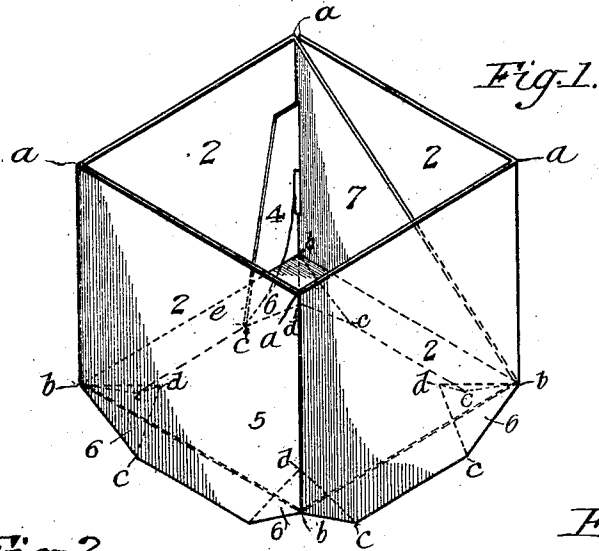
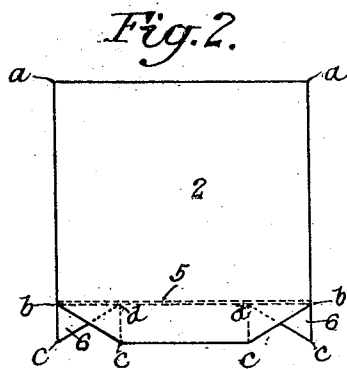
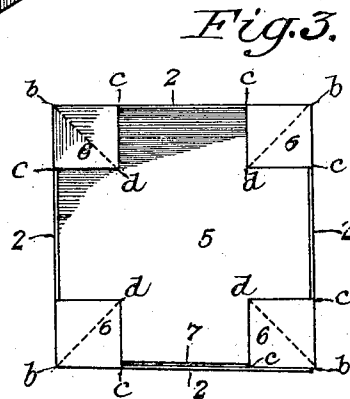
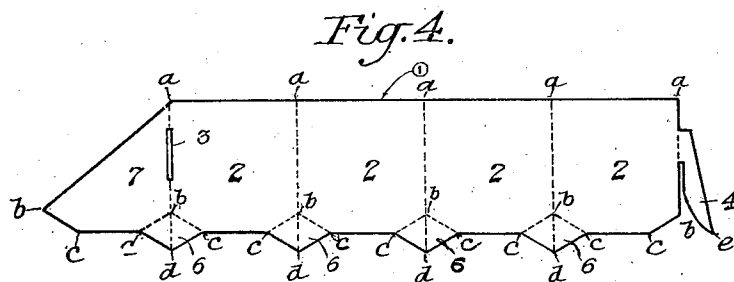


H. NICKELSEN, A. McMILLAN & H. PEMBERTON.
 COLLAPSIBLE FRUIT OR BERRY BOX.
 APPLICATION FILED JUNE 30, 1917.

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COLLAPSIBLE FRUIT OR BERRY BOX.

1,245,369.

Specification of Letters Patent.

Patented Nov. 6, 1917.

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To all whom it may concern:

Be it known that we, HARVEY NICKELSEN, a citizen of the United States, residing at Juneau, in the Territory of Alaska, and ANGUS McMILLAN, a subject of Great Britain, residing at Douglas, in the Territory of Alaska, and HAROLD PEMBERTON, a subject of Great Britain, residing at Douglas, in the Territory of Alaska, have jointly invented a certain new and useful Improvement in Collapsible Fruit or Berry Boxes, of which the following is a specification.

Our invention relates to improvements in collapsible fruit or berry boxes; and the object of our invention is to provide a collapsible box, adapted for use as a fruit or berry box or for other purposes, which may be readily manufactured at small cost, which may be shipped in knocked-down or collapsed form, which may be readily knocked-down into collapsed form and as readily set up into box form, which is strong and durable, and which is preferably held together without the use of staples, brads or other similar means.

The novel features of our invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates our invention as we prefer that it be accomplished, Figure 1 is a perspective, isometric view of our improved box in set-up form ready for use. Fig. 2 is a side view of the box in set-up form. Fig. 3 is a bottom view of the box in set-up form, looking directly at the box from the plane $c-c$. Fig. 4 is a view of the strip, when extended, from which when flexed the box body is formed.

Similar reference characters designate similar parts in the different views.

The term "sides," in the following descriptions and claims, embraces the ends of the box.

The body of the box is formed, preferably from a single strip of the form shown in Fig. 4, of suitable material, such as sheet wood or cardboard, preferably waxed, or glazed on the interior sides of the box, or similar material.

