May 17, 1960 D. LEVKOFF 2,936,943

CARTONS

Filed Nov. 15, 1957 2 Sheets-Sheet 1

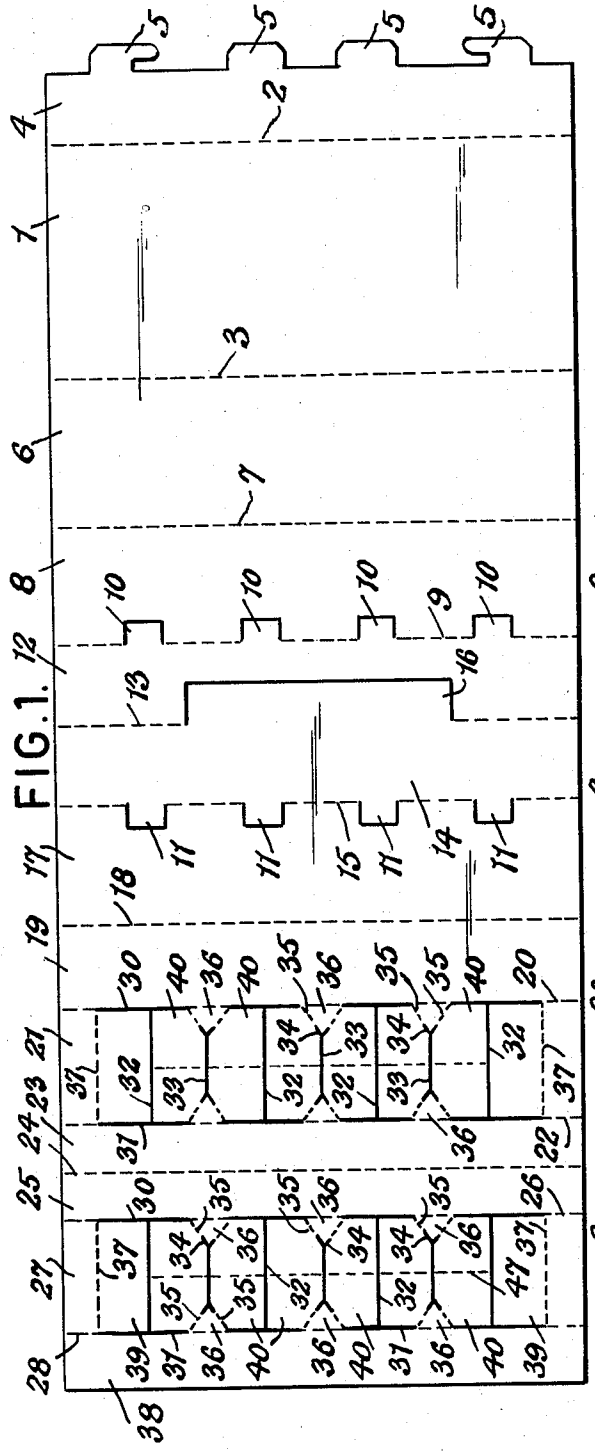


FIG. 1.

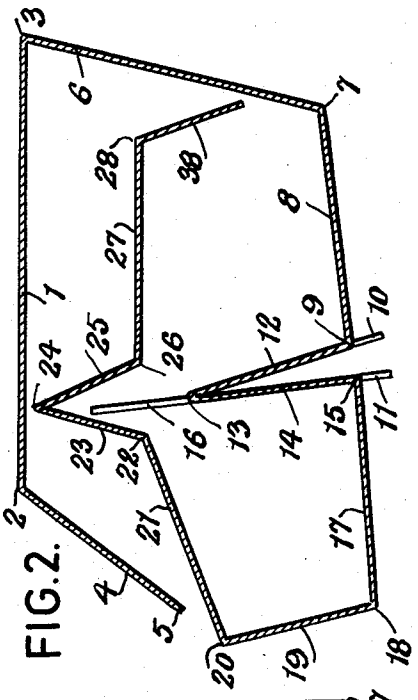


FIG. 2.

