March 21, 1933. F. KRONENBERGER 1,901,913

FLAT AND FILLER FOR EGG HOLDING CASES

Original Filed April 18, 1929 2 Sheets-Sheet 1

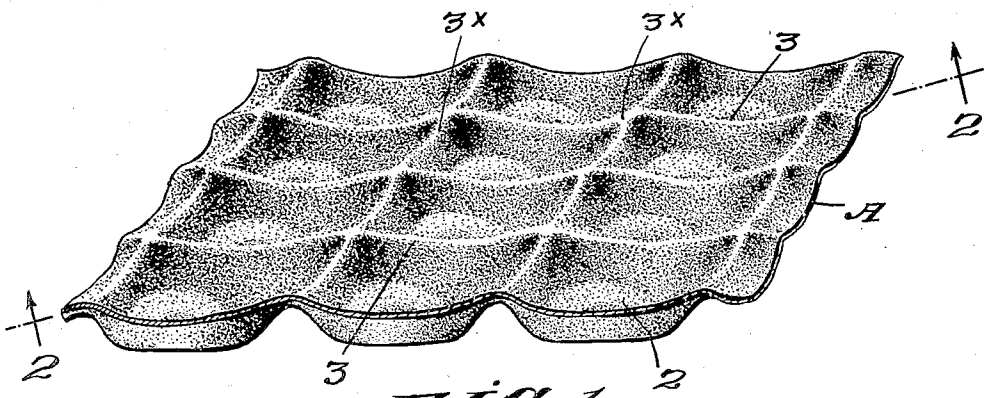


Fig. 1.

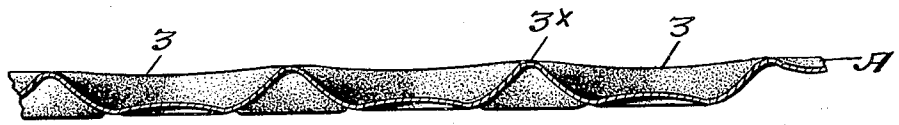


Fig. 2

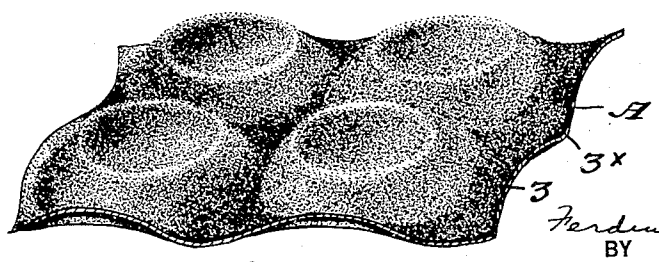


Fig. 3.

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FLAT AND FILLER FOR EGG HOLDING CASES

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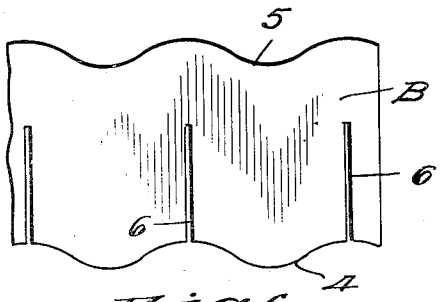


Fig. 6

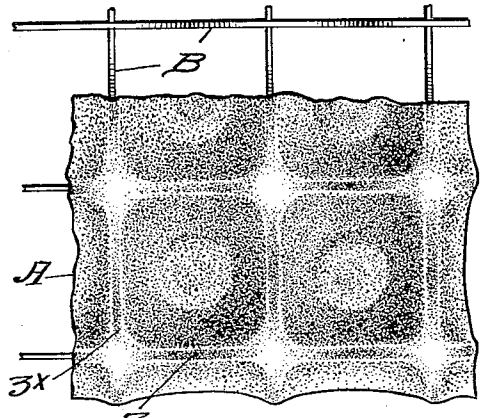


Fig. 5.

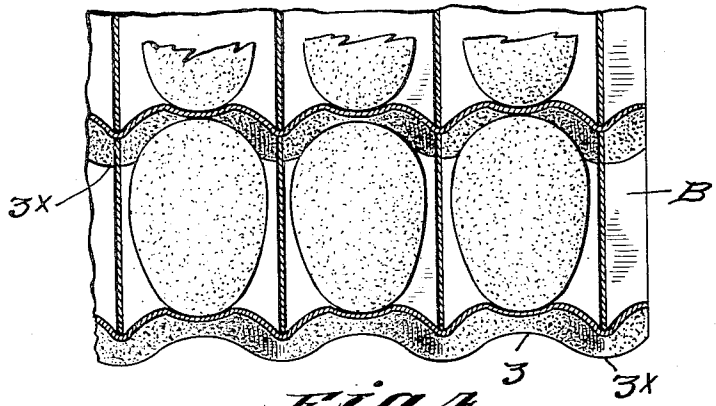


Fig. 4.

