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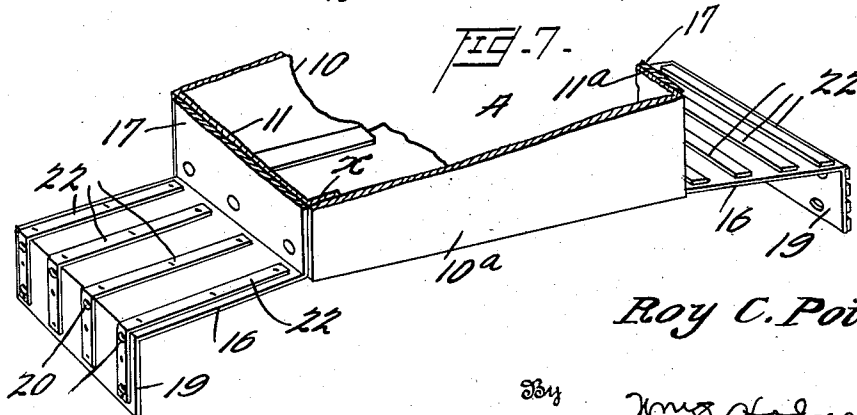
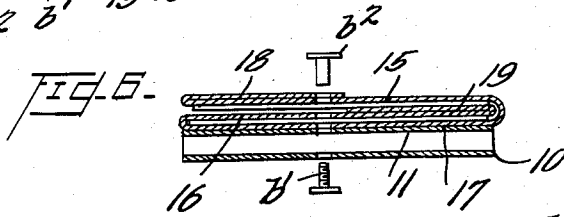
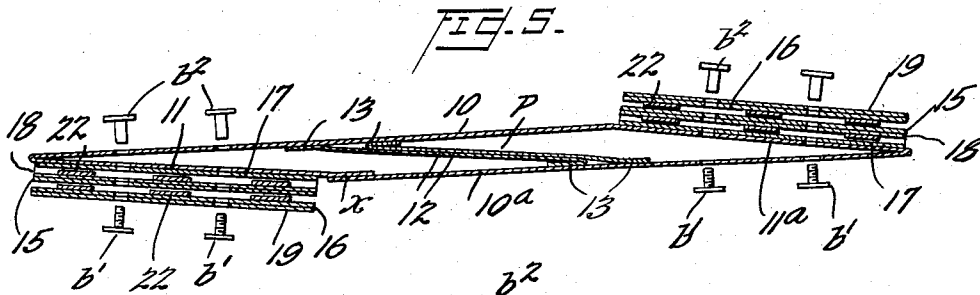
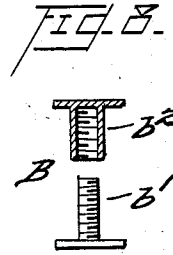
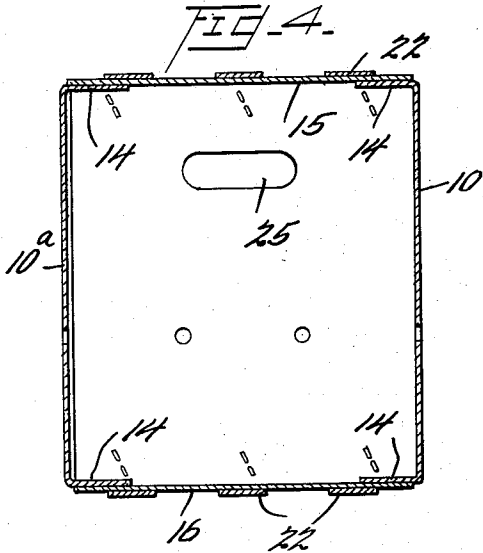
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2,297,982

COLLAPSIBLE, MULTICOMPARTMENT CARTON

Filed Dec. 26, 1940

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,297,982

COLLAPSIBLE MULTICOMPARTMENT
CARTON

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Application December 26, 1940, Serial No. 372,117

2 Claims. (Cl. 229—23)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

This application is made under the act of March 3, 1883, as amended by act of April 30, 1928, and the invention herein described and claimed, if patented, may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment to me of any royalty thereon.

This invention is a collapsible carton of the multiple compartment type, and particularly is designed for packaging and shipment purposes.

One of the objects of the invention is to provide a carton of the above mentioned type for the packaging and shipment of products, such as eggs, fruits, vegetables, etc. which may be packed in any desired manner now common in any particular industry.

A further object of the invention is to provide a collapsible carton of the multiple compartment type, and more particularly embodying two compartments, possessing the characteristics of sturdiness and maximum capacity while in use, but which may be compactly folded, when empty so as to occupy minimum space during return shipment.

A further object of the invention is to provide a multiple-compartment-collapsible carton of such construction that if occasion makes it desirable, may be divided into independent sections, each section constituting a separate container, by employing a suitable cutting tool to cut the sides of the case at a position between two adjacent members which constitute a cross partition of the carton.