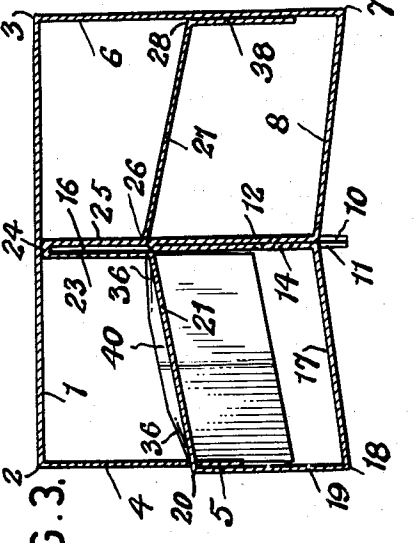


FIG. 3.

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May 17, 1960 D. LEVKOFF 2,936,943

CARTONS

Filed Nov. 15, 1957 2 Sheets-Sheet 2

FIG.4.

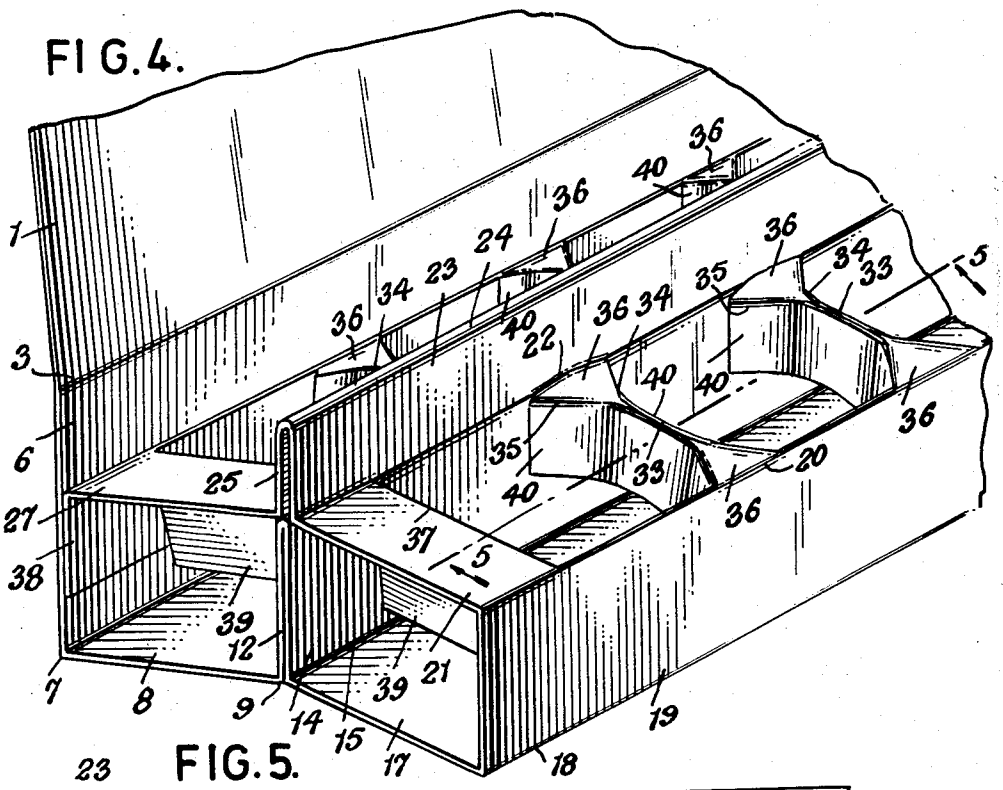
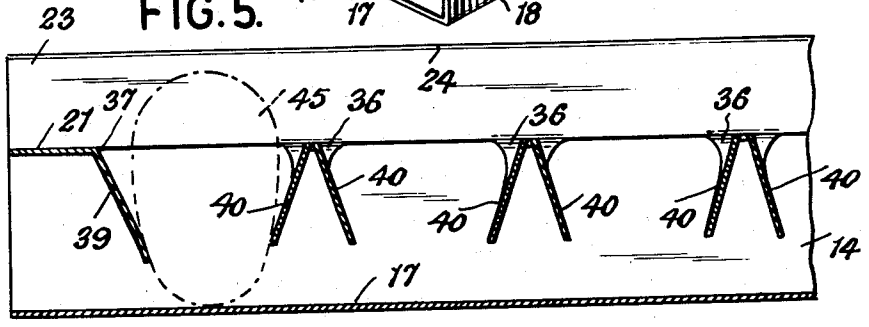


FIG.5.



