

Feb. 25, 1941.

P. E. A. OLIVIER

2,233,221

FOLDED SHIPPING BOX

Filed Jan. 30, 1939

2 Sheets-Sheet 1

Fig. 1.

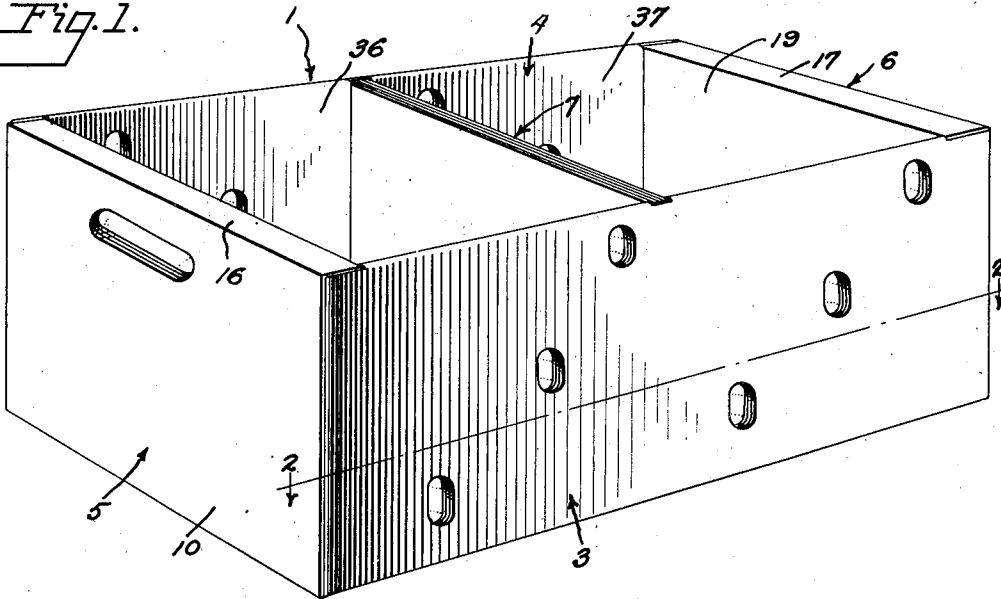


Fig. 2.

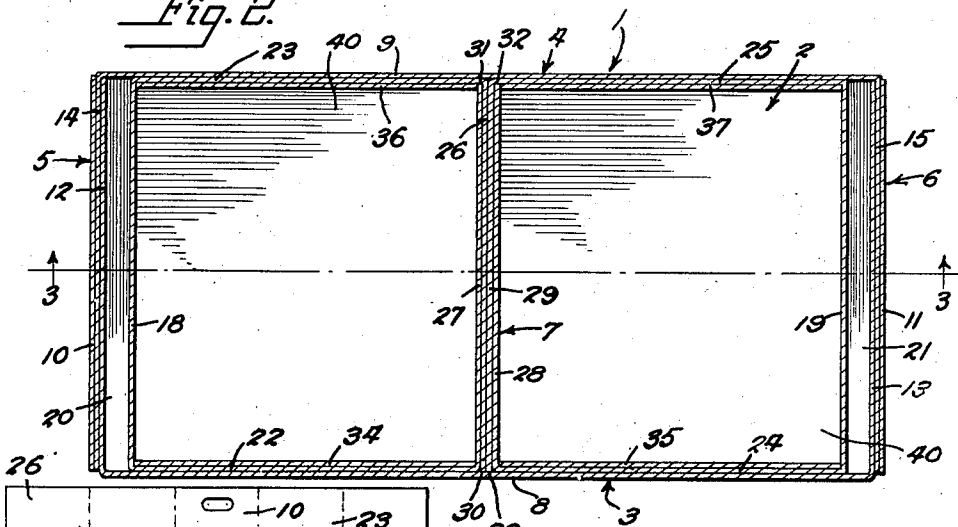
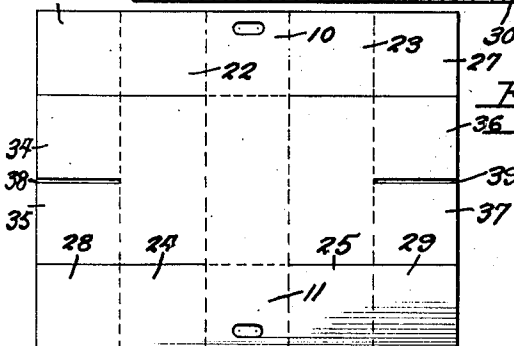


Fig. 6.



