H. OPGENORTH.

KNOCKDOWN COLLAPSIBLE SHIPPING CRATE.

APPLICATION FILED MAY 26, 1919.

1,324,168.

Patented Dec. 9, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

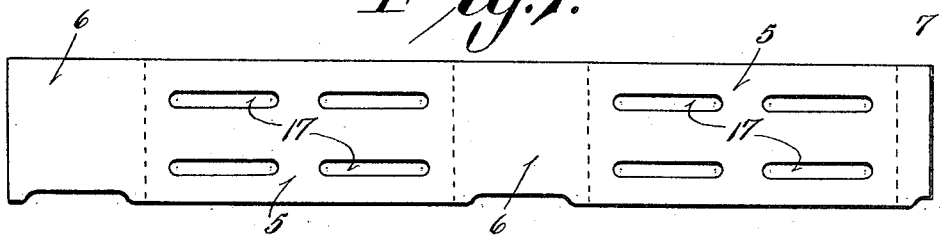


Fig. 2.

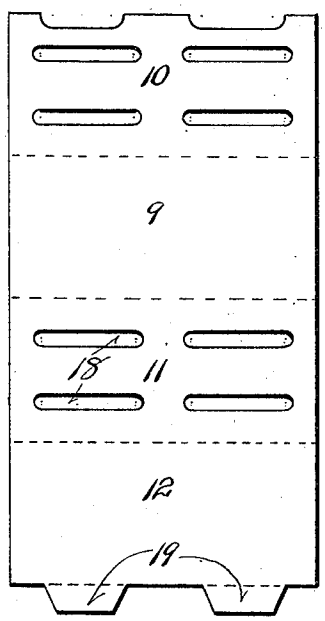


Fig. 3.

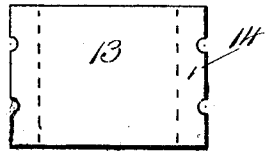
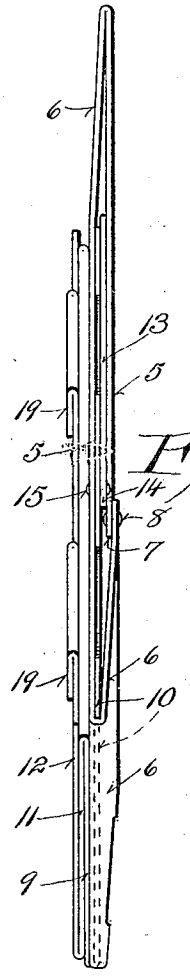


Fig. 4.



WITNESS

J. F. Britt

INVENTOR

Henry Opgenorth

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2 SHEETS—SHEET 2.