The strip 1 is provided with a plurality of Y-shaped flexible joints $a-b-c$, the long leg $a-b$ of the flexible joints $a-b-c$ being at right angles to the upper longitudinal edge of the strip 1, so disposed as to divide the main portion of the strip 1 into four

equal sides 2. The strip 1 is also provided with two irregular shaped and dissimilar ends, *i. e.*, the projection 4, and the overlap 7, so arranged as to interlock, thereby permitting the strip 1 to be, preferably, releasably fastened or locked into the form of a box body, and the flexible joints $a-b-c$ are so disposed as to form the triangular segments $c-b-c$.

The strip 1 is also provided with a plurality of flexible joints $b-d$, which are extensions of the long legs $a-b$ of the flexible joints $a-b-c$, but whose flexibility is negative or reverse, in that, it occurs on the reverse side of the strip 1 to that on which the flexibility of the Y-shaped flexible joints $a-b-c$ occurs.

The strip 1 is further provided with a plurality of angular extensions $c-d-c$ so projected or extended below the general trend of the lower longitudinal edge of the strip 1 that the apices d of the angular extensions $c-d-c$ and the apices b of the angular segments $c-b-c$ are, preferably, equal distances from the line of general trend of the lower longitudinal edge of the strip 1; and being so disposed as to form the parallelograms 6 each of which is composed of two equal equilateral triangles $b-c-d$, with a common base $b-d$.

The overlap 7 is, preferably, in form and area identical to the polygon which would be arrived at by cutting one of the sides 2 on a diagonal line extending from a , on the flexible joint $a-b$, across side 2, to b on the next adjacent flexible joint $a-b$.

The projection 4 is, preferably, an irregular shaped projection whose lower point or corner e lies, preferably, in and never below a common horizontal plane with the line of general trend of the lower longitudinal edge of the strip 1. The lower part of the inner or notched side of the projection 4 is, preferably, cut to lie in conformity with and in juxtaposition to the inner side of the flexible joint $c-b$ when the strip 1 is set up in box body form.

The slot 3 is a slot cut through the flexible joint $a-b$ which is common to the overlap 7 and the next adjacent side 2. The upper edges of the slot 3 and of the projection 4 are an equal distance vertically from the upper longitudinal edge of the strip 1, but the lower edge of the slot 3, is, preferably, a

moderately closer distance to the line of general trend of the lower longitudinal edge of the strip 1 than is the lower edge of the projection 4 at its point of junction to the side 2 next adjacent to it, thereby providing an open cut or slot 3, preferably, a little longer than the length of the junction between the projection 4 and the side 2 next adjacent to it.

The Y-shaped flexible joints $a-b-c$ and the flexible joints $b-d$ may be formed by scoring, creasing or slightly cutting the material. The scoriations or creases of the Y-shaped flexible joints $a-b-c$ are disposed on the reverse or opposite side of the strip 1 from which the scoriations or creases of the flexible joints $b-d$ are disposed, thereby creating a positive and a negative or reverse flexibility.

The strip 1 is brought into the set-up form of a box body by flexing the strip 1 about the Y-shaped flexible joints $a-b-c$ in such manner that the scoriations or creases of those joints will be on the outer side of the box body. The projection 4 is brought around on the outside of the overlap 7 and is inserted from the outside through the slot 3 into the interior of the box body, thus bringing the projection 4 into juxtaposition with, and bearing a slight outward pressure against, the inner side of one of the sides 2, with the lower part of the inner or notched portion of the projection 4 in conformity with and in juxtaposition to the inner side of the flexible joint $c-b$ of that particular side 2 against which the projection 4 presses, and likewise bringing the overlap 7 into juxtaposition with, and bearing a slight outwardly pressure against, the inner side of the adjacent side 2, with the edge $c-b$ of the overlap 7 in conformity with and in juxtaposition to the inner side of the flexible joint $c-b$ of that particular side 2 against which the overlap 7 presses. The flexible short legs $c-b$ of the Y-shaped flexible joints $a-b-c$, whose flexibility is positive by being disposed by means of scoriations or creases on the outer side of the strip 1 when in box body position, and the flexible joints $b-d$, whose flexibility is reverse or negative by being disposed by means of scoriations or creases on the interior side of the strip 1 when in box body position, being of equal length, the parallelograms 6, upon the flexing of the strip 1 into set-up form, are thrown into two equal inverted equilateral triangles $b-c-d$, with the apices d of the angular extensions $a-d-c$ extending toward the center of the interior of the box body, and the flexible joints $b-d$, which are the common bases of the two equal inverted equilateral triangles $b-c-d$, are thrown into a common horizontal plane, which lies at right angles to the long legs $a-b$ of the Y-shaped flexible joints $a-b-c$ and par-

allel to both the upper and lower longitudinal edges of the strip 1. The upper surfaces of the flexible joints $b-d$, when so flexed inwardly and upwardly, form four rests, in a common horizontal plane, for the support of the bottom member 5 of the box, and the box body, when so transformed upon the flexing of the strip 1, upon being placed upon a surface, rests upon the portions $c-c$ of the lower longitudinal edge of the strip 1.