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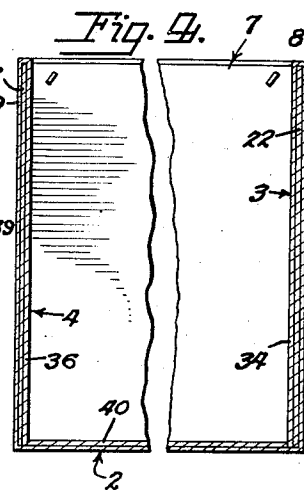
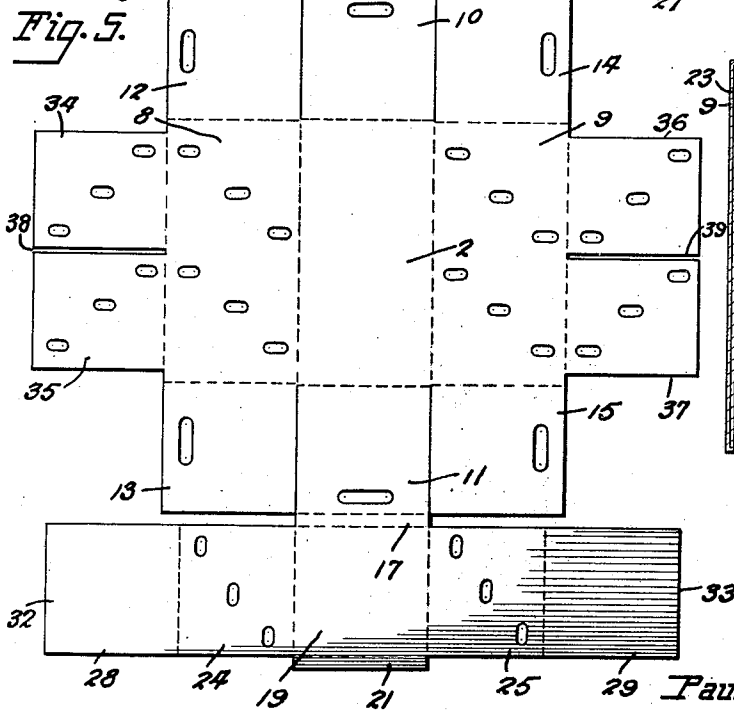
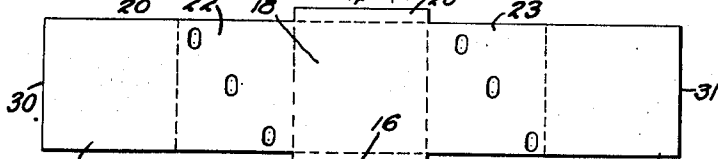
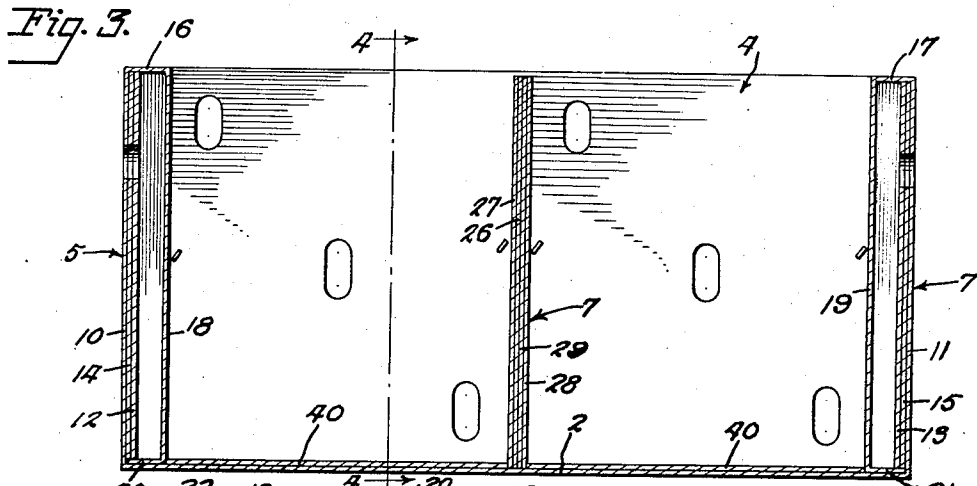
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FOLDED SHIPPING BOX