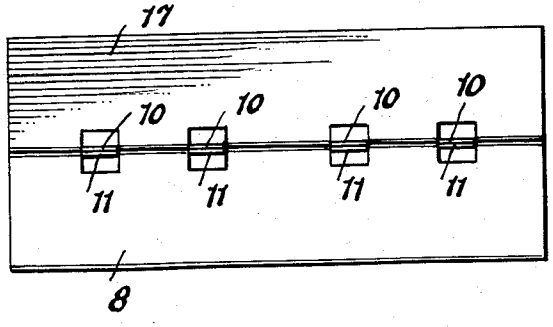


FIG.6.

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2,936,943

CARTONS

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Application November 15, 1957, Serial No. 696,649

3 Claims. (Cl. 229—28)

This invention relates to cartons, and more particularly to those of the type especially adapted for containing eggs, fruits, vegetables or many other kinds of goods, and particularly goods likely to be broken or damaged during shipping, handling or storage.

Various kinds of protective cartons have been proposed for containing eggs, for example, and most of them fail to provide maximum protection for the goods, with the result that many eggs are broken in transit, in handling, or when displayed in stores. A great deal of breakage of these goods follows from the fact that in some of the egg cartons the eggs are not properly maintained in spaced relation nor cushioned in a manner to protect them against shocks and jars to which the cartons are often subjected. In addition, many storekeepers stack the egg-containing cartons one upon the other and since in most cartons, little or no provision is made to firmly support the covers of the cartons and prevent them from collapsing or exerting excessive downward pressure on the eggs, such cartons when stacked, often partially collapse, resulting in breakage of their contents.

It is an object of the present invention to provide a carton which, while primarily intended for containing eggs, can be used for many other globular or rounded articles, and which, because of its construction, provides a maximum of protection and resistance to damage or breakage of its contents.

It is an object of the invention to provide a carton which shall provide a novel cushioning means for the eggs or other articles, and which cushioning means will adapt itself to eggs of various sizes; which will act to resiliently engage the eggs to hold the same gently but firmly against shifting in the carton; which will maintain the eggs in separated relation and tend to absorb shocks and thus afford a maximum of protection for the goods.

It is another object of the invention to provide in a carton of this character, a stiffening and reinforcing element, consisting of a plurality of contiguous plies of cardboard, arranged centrally and longitudinally of the carton as a stiffening spine and acting as a partitioning member of such height that it rises above the tops of the eggs and supports the cover of the carton in such a manner that the cartons can be stacked one upon another without fear of collapse of any of them in the stack.

It is an object of the invention to provide a carton as above-described which shall preferably be composed of a single section or blank of cardboard; which can be easily fabricated and set up and which will provide a rigid protective structure for its contents.

With these and other objects to be hereinafter set forth in view, I have devised the arrangement of parts to be described and more particularly pointed out in the claims appended hereto.

In the accompanying drawings, wherein an illustrative embodiment of the invention is shown,

Fig. 1 is a face view of the blank from which the carton is produced;

Fig. 2 is a transverse sectional view through the blank in a partly-folded condition;

Fig. 3 is a transverse sectional view through the erected carton;

Fig. 4 is a perspective view of a portion of the carton;

Fig. 5 is a sectional view, taken substantially on the line 5—5 of Fig. 4, looking in the direction of the arrows, and

Fig. 6 is a view, on a reduced scale, looking at the bottom of the carton.

The blank from which the improved carton is constructed, is shown in Fig. 1, wherein it will be noted that the same preferably consists of a single lengthy strip, the width thereof depending upon the number of eggs or other articles to be contained in the carton. The cover of the carton is shown at **1**, the forward edge thereof being defined by the fold or score line **2** and the rear fold or hinge line being the score line **3**. The cover locking flap is shown at **4** and the same is provided with a number of tabs **5**, some or all of which may be of the hooked form shown. At **6** is shown the rear wall of the carton, the same being located between the score line **3** and a bottom score or fold line indicated at **7**. One of the bottom wall sections is shown at **8**, the same being located between the score line **7** and a parallel score line **9** which is interrupted at intervals by stamped-out tabs **10** which co-operate with similar tabs shown at **11**, in forming central supporting feet for the bottom of the carton, as shown in Figs. 3 and 6.