The bottom 5, which is a removable bottom, preferably of the same material as the strip 1, is adapted to be fitted into the box body after the strip 1 has been flexed into set-up form, and rests upon and is supported by the four flexible joints $b-d$. The bottom 5 is retained in its operative position within the box body by the snugness with which it is fitted into the body and by the weight upon it of that foreign substance or article for which the box is selected as a container. The bottom 5, as well as serving the usual function of a bottom, also assists in retaining the box body in set-up position by furnishing an additional outward pressure to the projection 4 and to the overlap 7 against the respective sides 2 with which they come in contact, and by thus holding the projection 4 and the overlap 7 more tightly interlocked.

We are aware that prior to our invention collapsible fruit or berry boxes have been made where the box body consists of a single strip flexed at the four corners of the body by transverse flexible joints and having a removable bottom member. We therefore do not claim such invention broadly; but

We claim:

1. A collapsible box body, consisting of a single strip flexed by creases or scoriating lines, fastened or locked together by means of projection, slot and overlap, having the four lower corners of the body flexed inwardly and upwardly to form supports upon which a removable bottom member is supported in a horizontal plane, all substantially as set forth.

2. A collapsible box body, consisting of a single strip flexed by creases or scoriating lines, fastened or locked together by means of projection, slot and overlap, having the four lower corners of the body each provided with two angular portions, flexed inwardly and upwardly toward the center of the interior of the box body, whose upper edges, which lie in a common horizontal plane that is at right angles to the vertical sides of the box body, support a removable bottom member in a horizontal position and plane, all substantially as described.

3. A collapsible box body, consisting of a single strip flexed by creases or scoriating lines, fastened or locked together by means of projection, slot and overlap, and pro-

vided with a plurality of flexible joints which extend vertically from the upper longitudinal edge of the strip toward the lower longitudinal edge of the strip, but which
 5 before intersecting it branch off into a Y shape, and provided with a plurality of angular extensions projecting from the lower longitudinal edge, and having the angular extensions transversed by vertical flexible
 10 joints extending from the apices of the extensions to the crotches of the Y's, and having the vertical flexible joints of the angular extensions provided with a reverse or negative flexibility, and having a removable
 15 bottom member which rests in a horizontal plane upon the upper surfaces of the vertical flexible joints of the angular extensions when the strip is flexed into set-up form about the several flexible joints, all substantially as shown.

4. A collapsible box body, consisting of a single strip flexed by creases or scoriating lines, fastened or locked together by means of projection, slot and overlap, and provided
 25 with a plurality of angular extensions projecting from the line of general trend of the lower longitudinal edge, and provided with positive and reverse or negative flexibility obtained by a plurality of creases or scoriating lines on the main portion of the strip
 30 and creases or scoriating lines on the angular extensions on the reverse side of the strip, and having a removable bottom which is supported in a horizontal plane upon the upper edges of the four sets of equal inverted equilateral triangles which are created by the positive and reverse or negative

flexibility given the strip and its angular extensions, all substantially as set forth.

5. A collapsible box body, consisting of a
 40 single strip flexed by creases or scoriating lines, fastened or locked together by means of projection, slot and overlap, and provided with a plurality of angular extensions projected from the line of general trend of
 45 the lower longitudinal edge, and having a plurality of flexible joints extending vertically from the apices of the angular extensions to the upper longitudinal edge, and having the vertical flexible joints broken
 50 into a positive and reverse or negative flexibility, and provided with a plurality of shorter positive flexible joints extending from the vertical flexible joints, at the point of demarcation between positive and reverse
 55 flexibility, to a point of intersection on the lower longitudinal edge of the strip with the angular extensions, and provided with a removable bottom member, which is supported in a horizontal plane upon the angular
 60 extensions which, by the positive and reverse flexibility of the several joints, are flexed toward the center of the interior of the box body, all as substantially set forth.

In witness whereof we have hereunto
 65 signed our names in the presence of two subscribing witnesses.

HARVEY NICKELSEN. [L. S.]
 ANGUS McMILLAN. [L. S.]
 HAROLD PEMBERTON. [L. S.]

Witnesses:

R. E. ROBERTSON,
 A. H. MANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."