E. L. WALKER.

KNOCKDOWN OR FOLDABLE BOX.

APPLICATION FILED MAR. 17, 1906.

917,384. Patented Apr. 6, 1909.

Fig. 1.

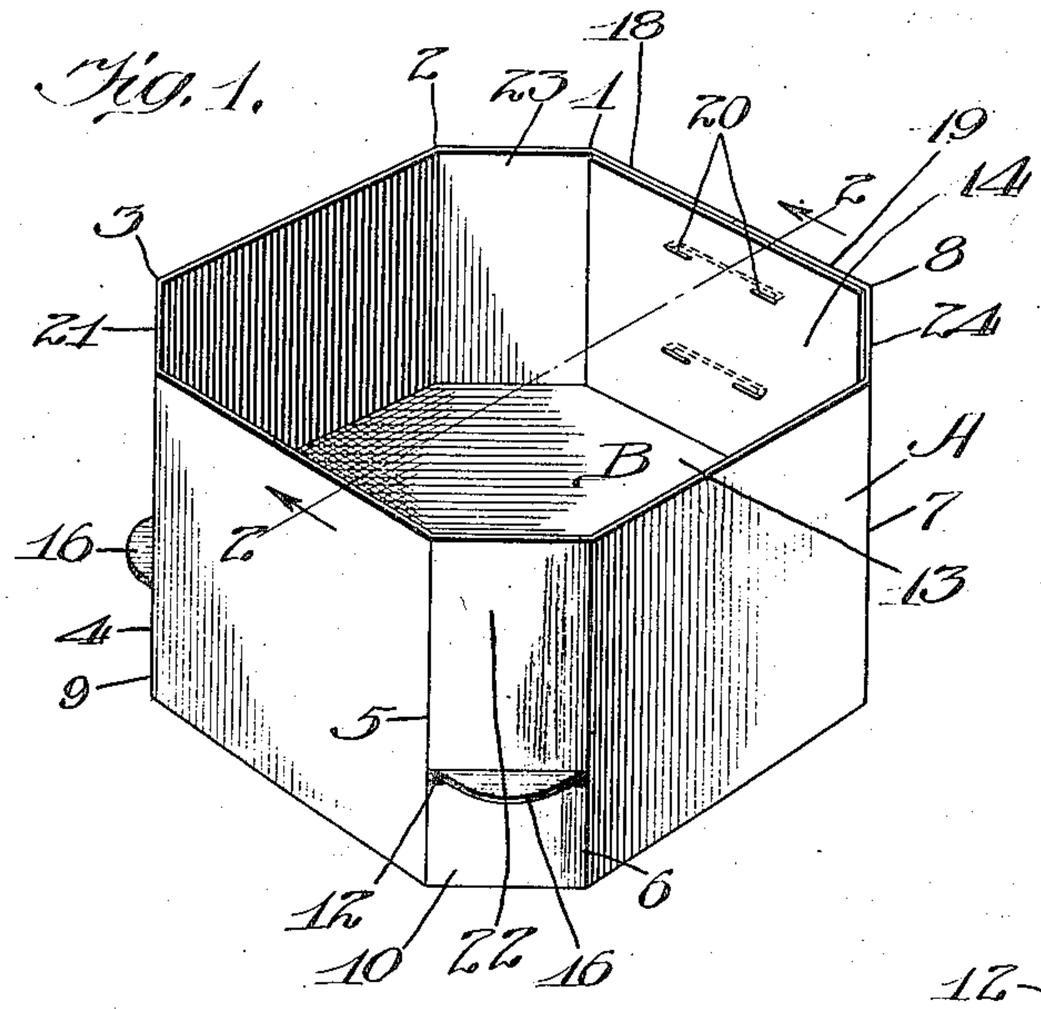


Fig. 3.

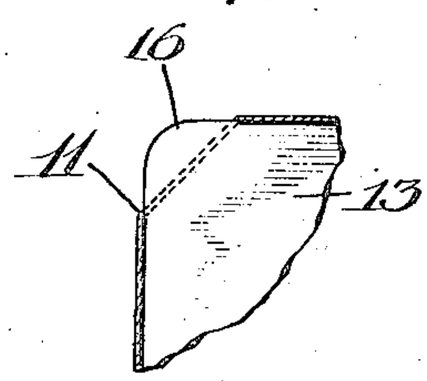


Fig. 2.