The part of the blank shown at **12**, and located between the score lines **9** and **13**, forms one of the walls or panels of a central partition member which divides the carton into two longitudinal channels in which the eggs or other articles are contained. A co-operating partition wall or panel is shown at **14**, the same being located between the score lines **13** and **15**. The score line **13** is interrupted by the formation of a stamped-out tongue **16** adapted, when the carton is in its erected form, to extend upwardly from the score line **13** and form a central ply for the upper portion of the partition in a manner to be explained.

The second bottom wall section of the carton is shown at **17** and the same is located between the score line **15** and a score line shown at **18**, the latter score line being located at the front lower end of the carton as shown in Figs. 2 and 3. The front wall of the carton is shown at **19**, the same being located between the score line **18** and the score line shown at **20**. One of the slitted top panels is shown at **21**, the same being located between the fold or score line **20** and a score line shown at **22**. Beyond the score line **22** is a narrow area **23** constituting one of the outer and upper walls of the central partition, this area being located between the score line **22** and that shown at **24**. A similar strip portion **25** forms the second upper and outer wall of the central partition, this strip portion being located between the score lines indicated at **24** and **26**.

The second section of the top wall of the carton is shown at **27**, the same being similar to that shown at **21**, and being located between the score lines **26** and **28**. Beyond the score line **28** is shown the attaching flap **38** which, when the carton is in its folded position, is adhesively attached to the inside face of the rear wall **6** as clearly seen in Fig. 4.

Each of the top panel sections is longitudinally and interruptedly slit as shown at **30** and **31**, and these slits are connected by the transverse slits shown at **32**. Between the slits **32** and extending parallel thereto are shorter slits **33**. and at the opposite ends of the slits **33** are divergent extensions **34** from the ends of which score lines **35** extend angularly and divergently to form tri-

angulated elements shown at 36. At the ends of the carton are formed score lines 37, co-operating with parts of the slits 30, 31 and 32 to form downwardly-foldable flaps 39. The described arrangement is such that the slits formed as above described, result in the production of flap elements which fold downwardly on the fold lines 35 and "break" or separate on the slits 33, 34.

In Figs. 2 and 3, the manner in which the blank of Fig. 1 is folded and secured is shown. It will be noted that when folded as clearly seen in Fig. 2, the attaching flap 38 comes into position to permit of it being adhesively or otherwise attached to the rear wall 7, as shown in Fig. 3. It will be observed that the partition panels 12 and 14 extend upwardly within the carton body, and that the tongue 16 projects upwardly above the upper junction of these two partition panels. Accordingly, the tongue 16 becomes located between the two upwardly-directed and connected upper partition panels 23 and 25. This tongue portion may be adhesively secured between the two upper parts 23 and 25 and the three parts 16, 23 and 25 may be stapled or otherwise fastened together, resulting in a central partition or lengthy stiffening spine, extending down the carton for its entire length, and which spine is of exceptional strength and stiffness, and particularly in its upper, three-ply area. As will be seen in Fig. 3, the rear wall 6 of the carton is of substantially the same height as the central partition, so that when the cover is closed down, as seen in Fig. 3, it will rest upon and be supported by the upper end of the partition. As will be seen in Fig. 5, the central partition is preferably higher than the eggs 45 or other articles to be contained in the carton. Therefore, the firm support of the cover by the central, upstanding partition of exceptional rigidity and strength, insures the avoidance of pressure on the eggs or other contained articles, or the collapse or partial collapse of the cover even when a substantial number of the filled cartons are placed on top of one another in stacked relation.

The construction of the egg-receiving compartments is clear from Figs. 4 and 5 wherein it will be noted that the eggs or other rounded articles are each engaged between two of the flaps 40, 40 or 39, 40. When an egg or other article is pressed lightly down on two of the adjacent flaps, the flaps will fold downwardly on the slits 33, 34 and on the score lines 35, to allow the egg to enter into its compartment. The tendency of the two flaps to rise to horizontal position, causes them to lightly, but securely, and in a cushioned manner, embrace the egg between them as seen in Fig. 5, and this tendency also causes each co-operating pair of flaps to adjust themselves to eggs or other articles of varying sizes. The formation of the slits 33, with Y-shaped ends, enables the flaps formed by these slits and co-operating slit portions 31 and 32, to assume a curvature somewhat similar to the surface curvature of the egg or other rounded object, and the production of this curvature in the flaps can be facilitated by the use of light scorings in the flaps as indicated at 47 in the blank shown in Fig. 1.