A further object is to provide a convenient and satisfactory collapsible carton that may become the permanent property of a person or firm that is engaged in the production and marketing or either of them, of products delivered by shipment from one location to another, and which will remain the property of such producer or firm so as to be returned to him in a collapsed form for reuse.

A further object is to provide a collapsible carton of the type above described in which the top and bottom flaps may be readily replaced in the case of damage or detachment thereof from the body of the box while the carton is in use.

A further object is to provide a carton of the type mentioned provided with means for ventilation between superposed cartons, or beneath cartons resting upon a floor or other supports, and also for ventilating the interior of the carton if necessary.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:

Figure 1 is a perspective view of a carton constructed in accordance with the invention, illustrating the parts in open position. Figure 2 is a vertical longitudinal sectional view of the completely assembled box. Figure 3 is a horizontal sectional view on the lines 3—3, Figure 2. Figure 4 is a transverse sectional view on the line 4—4, Figure 2. Figure 5 is a horizontal longitudinal sectional view of the carton in collapsed condition. Figure 6 is a sectional view on the line 6—6, Figure 5. Figure 7 is a fractional perspective view illustrating a slight modification. Figure 8 is a detail view illustrating one of the fastening bolts.

Referring to the drawings, and more particularly to Figure 1, A designates a carton having a body consisting of two side walls 10 and 10a respectively, connected by end walls 11 and 11a respectively. Said body portion is preferably formed of a single strip of material, with overlapping ends as indicated at X, secured together in suitable manner. It is preferred to construct this body of pasteboard, fiber or other material, which is capable of being shaped into the desired form, and cut and partially cut and punched wherever necessary, by means of dies, and which will be sufficiently flexible at the corners or other bent portions thereof, to permit folding of the box to a collapsed condition in a manner to be later described.

It will be observed that the box is divided into two compartments a and b by means of a transverse partition P. Said partition is preferably formed of two relatively spaced partition members 12, of material similar to that employed for the body portion, each partition member having its vertical edges provided with integral right angular flanges 13, which are secured to the opposite sides 10 and 10a in suitable manner as by "stitching," i. e. the insertion of staples or other fastening means commonly employed in the art for this purpose. The corners c of the box and the corners c' produced by the flanges 13 are all sufficiently flexible to permit the box while in the open position illustrated in Figure 1, to be collapsed by a relative longitudinal movement of the two sides 10 and 10a, until they are brought into close relation with the partition P lying parallel between them.

If desired, the upper and lower edges of the sides are provided with integral flanges 14 which extend from each end to positions adjacent the

partition P, and are adapted to be so folded as to overhang the open space as clearly indicated in Figure 1. These flanges aid in sealing the box while closed and in condition for shipment.

The open top and bottom of the box body A are closed by suitable top flaps 15 and bottom flaps 16. These flaps are of the same or similar materials as the parts already described, and are secured to the ends of the body A in any suitable manner. It is preferred to construct the top flap 15 and the bottom flap 16 at each end as an integral part of a carrier member 17, which latter is coextensive in area with the adjacent end walls and secured to the exterior of the latter in suitable manner, as by means of stitching or the like. If desired, said flaps may be provided with strengthening cleats 22. Each top flap is provided with an angularly disposed flange 18 and each bottom flap is provided with a similar flange 19, the latter being provided with holes 20, which are arranged to register with similar holes 21 formed in each of the partition members 12, to receive suitable fastening devices. The cleats 22 may be coextensive with the length of the flap, or any part thereof. They are shown in Figure 1 as extended to the extremity of the movable flange or extension of each flap. Where the cleats extend to the extremity of the flange 19, the holes are made therein so as to provide additional reinforcement. If desired, the cleats on the flaps at one end may extend longitudinally of the box, and the cleats on the flaps at the other end may extend transversely of the box, (see Figure 7). By this arrangement friction surfaces are provided which act to prevent longitudinal and lateral slippage of the carton. Any desired fastening device may be employed, but for purposes of illustration, extension bolts B are shown, each consisting of two parts b^1 , b^2 , having telescopic threaded engagement, and each part provided with a head adapted to abut against an adjacent partition member 12.

In practice, the body A is first constructed by bending a strip of the material into rectangular form, and securing the two free ends together by means of an overlapping portion X, one end being attached to the adjacent extremity of a side wall. As stated above, the formation of the corners is such that the side walls may be moved longitudinally relative to each other, thereby bringing the end walls in approximate parallel relation thereto so as to collapse the box. After the formation of the body portion A, the central partition P will be placed in position by securing the flanges thereof to the side walls in the manner already described. Also, the carrier members 17 are secured to the outer surfaces of the end walls 11 and 11a, in such manner that the flaps 15 and 16 respectively, may be folded over to such positions that the flanges 18 and 19 may be extended into the space between the partition members 12. For instance, the bottom flaps 16 will be folded inwardly to engage the flanges 14 at the bottom of the box and the flanges 19 of the flaps are inserted into the space between the members 12. Thereupon, the flaps are secured to the partition in the manner already described.

