Aug. 17, 1965 H. T. HAILEY ETAL 3,201,023

CARTONS

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Fig. 1.

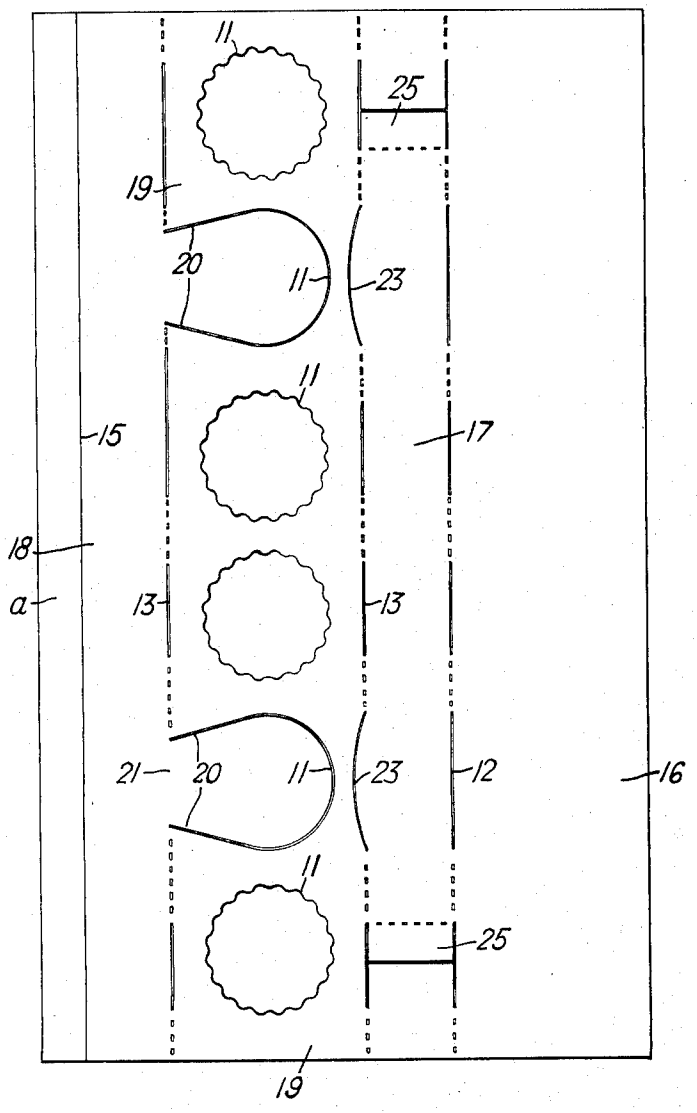

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Fig. 2.

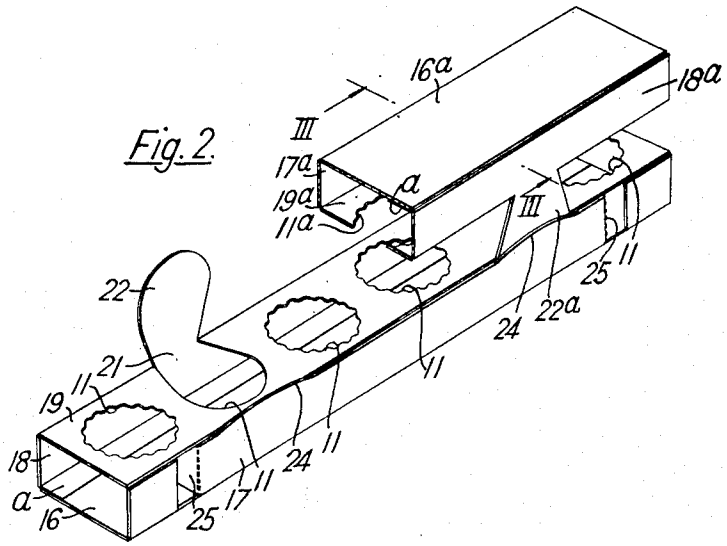
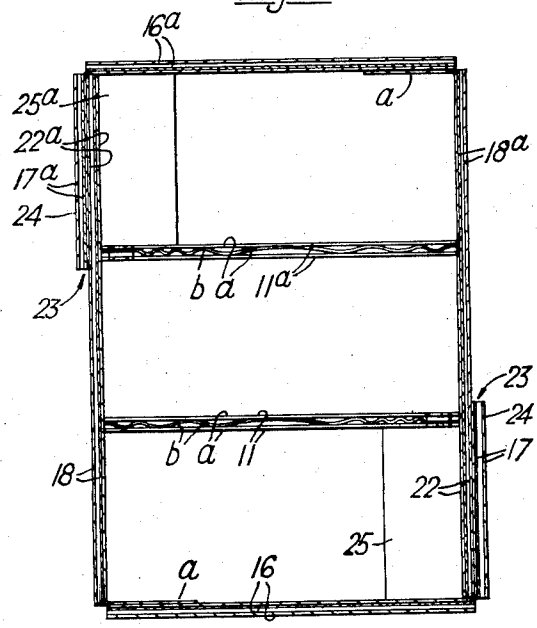