From the foregoing, the construction and use of the improved carton will be readily understood. The carton in its folded and glued form, as in Fig. 3, can be collapsed flatly for shipment or storage. When erected it will stand firmly on any flat surface, being supported thereby by its front and rear ends as well as by the meeting tabs 9 and 11, which form central supporting legs, as clearly seen in Fig. 3. The eggs or other rounded objects placed in the carton are firmly engaged by the flaps 39 and 40 yet are cushioned by their resilient engagement between these flaps. The eggs in the two rows are wholly separated from one another by a relatively high central partition which is two-ply in its lower area and three-ply in its upper portion, thereby providing in such upper portion, wherein stiffness and rigidity is required, exceptional strength to resist collapse of the cover and thus holding the cover raised and free from contact with the eggs in the carton.

The triangulated ends 36 on the flaps 40 lend stiffness and rigidity to the carton; the eggs are kept separated and protected against breakage, which effort is further aided by the elevation of the greater portion of the bottom walls 8 and 17 of the carton from contact with any support on which the carton may be rested.

Having described a single embodiment of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. A carton having a rear wall, a cover hingedly attached thereto, a front wall having a bottom section connected to its lower end, the rear wall having a bottom section connected at its lower end, each of the bottom sections being provided with an upstanding panel, said panels being connected together at the top and forming a central vertical partition extending for the length of the carton and dividing the same into two compartments, a tongue extending upwardly from one of the panels and from the point of joinder of the panels, a pair of top walls located substantially at the point of joinder of the upstanding panels on the bottom sections, one of the top walls being connected at one end to the upper end of the front wall, the other top wall having a flap attached to the rear wall, each of the top walls having an upstanding strip portion, said strip portions being connected together at their upper ends, the tongue extending between the strip portions and co-operating therewith in forming a three-ply extension for the central partition, said central partition being substantially equal in height to the height of the rear wall.

2. A carton having a rear wall, a cover hingedly attached at the upper end of the same, a front wall having a bottom section connected to its lower end, the rear wall having a bottom section connected at its lower end, each of the bottom sections being provided with an upstanding panel, said panels being connected together at the top and forming a central vertical partition extending for the length of the carton and dividing the same into two longitudinally-extending compartments, a tongue extending upwardly from one of the panels and from the point of joinder of the panels and forming an integral upward extension of said panel, a pair of horizontally-disposed top walls located at the upper end of the panel, one of the top walls being connected at one end to the upper end of the front wall, the other having a flap attached to the inner face of the rear wall, each of the top walls having an upstanding strip portion, said strip portions being connected together at their upper ends, the tongue extending between the strip portions extending upwardly from the upper end of the panel and co-operating therewith in forming a three-ply extension for the central partion, said central partition being substantially equal in height to the height of the rear wall, and the cover, when in closed position, being supported by said partition.

3. A carton having a bottom wall composed of a front section and a rear section, a central wall composed of an upstanding partition located at the rear end of the front section and a similar upstanding partition located at the front end of the rear section, said partitions being in facial contact and being integrally connected together along a fold line at the top, a tongue formed out of one of the partitions and extending vertically upwardly from the point of joinder of said partitions, the front section of the bottom having a vertical front wall arising from its forward end, the rear section of the bottom having a vertical rear wall arising from its rear end, said rear wall being of greater height than the front wall, a top wall located at the upper end of the partitions, said top wall having a central, upstanding two-ply strip extending upwardly from it and from the upper end of the partition, said strip being positioned directly above the parti-

tions and receiving the tongue between its plies, means securing said plies together with the tongue interposed between them, the top wall being split to provide a plurality of downwardly-bent free end article-engaging flaps defining compartments between them, a cover member hingedly connected to the upper end of the rear wall and foldable downwardly to extend over and rest against the top of the central two-ply, tongue-reinforced strip, said cover member having a locking flap at its forward end, said locking flap having tabs at its end, and the carton having slits at the upper end of the front wall to receive said tabs.

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