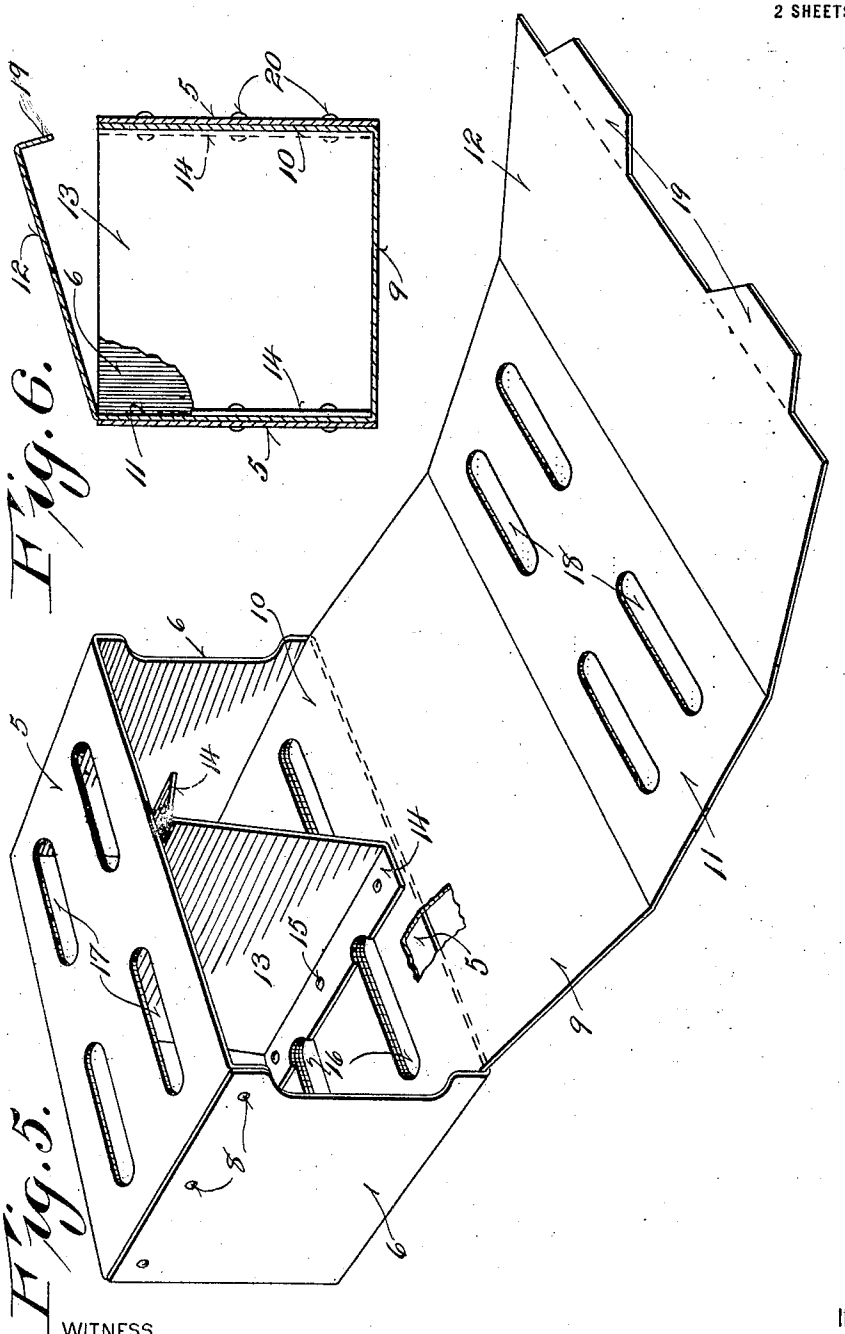


Fig. 6.

Fig. 5.

WITNESS

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UNITED STATES PATENT OFFICE.

HENRY OPGENORTH, OF SHEBOYGAN, WISCONSIN.

KNOCKDOWN COLLAPSIBLE SHIPPING-CRATE.

1,324,168. Specification of Letters Patent. Patented Dec. 9, 1919.

Application filed May 26, 1919. Serial No. 299,850.

To all whom it may concern:

Be it known that I, HENRY OPGENORTH, a citizen of the United States, and resident of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented certain new and useful Improvements in Knockdown Collapsible Shipping-Crates; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in collapsible crates formed wholly of cardboard or similar sheet material, and more particularly of that type adapted to contain boxes of berries or other articles.

It is in general the object of my invention to simplify and otherwise improve the structure and to increase the strength of boxes of this character when in open or set-up position, as well as to facilitate the operation of setting up the boxes for use from the collapsed or folded shape in which they are shipped.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of parts which will be hereinafter more particularly described and defined by the appended claim.

In the accompanying drawings:

Figure 1 is a plan view of the blank from which the outer walls of the box are formed.

Fig. 2 is a plan view of the blank from which the remainder of the box is formed.

Fig. 3 is a plan view of a partition blank for the box.

Fig. 4 is an edge view of the box folded for shipping.

Fig. 5 is a perspective view of the box in partly set-up position.