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,233,221

FOLDED SHIPPING BOX

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Application January 30, 1939, Serial No. 253,697

4 Claims. (Cl. 229—27)

This invention relates to cartons or boxes of light fabricated material such as kraftboard, assembled by being folded up from a blank.

The principal object of the invention is to provide a box of the type described having an integral middle partition adapting the box particularly to the packing and shipping of fresh citrus fruits.

Another object of the invention is to provide a box having parallelepipedal hollow ends in which lateral extensions from the inner walls of the opposite ends are creased to form panels of which those adjacent the inner end walls form laminations of the sides in the assembled box, while the remote panels of the extensions form plies of the middle partition of said box.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawings which accompany and form a part of the following specification and throughout the several figures of which the same characters of reference have been employed to designate identical parts:

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

Figure 2 is a horizontal section taken along the line 2—2 of Figure 1;

Figure 3 is a vertical longitudinal section taken along the line 3—3 of Figure 2;

Figure 4 is a section with the intermediate portion broken away, taken along the line 4—4 of Figure 3;

Figure 5 is a plan view of the blank from which the box or carton illustrated in the preceding figures is assembled;

Figure 6 is an alternative form of blank providing a simplified carton embodying the inventive features; and

Figure 7 is a plan view of a separate rectangle of sheet material being one of two similar rectangles which are placed in the bottom of the assembled carton, one on each side of the middle partition.

Referring now in detail to the several figures and particularly Figures 1 to 5, inclusive, the numeral 1 represents in general the carton or box having the bottom 2, the integral sides 3 and 4, the parallelepipedal ends 5 and 6 and the intermediate partition 7. The reference numerals above employed designate these respective members as a whole, it being understood that each of them is composed of a plurality of plies or panels as will presently appear with the excep-

tion of the bottom 2 which is not essentially of plural ply construction.

It will be understood that the box as illustrated in Figure 1 is preferably of the same size and general shape as the box or crate usually employed for the packing and shipping of citrus fruits.

The construction of this box or carton may be best understood with particular reference to the blank shown in Figure 5 which is shaped in the flat from light tough material such as is customarily used in the manufacture of cartons, kraftboard being a material of this class. It will be observed that the blank is divided into a number of panels by lines of weakness along which lines the blank is folded when assembled to form a box.

The blank comprises the bottom panel 2, outer side panels 8 and 9, and outer end panels 10 and 11. The side panels 8 and 9 are formed with lateral extensions 12, 13, 14 and 15 which fold inwardly forming a plurality of panels congruent with the outer end panels 10 and 11 and forming plural plies or laminations of the outer end panels. The outer end panels 10 and 11 and the extensions 12, 13, 14 and 15 are formed with hand holes which register in the assembled box, the plurality of plies providing a strong hand hole structure.