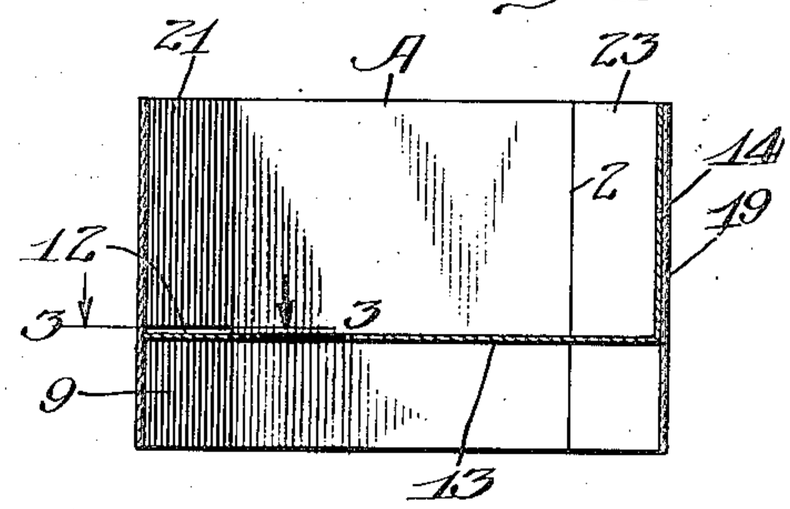


Fig. 4.

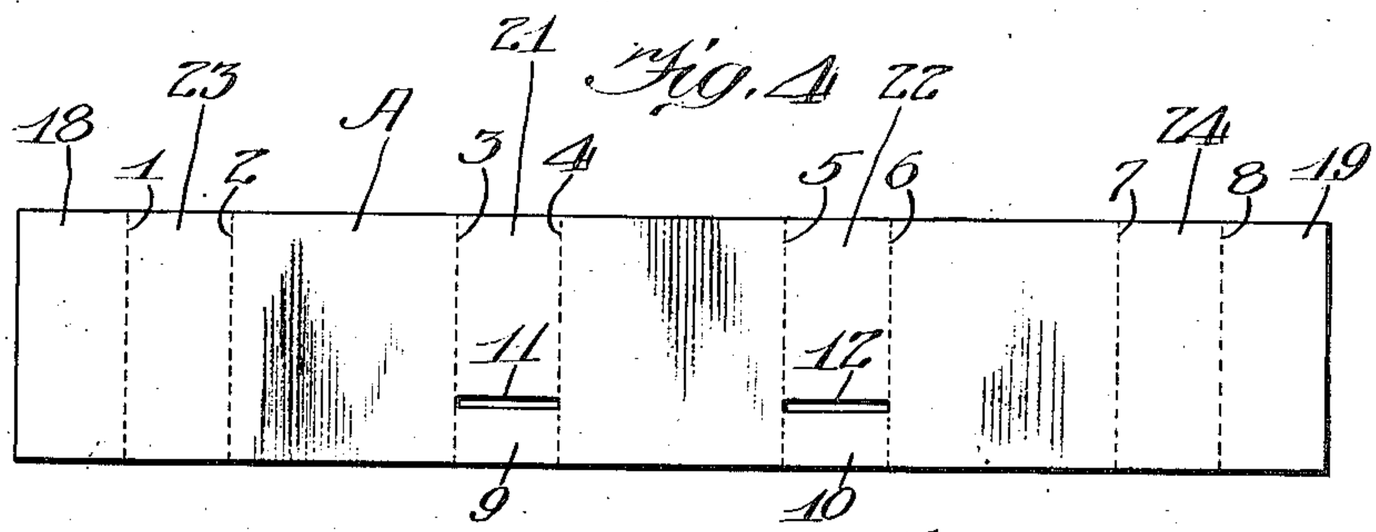
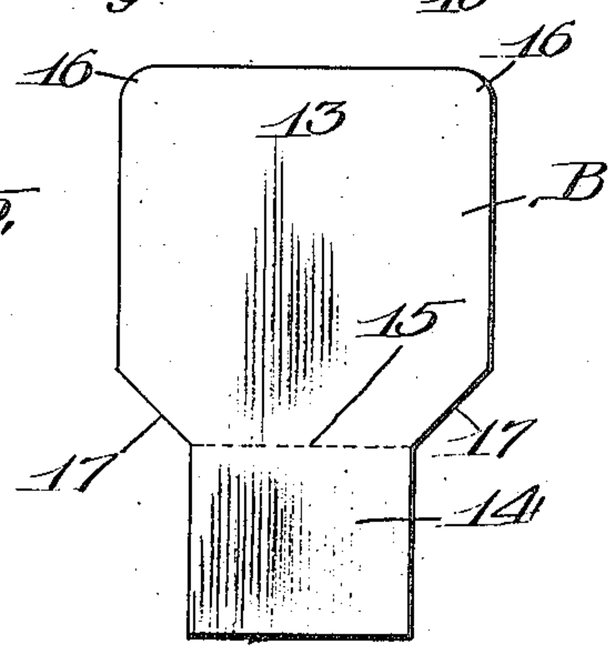


Fig. 5.