Fig. 3.



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CARTONS

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Claims priority, application Great Britain, Apr. 26, 1963, 16,437/63
10 Claims. (Cl. 229—28)

This invention relates to cartons for use in the packaging of eggs or other light fragile articles.

In the specification of our prior U.S. patent application Serial Number 255,789; now Patent No. 3,167,235, we have described and illustrated a carton which in general may be said to comprise an oblong top wall, an oblong bottom wall, a back wall and a front wall, all connected together and located so that the top and bottom walls and the two intermediate walls are held in spaced parallel relationship by the back and front walls to which they are connected, the back wall and the front wall being positioned at the shorter sides of the oblong, and the two longer sides of the oblong carton being fully open, the two intermediate walls having a plurality of registering apertures therein shaped, positioned and proportioned to receive and locate a plurality of eggs and like articles one in each pair of registering apertures between the top and bottom walls.

This arrangement of a carton with a solid top and bottom and two apertured walls one above the other at intermediate levels locating the eggs or the like in position, is considered very satisfactory. More recently, however, consideration has been given to the problems of erection and of filling the cartons mechanically, and in this connection the cartons illustrated in the drawings of the before-mentioned prior specification present some complications.

The object of the present invention is therefore to provide a strong, robust carton, which while retaining the main features and characteristics of our earlier one, will be somewhat more adaptable to ease of erection and to mechanical filling.

According to the present invention a carton comprises separate upper and lower sections, each complete in itself, the upper section including a top wall and an upper intermediate or partition wall, and the lower section including a lower intermediate or partition wall and a bottom wall, the two intermediate or partition walls having registering apertures in them, depending extensions on the upper section, upstanding extensions on the lower section, and each section having slots in register with the extensions on the other section, the extensions on the one section being engageable in the slots in the other section, by which the two sections can be fitted together and held securely with their respective apertured intermediate walls in spaced parallel relation with each other and with the top and bottom walls.

The improved cartons therefore lend themselves to a method of filling by inserting the eggs or the like into the apertures of the lower section, after which the upper section is fitted in position over it.

The cartons may be produced in various sizes and designs to hold any reasonable number of eggs or the like, for instance six in a single row, or six in two rows of three each, or twelve in two rows of six each or four rows of three each.

Referring to the drawings which form a part of this specification, and which illustrate a carton designed to hold six eggs in a single row:

FIGURE 1 is a plan of a blank cut and creased in readiness for erection to form one section (in this instance the lower section) of a carton, an identical blank

being provided for the upper section as will be hereinafter explained.

FIGURE 2 is a perspective view showing the blank of FIGURE 1 erected to form the lower section of a carton and having another similar folded and erected blank fitted to it as the upper section, but the upper section is partly broken away to facilitate illustration.

FIGURE 3 is a cross section of the line III—III of FIGURE 2.

A rectangular carton blank indicated generally at **10**, FIGURE 1, is formed with a row of apertures **11** of generally circular shape, with serrated edges if desired, and also with fold lines **12**, **13**, **14**, **15** where parallel right-angle folds can be readily made, to produce a carton section having a solid bottom wall **16**, two upright sidewalls **17**, **18** along the long sides of the section, and a partition wall **19** containing the apertures **11**. Some or all of these apertures, as shown two, have extension cuts **20** defining bridge pieces **21** by which the parts cut out in forming the apertures are left joined up, so that these parts can be turned upwards to form upstanding extensions **22** of generally circular shape. Cut out slots **23** are also formed in the partition wall opposite these extensions **22**.