Inasmuch as the box or carton assembled from the blank shown in Figure 5 will have hollow parallelepipedal ends, the outer end panels 10 and 11 are provided with narrow extensions 16 and 17 which fold inwardly forming the tops of the parallelepipedons and which in turn are continued by extensions 18 and 19 of the same size and shape as the outer end panels 10 and 11 and which fold downwardly forming the inner end panels of the box. Said inner end panels are provided with flanges 20 and 21 along their bottom edges of the same width as the narrow extensions 16 and 17 which turn outwardly, forming the bottom walls of the parallelepipedons, resting upon the bottom panels 2 of the carton and abutting against the inner faces of the outer ends of the box.

The inner end panels 18 and 19 are provided with lateral extensions formed with lines of weakness parallel to the side edges of said inner end panels thereby defining adjacent panels 22 50 and 23, and 24 and 25 and remote panels 26 and 27, and 28 and 29. The adjacent panels 22, 23, and 24, 25 fold with respect to the inner end panels from which they emanate so as to lie against the inner faces of the side panels 8 and 9, the

adjacent panels 22 and 24 cooperating to cover the inner face of the side panel 8 and the adjacent panels 23, 25 cooperating to cover the inner face of the side panel 9. It will be observed that the adjacent panels are of less length than that of the side panels against which they rest. This follows from the fact that the end portions of the side panels 8 and 9 form the side walls of the parallelepipedons constituting the ends of the box.

The remote panels 26 and 27, and 28 and 29 fold inwardly from the adjacent panels when the latter are in place against the side panels of the carton constituting the middle partition. Both of the remote panels 26 and 28 on one side and the remote panels 27 and 29 on the other side may be folded together or they may be interleaved alternately. The end edges 30, 31, 32 and 33 of the remote panels abut, two against each of the opposite sides of the carton, and the middle partition is held in position by the flaps 34, 35, 36 and 37 which are spaced apart by slots 38 and 39, said slots being substantially the width of the thickness of the four laminations of the middle partition, the flaps 34, 35, 36 and 37 being carried by the top edges of the outer side panels 8 and 9 and being foldable inwardly so as to lie against the adjacent panels 22, 23, 24 and 25, the lateral edges of said flaps which form the sides of the slots 38 and 39 bearing against the opposite sides of the middle partition and holding it against displacement. The infolding of the flaps 34, 35, 36 and 37 causes the adjacent panels 22, 23, 24 and 25 to become the immediate laminations of the sides of the carton.

Suitable ventilation apertures are formed in those panels which form plies of the sides of the box and which register when the box is assembled. The inner end panels 18 and 19 are preferably imperforate so that the fingers of whoever may lift the box by the hand holes will not come in contact with the contents of the box.

By the construction above described a strong and rigid box is provided. The parallelepipedal ends constitute a strong reinforcement, the double spaced end walls being a great protection against crushing. The sides as well as the middle partitions are of multi-ply construction and the bottom may be reinforced by inserting separate rectangles of kraftboard 40 or other material which not only doubles the thickness of the bottom, but which holds the bottom edges of the flaps 34, 35, 36 and 37 in place.

It will be understood that the various contacting plies or laminations will be held together in rigid unity by stapling or other securing means at desired points.

Figure 6 shows a simplified blank for making a carton or box embodying the principles of the present invention, but dispensing with the hollow parallelepipedal end construction. In this figure, the outer end panels 10 and 11 carrying the adjacent panels 22, 23, 24 and 25 and the remote panels 26, 27, 28 and 29 emanate directly from the end edges of the bottom panel 2. When the end panels 10 and 11 are folded up, and the adjacent panels 22, 23, 24 and 25 are folded inwardly, the latter lie against the inner faces of the side panels 8 and 9. The remote panels 26, 27, 28 and 29 fold inwardly forming the middle partition, while the flaps 34, 35, 36 and 37 fold inwardly down against the adjacent panels 22 to 25, inclusive, and hold the middle partition against displacement.

The end panels 10 and 11 are provided with the hand holes 41 and 42.

While I have in the above description disclosed what I believe to be a preferred and practical embodiment of my invention, it will be understood to those skilled in the art that the details of construction and the arrangement of parts as shown and described are by way of illustration and not to be construed as limiting the scope of the invention as defined in the appended claims.