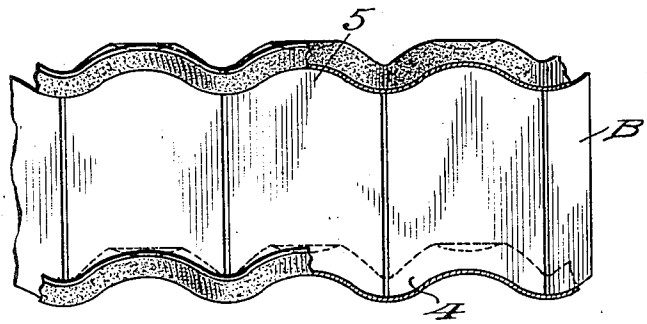


Fig. 3a

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UNITED STATES PATENT OFFICE

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FLAT AND FILLER FOR EGG HOLDING CASES

Application filed April 18, 1929, Serial No. 356,016. Renewed August 5, 1932.

The object of the present invention is to provide a "flat" for egg cases and coacting fillers therefor which shall be so formed that when the flat and filler units are assembled a rigid structure is provided, the filler members resisting end or sidewise movement of the flats and the flats resisting lateral movements of the filler units. A more important feature of the invention, however, resides in the formation of the flat in such manner that it may be readily produced by rolling and pressing steps from sheet cardboard, the final flat being of such strength due to its formation that relatively thin cheap cardboard may be employed. Other objects of the invention will hereinafter appear.

The invention will be described with reference to the accompanying drawings in which—

Figure 1 is a perspective bottom view of an egg flat formed in accordance with the invention, and

Figure 2 is a sectional side elevation of the same on the line 2—2, Fig. 1;

Figure 3 is a perspective top view of a portion of the flat;

Figure 3*a* is a sectional elevation of two of the flats separated by filler units;

Figure 4 is a sectional side elevation showing an assembly of upper and lower flats and filler units with eggs in position;

Figure 5 is a plan view showing filler units in position and the fragment of a flat laid thereon, and

Figure 6 is a fragmentary view in elevation of one of the filler units.

Referring to the drawings in Figs. 1 and 2 I have shown the completed egg flat. It comprises parallel rows of cup-like units 2 formed in a sheet A, the individual cups being separated by transversely extending rows of ribs 3, 3*x*, the material of the sheet sloping downward from the top of each rib and toward opposite sides thereof to the base of adjacent cups. At their base the cups are raised so that the sheet at such points has a convex upper formation and a concave lower formation.

It will be noted by reference to the drawings that each rib bounding a side of a cup is curved and each rib as a whole is of wavy formation, shown more particularly in Figs. 3 and 4. Each rib at the top is formed with a succession of concave surfaces and at the bottom with a succession of convex surfaces. Referring to Figs. 3 and 4 it will be seen that the filler pieces B correspond with the rib formation of the flats, the top edge of each filler being formed with a plurality of convex surfaces 4 and the bottom edge with a plurality of concave surfaces 5. The manner in which the top and bottom surfaces of each filler unit interlocks with upper and lower flats is best illustrated in Fig. 4. When the structure of upper and lower flats and interengaging filler units, the latter being slotted for interengagement at 6 in accordance with the universal practice, is assembled with the eggs lying between the flats, the point of each egg will rest upon the appropriate convex base of its cup.

In the formation of the flat I may accomplish the formation of cup units in sheet material by passing the sheet in one direction under corrugating rolls and thence in a transverse direction under corrugating rolls so formed as to depress both the ribs and the channels of the first corrugations in order that the material at the ribs not be crowded or put under undue tension. In other words, the material depressed at the ribs is given up to the channels by moving the latter downwardly and thus increasing their depth at spaced points. When this is done sections of the sheet may be placed in dies to complete the formation of the flat in accordance with the structure illustrated in the present drawings. This may be done without fracture or wrinkling of the sheet material, inasmuch as the structure is such that the dies are not required to stretch the material but merely to move the various sections of the cupped sheet, the required fullness of material having been provided at all required points.

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

1. In combination an egg flat formed of

sheet material and comprising rows of successive inverted egg holders, the holders being bounded by transverse rows of intersecting channels each of wavy formation, and a filler unit for coaction therewith, each unit comprising transversely extending filler pieces each piece having its top and bottom edges of wavy formation corresponding with the formation of one of said channels whereby endwise movement of the piece is resisted.

2. An egg flat comprising a sheet of fibrous material having formed therein rows of upwardly projecting egg holders, arranged in parallel rows, the rows being bounded by transverse intersecting channels each of wavy formation and the channels having their major depth at the points of intersection, each channel being thereby adapted for coaction with a filler piece having its top and bottom edges of wavy formation corresponding with the formation of the channel whereby endwise movement of the piece is resisted.

In testimony whereof, I have signed my name to this specification.

FERDINAND KRONENBERGER.