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UNITED STATES PATENT OFFICE.

ENOS L. WALKER, OF ST. LOUIS, MISSOURI.

KNOCKDOWN OR FOLDABLE BOX.

No. 917,384. Specification of Letters Patent. Patented April 6, 1909

Application filed March 17, 1906. Serial No. 306,536.

To all whom it may concern:

Be it known that I, ENOS L. WALKER, a citizen of the United States of America, and resident of St. Louis, Missouri, have invented a certain new and useful Improvement in Knockdown or Foldable Boxes, of which the following is a specification.

My invention contemplates an improved knock-down or foldable box adapted for use in shipping berries, fruits or other products.

Generally stated, the object of my invention is the provision of an improved construction and arrangement by which a highly satisfactory knock-down or foldable box can be produced and shipped at a comparatively small cost to the manufacturer and with entire satisfaction to the user.

Special objects are the provision of an improved construction and arrangement whereby the box can be shipped in a perfectly flat condition consisting when folded of only three superimposed layers of thicknesses, and then expanded and adjusted into condition for use, without the necessity of employing any staples or tacks or other fastening devices for so doing; the provision of an improved construction and arrangement whereby the box when collapsed or knocked down and shipped in a flat condition will not consist of separable parts or sections which might be separated and disarranged during shipment and will be of minimum thickness, so that a large number can be secured in a bundle; and the provision of certain details and features of improvement tending to increase the general efficiency and serviceability of a box of this particular character, and to reduce to a minimum the amount of material necessary therefor.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a perspective of a box embodying the principles of my invention. Fig. 2 is a section on line 2—2 in Fig. 1. Fig. 3 is a detail section on line 3—3 in Fig. 2. Fig. 4 shows the blank from which the sides of the box are constructed. Fig. 5 shows the blank from which the bottom of the box is constructed.

As thus illustrated, my improved berry box may be constructed of cardboard, wood veneer, or any other suitable sheet material. Looking down upon the box, or looking at the bottom of the same, the shape thereof is octagonal in character. In other words, the box has eight side walls, the four alternate walls being relatively broad, while the four intermediate or corner walls are relatively narrow. These eight walls are provided by the blank shown in Fig. 4, which consists of a strip of veneering or other material provided with transverse score lines 1, 2, 3, 4, 5, 6, 7 and 8. The narrow side walls 9 and 10 of this blank are provided with transverse slots 11 and 12 which are located near the bottom edge of the said blank A.

In Fig. 5 the blank B has a bottom portion 13 and a side portion 14 which are separated from each other by a score line 15. It will be seen that the portion 13 has rounded corners 16 at one end, and flat or straight corners 17 at the other end, the portion 14 being relatively narrow.

The blank A is first folded and its end portions 18 and 19 brought together edge to edge, and in the same plane. After this, the portion 14 is laid flatwise upon the inner surfaces of the two portions 18 and 19, and the three portions then secured together by long staples or wire fastening devices 20. The portion 14 forms a stay for holding the meeting portions 18 and 19 together. This leaves the bottom portion 13 in condition to be swung in either direction until its corners 16 engage and protrude through the slots 11 and 12 of the corner walls 21 and 22. The corners 17 are, as stated, flat or straight, and thus adapted to have their edges lie flatwise upon the inner surfaces of the narrow corner or side walls 23 and 24 of the blank A. In this way, I provide a folding box in which the ends of the blank are not lapped.

It will be understood that the material will give or spring sufficiently to allow the bottom wall to be sprung into and out of position. In this way, the two portions of the bottom wall can be folded flat upon themselves, and the side walls of the box will then collapse and assume a flat condition. The box is then in a perfectly flat and good condition for shipment. When received by the user, it is only necessary to take each box and spring its bottom into place, causing the corners to engage the slots in the sides of the box. No tacks, staples or other fastening devices are necessary for securing the parts together after the bottom is sprung into place. In this way the user has nothing to

do but unfold each box and spring its parts into place. In other words, the tacking or stapling is all done in the factory. During shipment, the bottom and side parts of the box cannot become separated or disarranged.