What I claim is:

1. Carton of the type formed by folding a blank of sheet material along predetermined lines of fold, comprising a bottom panel, outer side panels and outer end panels folded up from said bottom panel, inner end panels folded down from the tops of said outer end panels, said inner end panels having lateral extensions foldable with respect to the side edges of said inner end panels and foldable intermediately along lines parallel to said side edges forming panels adjacent and panels remote, with respect to said inner end panels, said adjacent panels in the assembled carton lying against the inner faces of said outer side panels cooperating therewith to form intermediate laminations of the sides of the carton, said remote panels folded inwardly forming plies of a middle partition emanating from opposite sides of said carton, and flaps extending from the top edges of said side panels separated by an intermediate slot in the plane of said middle partition of a width equal to the thickness of said middle partition, said flaps being folded inwardly adjacent said panels forming inner laminations of the sides of said carton, the edges of said slot supporting the plies of said middle partition in close, upright and transverse position.

2. Carton of the type formed by folding a blank of sheet material along predetermined lines of fold, comprising a bottom panel, outer side panels and outer end panels folded up from said bottom panel, inner end panels folded down from the tops of said outer end panels, with narrow top panels intervening, and outwardly folded flanges of a width equal to that of said top panels at the lower edges of said inner end panels, resting upon said bottom panel, said inner and outer end panels together with said top panels and said flanges forming parallelepipedal ends of said carton, said inner end panels having lateral extensions foldable with respect to the side edges of said inner end panels and foldable intermediately along lines parallel to said side edges forming panels adjacent and panels remote, with respect to said inner end panels, said adjacent panels in the assembled carton lying against the inner faces of said outer side panels cooperating therewith to form intermediate laminations of the sides of the carton, said remote panels folded inwardly forming plies of a middle partition emanating from opposite sides of said carton, and flaps extending from the top edges of said panels separated by an intermediate slot in the plane of said middle partition of a width equal to the thickness of said middle partition, said flaps being folded inwardly adjacent said panels forming inner laminations of the sides of said carton, the edges of said slot supporting the plies of said middle partition in close, upright and transverse position.

3. Carton of the type formed by folding a blank of sheet material along predetermined lines of fold comprising a bottom panel, outer side

panels and outer end panels folded up from said bottom panel, said outer side panels having lateral extensions foldable inwardly forming end plies against said outer end panels, inner end panels folded down from the tops of said outer end panels, said inner end panels having lateral extensions foldable with respect to the side edges of said inner end panels and foldable intermediately along lines parallel to said side edges forming panels adjacent and panels remote, with respect to said inner end panels, said adjacent panels in the assembled carton lying against the inner faces of said outer side panels cooperating therewith to form intermediate laminations of the sides of the carton, said remote panels folded inwardly forming plies of a middle partition emanating from opposite sides of said carton, and flaps extending from the top edges of said side panels separated by an intermediate slot in the plane of said middle partition of a width equal to the thickness of said middle partition, said flaps being folded inwardly adjacent said panels forming inner laminations of the sides of said carton, the edges of said slot supporting the plies of said middle partition in close, upright and transverse position.

4. Carton of the type formed by folding a blank

of sheet material along predetermined lines of fold, comprising a bottom panel, end panels and outer side panels folded up from said bottom panel, said end panels having lateral extensions foldable with respect to the side edges of said end panels and foldable intermediately along lines parallel to said side edges forming panels adjacent and panels remote, with respect to said end panels, said adjacent panels in the assembled carton lying against the inner faces of said outer side panels cooperating therewith to form intermediate laminations of the sides of the carton, said remote panels folded inwardly in overlapping contactive relation forming plies of a middle partition emanating from opposite sides of said carton, and flaps extending from the top edges of said side panels separated by an intermediate open ended slot in the plane of said middle partition of a width equal to the thickness of said middle partition, said flaps being folded inwardly adjacent said panels forming inner laminations of the sides of said carton, the edges of said slot supporting the plies of said middle partition in close, upright and transverse position.

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