The box is now ready for packing by any desired system, depending entirely upon the character of the product to be shipped. After the packing has been completed, the flaps 15 are folded downwardly over the top of the box so as to rest upon the adjacent flanges 14, and the flanges 18 are extended downwardly into

the space between the partition members 12. They are preferably retained in position by means of a strip of ordinary gum paper extending transversely of the box and covering the joint formed by the two flaps 15, along the line of the top edge of the partition P. It is also obvious that the bottom flaps 16 may be secured in place in the same manner instead of employing removable fastenings.

Hand holes 25 may also be cut through the end walls 11 and 11a and the overlying members 17, and if additional internal ventilation is desired "push out" sections 26 may be located wherever desirable.

If sealing of the packed carton should be necessary, the desired result may be obtained by pasting gummed strips along the top and bottom side corners of the carton, and over the hand openings.

If it is desired, the structure illustrated in Figure 1 may be readily divided into two separate units by cutting the sides of the box in alignment with the space between the partition members 12. This can be done by means of a saw, knife, or other suitable cutting tool. In this event, the flaps will be sealed to the partition member 12 of the section, or by covering the meeting edges of the flanges of each pair of top and bottom flaps in suitable manner, as for instance, by means of gum tape.

After the box has been delivered to the consignee and emptied, it may be readily collapsed for return shipment to the owner by disengaging the flanges 19 of the flaps 16 from the side members 12. This is accomplished, of course, by removing the bolts or other fastening means utilized to anchor these parts together. By then folding the flaps 15 and 16 over the ends of the body portion, as indicated in Figure 5, and then imparting relative longitudinal movement to the sides of the body members, so as to bring them together, a very compact arrangement is provided whereby quantities of the boxes may be re-shipped without requiring much space. The box may be retained in collapsed position by passing the bolts B through suitable flanges of the registering holes in the outermost folded flap and the adjacent member 17 and end wall.

The advantages of the invention will be readily understood by those skilled in the art to which it belongs. For instance, the carton may be manufactured of any desired proportions, which will be suitable for the packaging and shipment of such articles as oranges, apples, potatoes, etc. arranged in layers or otherwise, or, which prior to packing therein, have been packaged in separate unit containers, of which multiples thereof are packed in layers. Or, in the case of eggs, the articles may be packed in cartons, each containing any desired number, such, for example, as one dozen, and these unit cartons may be readily packed within the carton constructed in accordance with this invention. Or, if desired, the individual units of the product may be packed in multi-cellular packing materials, such as the usual form of standard honey comb fillers; or fillerless flats with appropriate separators or flats between the layers and under the bottom layer and over the top layer may be used, to provide suitable and proper packing for the various units of the product.

A further advantage is that a collapsible carton of two compartments is provided, which employs two hinged flaps for the closure of the

top and two similar hinged flaps for the closure of the bottom of the carton. These flaps are so hinged to the ends of the carton that they are foldable over the top and bottom respectively, and may also be secured to and folded back upon the ends of the case, thereby making them contiguous and substantial parts of the said ends. Thus, when the flanges of the flaps are folded over and inserted between the two members of the transverse partition, those flaps which comprise the bottom of the case may be anchored in place in such manner as to prevent their removal while the case is full. After the case has been emptied, it is obvious that the cover flaps may be folded back and nested over the respective ends of the box and retained flatly against the latter by securing devices while the box is in collapsed position.

An additional advantage is that the cleats which are secured to the top and bottom flaps, not only strengthen the latter, but also provide ventilating spaces beneath the bottom of the packed carton while resting upon a floor or other support, and between super-imposed cartons arranged in a stack. Internal ventilation may be obtained through the hand holes, and additional holes may be provided by removing any desired number of the "knock-out" sections.

Another advantage of the construction shown and described is that if occasion should require, a box of the character illustrated in Figure 1, for instance, may be divided into two by separating the body along a line corresponding to the space between the adjacent partition members 12.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in

which it may be made, or all of the forms of its use, what is claimed is:

1. A carton of the character described comprising a body portion consisting of side and end walls, an internally located transverse partition, top flaps and bottom flaps for closing the top and bottom openings respectively of the body portion, each flap being flexibly connected with an end wall and foldable over said openings, each flap having an integral relatively movable extension adapted to engage said partition member, spaced reinforcing cleats on the outside surface of said flaps to register with the spaces between similar cleats of a like carton, the cleats of the bottom flaps having portions extending to the extremity of said relatively movable portions, the last mentioned portions of the cleats having openings therein, said transverse partition also having openings positioned to register with the last mentioned openings, and removable anchoring means extending through said openings to retain said bottom flaps in engagement with said partition.

2. A carton of the character described comprising a body portion consisting of side and end walls, an internally located transverse partition, top flaps and bottom flaps for closing the top and bottom openings respectively of the body portion, each flap being flexibly connected with an end wall in such manner as to be foldable over said openings, each flap having an integral relatively movable angular extension adapted to engage with the partition member, cleats on the outside surface of top and bottom flaps at one end extending longitudinally of the box, cleats on the outside surface of the top and bottom flaps of the other end extending transversely of the box, and means for normally anchoring the bottom flaps to said partition.

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