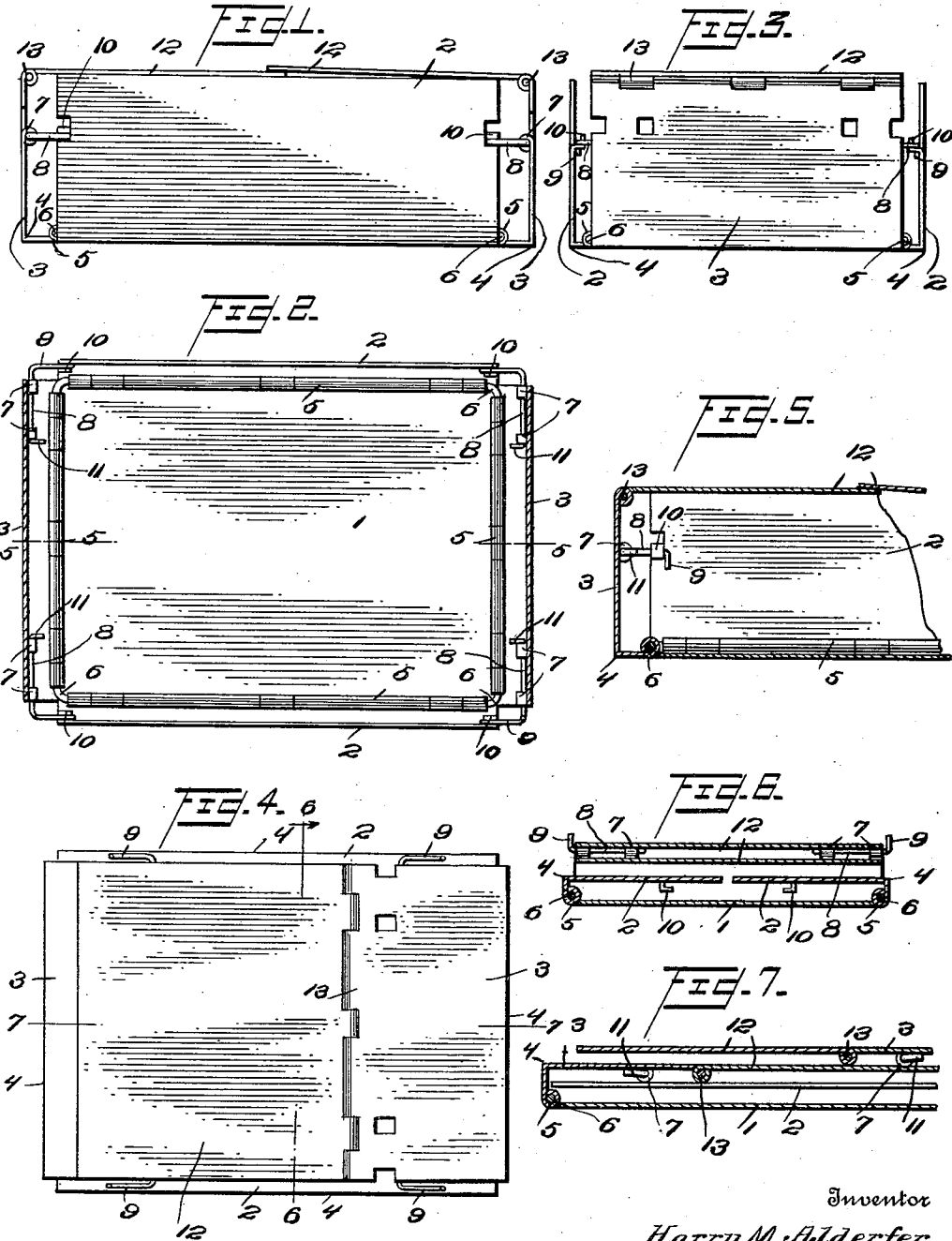


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KNOCKDOWN BOX AND CRATE.
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Patented Feb. 13, 1912.



Witnesses

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KNOCKDOWN BOX AND CRATE.

1,017,194.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY M. ALDERFER, a citizen of the United States, residing at Lower Providence, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Knockdown Boxes and Crates, of which the following is a specification.

My invention relates to improvements in knock down boxes and crates, the object of the invention being to provide an improved construction of box such as ordinarily employed in the shipping of berries, together with an improved construction of crate adapted to support a number of said boxes, and so construct the boxes that they may be folded into small compass, and so construct the crate that it may be folded into relatively small compass to inclose all of its folded boxes, and when in such position, said crate is of a reduced length and breadth whereby a number of said folded crates may be returned in an open crate.

A further object is to provide an improved construction of box and crate, which may be manufactured and sold at a comparatively low price, yet which will be strong and durable in use, and economize in freightage on return shipment.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a view in side elevation illustrating my improved crate in operative position. Fig. 2, is a plan view of Fig. 1. Fig. 3, is an end view of Fig. 1. Fig. 4, is a plan view showing the crate in knock down or folded position. Fig. 5, is a fragmentary view in longitudinal section on the line 5—5 of Fig. 2. Fig. 6, is a view in section on the line 6—6 of Fig. 4, and Fig. 7, is a view in section on the line 7—7 of Fig. 4.

The sides and the ends of the crate which is of sheet metal are each formed by bending sheet metal plates as shown at 4, whereby said sides and said ends also provide extensions for the bottom at the sides and ends, as clearly shown in Fig. 2. While these portions of the sides and ends are integral with the sides and ends, in effect, they form extensions of the bottom when the crate is in normal position, and they have

hinge connection to the bottom as shown at 5. This hinge connection is formed by providing registering bearing sleeves on the bottom, and extensions through which a wire 6 is passed, and constitutes a hinge pin for the several sections.

Bearings 7 are formed in the ends by pressing the metal inwardly, and these bearings support short shafts 8. Hooked crank arms 9 are provided on the outer ends of these shafts 8, and are adapted to engage over lugs 10 struck inwardly from the sides to hold the sides and ends in vertical position.

Shorter crank arms 11 are provided on the inner ends of shafts 8 to facilitate their operation and to limit the turning movement of the shafts. Top sections or plates 12 have hinge connection 13 with the ends 3, so as to cover the contents of the crate. To fold this crate, it is simply necessary to release the crank arms 9 from engagement with lugs 10, when the sides will fall inwardly, and the ends on the sides, and due to the shape of the sides and ends which form the bends 4, it will be noted that the dimensions of the folded crate are less than the dimensions of the open crate, and also the folded crate forms a receptacle for the smaller boxes hereinafter described. The purpose of this is to provide a folded crate containing its folded boxes to enable a number of such folded crates to be packed in an open crate of the same construction and return to the shipper.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A crate comprising a bottom, sides and ends bent forming when the crate is open, extensions on said bottom, said extensions hinged to the bottom, whereby when said sides and ends are folded, a receptacle is formed, substantially as described.

2. A crate comprising a bottom, sides and ends bent forming when the crate is open, extensions on said bottom, said extensions hinged to the bottom, whereby when said

sides and ends are folded, a receptacle is formed, and means for holding the sides and ends in upright position, preventing hinged movement thereof, substantially as described.

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10 3. A crate comprising a bottom, sides and ends bent forming when the crate is open, extensions on said bottom, said extensions hinged to the bottom, whereby when said sides and ends are folded, a receptacle is formed, means on the ends constructed to

engage the sides and hold the sides and ends in upright position, whereby a receptacle is formed with open corners, substantially as described. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY M. ALDERFER.

Witnesses:

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