parts of each partition lie opposite each other but inclined one to the other. This produces a series of transverse partitions of inverted V-shape, connected at their ends respectively with opposite side wall parts of the carton by hinge pieces, and which serve as truss-like braces, such as represented in Fig. 4, the ends of which bear respectively against the outer side walls 6 and 12, which are turned to rest against them. This arrangement makes an exceedingly stiff and well-braced carton adapted to effectively resist strains and pressures which would tend to crush the same and injure its contents by pressure applied against the outer side walls 6 and 8.

When the transverse supporting and partition-forming members 14 are folded, the side strip 12 is turned downward before the rear wall 6 is turned up against the same, these two parts, 6 and 12, being then united, by glue or otherwise. The transverse strips having been folded and turned into upright, substantially parallel positions, the intermediate or filler section 7 of the carton is folded, along the line 13, and the two parts immediately on either side of said line are brought together and forced upwardly between the transverse partitions, which enter the slots 26. The transverse partitions are thus intermediately held and braced by the two parts 29 of the cells-filling portions of the blank which together constitute the central longitudinal partition of the carton dividing the cells into two rows, as well as serving as the inner side walls of the individual cells. These two parts, 29, being of inverted V-shape and hence separated one from the other form braces and supports for the transverse partitions, and thus is constituted a strong interlock between the longitudinal and transverse partitions at the central longitudinal portion of the carton. When the parts are being brought into the positions just described, the hooks 21, carried by the edges of the dual transverse partitions, enter the openings 27 in the filler sections, thus locking the parts together.

It will be seen that the end partitions 22 are not dual or of truss shape, but are of single thickness or plate-like transverse formation. This is for the purpose of constituting partial end closures to the end cells of the two rows, as indicated at 32, which parts stand above the hinge lines 25 on which the end partitions turn. The parts of the intermediate transverse partitions which correspond with the upwardly projecting portions 32 of the end partitions are folded downward on the score lines 18, as has been described, to form the cells-separating members of the dual or truss-like partitions. This makes these transverse partitions of less height than has heretofore been adopted in making cellular egg cartons; but it has been found that the diminishing of the height of these partitions is unobjectionable, indeed it has advantages, in that it gives better exposure to the eggs and permits them to be more easily grasped for removal. Another advantage of this formation of the intermediate transverse partitions, is the increased supporting and bracing effect incident to their dual or two-part truss-like construction which has been pointed out, and a still further advantage is this, that due to their construction, there is a certain elasticity to the walls thus transversely separating the cells, not to be found in partitions of single thickness formation, and which is very advantageous in preventing the eggs from coming into contact and from breaking through rough handling or shocks incident to transportation.

The inner walls of the individual cells, constituting the central longitudinal partition of the carton, extend some distance above the tops of the transverse partitions—even above the tops of the parts 32 of the end partitions 22,—as is represented in Fig. 1,—and they serve as supports for the cover or lid when brought down to close the carton. When the cover is closed the hooks 5 along the edge of the locking strip engage below the hinge pieces 17 uniting the transverse partitions with the front wall 8 of the carton.

It will be seen by reference to Fig. 2 that where the transverse partition member, 11, of the blank is formed there is no projection of any part of such section, 11, beyond the longitudinal side lines of the blank, and hence, there is no waste of material in the construction of the cartons, and so it becomes possible to make the cartons from a roll or strip of material of a width exactly corresponding with the length of the carton, and no greater, thus entirely avoiding the waste incident to parts projecting beyond the rectangle of the blank which is represented in Fig. 2. This means a very considerable saving in material, and is accomplished without in any way reducing the size or capacity of the carton produced, its strength or its simplicity of construction and ease of assembly.

What is claimed is:

1. A carton formed from a single blank to have individual cells for the articles, comprising outer side walls, transverse partitions separating the cells, of dual truss-like formation extending between and bracing the sides, and filler parts between the transverse partitions, constituting a longitudinal partition separating the cells into rows and also the inner side walls and bottoms of the cells, the transverse partitions and filler parts interlocking at all of their intersections and the longitudinal partition portion of the filler section extending above the top edges of the transverse partitions to afford intermediate support for a cover of the carton.

2. A carton such as described in claim 1 having the end transverse partitions of plate-like formation and of a vertical height greater than that of the intermediate truss-like transverse partitions.

3. A carton for holding eggs and like fragile objects, formed from a single unitary blank, comprising outer side walls, a cover, a transverse partition section and a filler section, the transverse section being cut and scored to form a plurality of transverse partitions of dual construction in the edges of which are cut-outs provided with interlocking projections, and the filler section being slotted to fit over the intermediate partitions and folded to constitute side wall and bottoms of the cells and being also formed with perforations with which engage the projections in the cut-outs of the transverse partitions for holding together these parts.

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