Fig. 6 is a transverse sectional view through the set-up box.

Referring now more particularly to the drawings, the outer side walls 5 and the end walls 6 of the box are formed of a single elongated strip of cardboard or similar body material bent on transverse fold lines and having a valance flap 7 at one end which is bent in lapped relation to the other end and secured thereto by suitable fastening members 8 to thus provide a permanently connected foldable outer wall structure at the time of manufacturing the box. The bottom 9, inner side walls 10 and 11 and top 12 of the box are also formed of a single strip of material bent on transverse score lines at the meeting longitudinal edges of said portions, the width of this strip being equal to the length of the side walls, and the bottom 9 being disposed between the inner side walls 10 and 11 while the top 12 is disposed at the outer edge of the inner wall 11. A partition wall 13 is also provided having its width equal substantially to the width of the end walls and having valance flaps 14 at its edges for securement to the wall structure.

At the time of manufacture of the box, the inner wall 10 is disposed against one of the outer walls 5 and these walls are secured together at their central portions by fastening members 15 which are also passed through one of the flaps 14 of the partition wall 13. Thus, at the time of manufacture, all of the parts of the box are secured together and thus held to facilitate the proper folding operations to effect the set-up or open relation of the box parts. The connected walls 5 and 10 are provided with elongated sight and ventilation slots 16 which are disposed in registry and the other outer side wall 5 is provided with other slots 17 which register with slots 18 of the side wall 11 in the set-up position of the box. The top 12 is provided on its free longitudinal edge with flaps 19 which are adapted to engage between certain wall sections as will be hereinafter set forth.

In the folded shape of the box for shipping, the outer wall structure is collapsed as shown in Fig. 4, the partition 13 lying flat therebetween, and the bottom is folded back onto the outer face of the adjacent wall 5, with the side wall 11 and top 12 folded thereonto. The thickness of the box when collapsed is thus only equal to the thickness of the superposed wall portions and a considerable economy may be effected in shipping the box.

In setting up the box for use, the top 12 and inner wall 11 are inserted within the outer wall structure which is opened up and the partition wall 13 is bent to extend transversely between the side walls, fastening members 20 being passed through the outer wall 5, inner wall 11 and the remaining flap of the partition wall 13 to thus firmly hold all of the parts of the box in open or set-up position, and while I provide a plurality of fastening members 20, it will be noted that each one of the fastening

members serves the function of holding all the box parts, and thus the term single fastening means may be employed to designate one or a plurality of the members 20. The cover flaps 19 are engageable between the walls 5 and 10 in closing the box.

An exceedingly simple structure and operation has thus been provided whereby a box of the present character may be shipped in the flat state and then set up and assembled for use. It will be noted that in the set-up position of the box a double wall side structure is provided which is braced by the attaching flaps of the partition wall.

While I have shown and described a preferred embodiment of my invention, it will be appreciated that various changes and modifications of structure may be employed to meet differing conditions of use and manufacture without departing in any manner from the spirit of my invention as set forth in the appended claim.

What is claimed is:

A foldable crate structure adapted to be shipped for subsequent setting up, comprising an elongated strip of material transversely scored to provide foldably connected outer, side and end walls and having its ends secured together, a second strip of material substantially equal in width to the length of the outer side walls and transversely scored to provide a top and bottom and inner side walls substantially corresponding in area to the area of said outer side walls, a partition wall having an attaching flange engaged against and extended transversely across the inner face of one of the inner side walls, and a series of securing members passed through said attaching flange and through the adjacent inner and outer side walls whereby to hold all of said parts in partly assembled position and in proper relation for subsequent setting up, said second strip of material having its portions foldable together exteriorly of the foldably connected outer walls and adapted to lie thereagainst when connected thereto by said securing members.

In testimony that I claim the foregoing I have hereunto set my hand at Sheboygan, in the county of Sheboygan and State of Wisconsin.

HENRY OPGENORTH.