FIGURE 2 shows the blank erected. To secure its meeting edges together they may be butt-joined, and secured together with tape or the like. It is, however, preferred to provide an overlapping portion for glueing the edges of the blank together. It is convenient to form the blank out of a board which comprises two leaves of plain sheet material with a corrugated core, although of course the invention is not restricted to this material. However, such a material is suggested in FIGURE 3 where the apertures in the intermediate walls are shown, and the outer sheets are denoted by the reference *a* and the corrugated core by the reference *b*. If this is the case then it is convenient to use one sheet of the material *a* to form the overlap for glueing as shown, the other sheet and the corrugated core being cut away so that they do not overlap.

It will be seen from FIGURE 2 that the complete lower section of the carton comprises a solid bottom wall **16**, two upright long sidewalls **17**, **18** and an upper partition wall **19** having the apertures **11** in it, in which the eggs can be inserted; the section also has two upstanding extensions **22** at one side and two slots **23** at the opposite side.

An identical upper section is fitted on to the lower section, the same references being used for the respective parts with the distinguishing letter *a* added, so that the upper section comprises a top wall **16**^{a}, side walls **17**^{a}, **18**^{a} and a lower wall **19**^{a} with apertures **11**^{a} in it. Thus the eggs in the partition section will be firmly located and positioned by the apertures in the upper section. The extensions **22**^{a} on the upper section will extend downwards and fit into the slots **23** of the lower section at one side of the carton, while the extensions **22** of the lower section will extend upwards and fit into the slots **23**^{a} of the upper section at the other side of the carton.

The side walls **17**, **18**^{a} are left to project slightly in the gentle curvature formed by the slots so that they help stiffen the assembly where the extensions engage in the slots, as shown at **24**, FIGURES 2 and 3.

The side walls **17**, **18** and **17**^{a}, **18**^{a} each have small flaps **25**, **25**^{a} respectively which can be turned inwards at right angles to assist further in holding the erected carton rigid.

As shown the two ends, that is to say the short sides of the oblong, are left completely open but this is not essential.

We claim:

1. A carton comprising identical complementary and separate upper and lower sections, each section being complete in itself, said upper section including an imperforate top wall, a partition wall spaced below and disposed parallel with the top wall, side walls connecting the top wall and the partition wall, said lower section including an imperforate bottom wall, a partition wall spaced above and disposed parallel with the bottom wall, side walls connecting the bottom wall and the partition wall, said partition walls being disposed in confronting relation and having registering apertures formed therein, locking extension flaps on the sections and depending from the upper section below the partition wall thereof and extending from the lower section above the partition wall thereof, said extension flaps lying substantially coplanar with the side walls of the sections and said partition walls having openings lockingly receiving the extension flaps to secure the sections together.

2. A carton as claimed in claim 1 wherein both sections are made from carton material which comprises two outer leaves of sheet material with a central core of corrugated material.

3. A carton as claimed in claim 1 wherein each section is provided with an overlapping portion which comprises only one leaf of the sheet material.

4. A carton as claimed in claim 1 in which some at least of the apertures are formed with serrated edges.

5. A carton as claimed in claim 1 having the apertures in each partition wall formed in a single straight row.

6. A carton as claimed in claim 1, wherein said extension flaps are integral with the side walls of the sections and depend from one side wall of the upper section and extend from the lower section at the side wall opposite to the one side wall of the upper section.

7. A carton as claimed in claim 6, wherein the openings are formed in the partition walls at the point of their juncture at their sides with one of the side walls of the sections.

8. A carton as claimed in claim 1, wherein the extension flaps are cut out from the partition walls and bent into positions at right angles thereto, thereby leaving openings in the partition walls, which openings constitute some of the apertures.

9. A carton as claimed in claim 1, wherein said side walls of each section have inwardly bendable tabs to fit perpendicularly between the top wall and the partition wall of the upper section and between the bottom wall and the partition wall of the lower section to rigidify the sections.

10. A carton as claimed in claim 1, wherein the partition walls are disposed in vertically spaced, parallel relation.

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