It will be seen that the slots 11 and 12 are narrow and straight, so that the corners 16 of the bottom are prevented from rising when the box is opened up. In this way the bottom is secured in place and serves to brace the whole box.

As the end edges of the sides are butted together, rather than overlapped, the box will fold into three thicknesses, if the bottom is pushed down, thus making it possible to get a large number in one bundle—that is to say, more than would be the case if the box folded into four or more thicknesses. If the bottom is pushed up in the box, then only four thicknesses will be formed when the box is folded, which is less than heretofore. Also, this construction saves material, and reduces the cost of production, as well as the cost of shipment. In the manufacture of large numbers of such boxes, a saving of a fraction of an inch of material per box is very important. The saving in freight that results from the closer packing together of the boxes is also important. I accomplish both of these savings, in the manner stated. Furthermore, I use only two staples for securing the box together, these staples being parallel and arranged to span the abutting end edges of the flexible side walls. This means, of course, that the box can be stapled by one operation of a stapling machine, and that a minimum amount of wire will be used for this purpose. Also, these staples cross the edges of the veneer, and hold the same in place, thus giving a box which is always smooth on the outside whether folded or open.

What I claim as my invention is:

1. A folding box comprising flexibly connected sides, of suitable length to provide a rectangular box adapted to fold flat with only three thicknesses of the material of the box superimposed upon each other, corner portions 21, 22, 23, 24 of equal width intermediate said sides, one of said sides formed by the two rectangular end portions 18 and 19, said corner portions 21 and 22 being provided with narrow horizontal slots 11 and 12, a bottom 13 provided with rounded corners 16 and 16 adapted to be pressed down to engage said slots, an upwardly extending rectangular portion 14 flexibly connected with said bottom, and wide staples 20 inserted through the said portions 14, 18, 19 to hold the same together, with the end edges of the portions 18 and 19 in the same vertical plane, said portion 14 covering the joint between the abutting edges of the portions 18 and 19 from the bottom 13 to the upper edges of said portions, but leaving the said abutting edges uncovered below the said bottom, and said staples straddling the said joint, substantially as shown and described.

2. A folding box comprising a flexible strip having the ends thereof butted together to provide side walls for the box, and a folding bottom having one end portion turned up and secured over the said abutting edges and the other end free, whereby the bottom and sides form only three thicknesses when the box is folded one way, and only four when folded the other way, as set forth.

3. A folding box comprising flexibly connected sides free from overlapping portions, and a folding bottom provided with a free end portion, and having the other end portion thereof turned up to form only a two fold thickness with one entire side of the box, as set forth.

4. A folding box comprising a flexible strip having the ends thereof butted together to provide sides for the box, a reinforce back of said abutting edges, two parallel staples disposed horizontally one above the other and spanning the said abutting edges to secure the same to the reinforce, and a folding bottom having one end free and the other end flexibly connected with said reinforce, as set forth.

5. A folding box comprising flexibly connected sides, of suitable length to provide a rectangular box, adapted to fold flat with only four thicknesses of the material of the box superimposed upon each other, corner portions 21, 22, 23, 24 of equal width intermediate said sides, one of said sides formed by the two rectangular end portions 18 and 19, said corner portions 21 and 22 being provided with narrow horizontal slots 11 and 12, a bottom 13 provided with rounded corners 16 and 16 adapted to be pressed down to engage said slots, an upwardly extending rectangular portion 14 flexibly connected with said bottom, and wide staples 20 inserted through the said portions 14, 18, 19 to hold the same together, with the end edges of the portions 18 and 19 in the same vertical plane, said portion 14 covering the joint between the abutting edges of the portions 18 and 19 from the bottom 13 to the upper edges of said portions, but leaving the said abutting edges uncovered below the said bottom, and said staples straddling the said joint, substantially as shown and described.

Signed by me at Cape Girardeau, Mo., this 13th day of March, 1906.

ENOS L. WALKER.

Witnesses:
MARTIN G. BENDER,
GUS B. ENGELMANN.

Correction in Letters Patent No. 917,384.

It is hereby certified that in Letters Patent No. 917,384, granted April 6, 1909, upon the application of Enos L. Walker, of St. Louis, Missouri, for an improvement in "Knockdown or Foldable Boxes," an error appears in the printed specification requiring correction, as follows: In line 22, page 1, the word "of," second occurrence, should read *or;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 18th day of May, A. D., 1909.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.