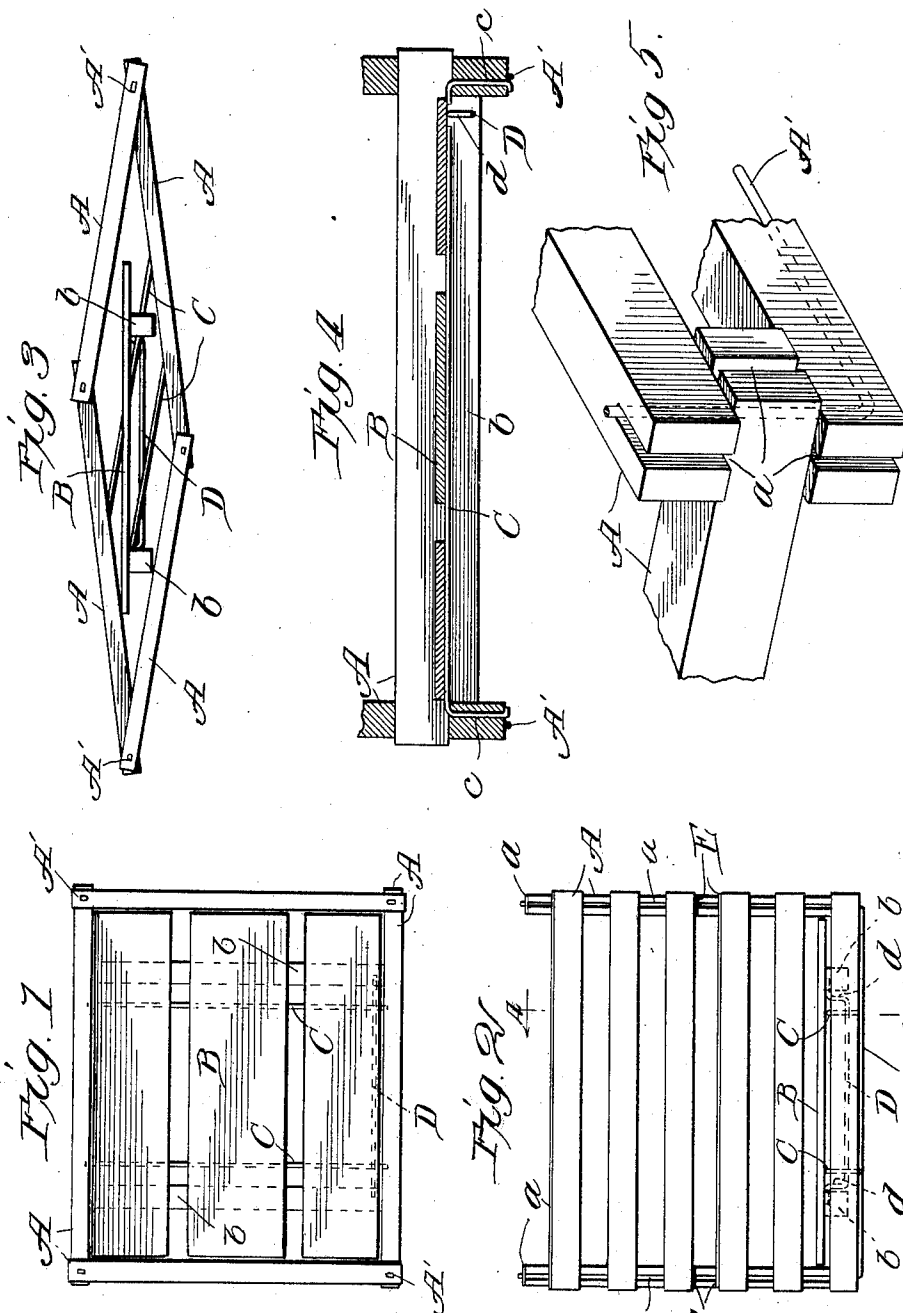


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SHIPPING CRATE.
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1,002,511.

Patented Sept. 5, 1911.



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UNITED STATES PATENT OFFICE.

ALBERT M. GIFFORD AND FRED M. GIFFORD, OF MANCERLONA, MICHIGAN.

SHIPPING-CRATE.

1,002,511.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ALBERT M. GIFFORD and FRED M. GIFFORD, citizens of the United States, residing at Mancelona, in the county of Antrim and State of Michigan, have invented new and useful Improvements in Shipping-Crates, of which the following is a full, clear, and exact description.

Our invention relates to crates for shipping produce such as vegetables, fruit, eggs, and the like.

It is the object of our invention to construct a crate that is light in weight, and economical and durable in construction.

It is also an object of our invention to provide suitable novel means whereby the crate may be easily knocked down into a flat condition for the purpose of storing it in a restricted space or for conveniently returning it to the owner or shipper thereby materially reducing the "return charge" of the express companies for the latter service.

These objects we accomplish by the means and in the manner hereinafter fully described and as more particularly pointed out in the claims, reference being had to the accompanying drawings forming a part hereof, wherein,

Figure 1 is a top plan view of one of our improved crates. Fig. 2 is a side elevation of the same. Fig. 3 is a top plan view of one of our crates showing the same in folded or collapsed position. Fig. 4 is a vertical fragmental section taken on line 4-4, Fig. 2, slightly enlarged. Fig. 5 is a fragmental perspective view of one corner of the crate drawn almost full size.

Referring to the drawings, it will be seen that our invention preferably consists of a compartment or box of rectangular-shape having its vertical side-walls made of suitable elongated wooden slats A, A, slightly opened. The ends of the slats forming each side-wall preferably overlap and are supported on the ends of the slats forming the walls at an angle thereto, and have their ends provided with elongated vertical slots *a*, whereby the same are pivotally secured together by substantially U-shaped clamping wires A'. These wires which are preferably two in number pass down through the slots *a* in the ends of the slats, thence along the undersurface of the lowermost slat, and then up through the slots at the opposite end. The upper ends of this clamping-wire are turned over and bent

down flat against the upper face of the top-most slat and securely clamp the compartment together. In order to protect the top slats, a facing-plate *a'* preferably of sheet metal of the same width as the thickness of the slats is placed over the upper edge of each of the four uppermost slats comprised in the side-walls of the crate. This also provides means whereby the splitting of the upper slat when the clamping wires are tightened, is avoided and at the same time reduces the wear at this point to a minimum, especially when the crates are subjected to rough handling when in transit. The connecting member of wire A' extending along the bottom edge of the lowermost slat affords protection for said slat.

By the construction above described it will be seen that the slats forming the walls of the crate are pivotally secured together and said walls may be readily flattened out whenever desired. The bottom B of this crate comprises several flat plates that are supported on two transverse rails *b*, *b*, and said bottom is slightly less in area than the inside dimensions of the crate when the latter is opened to its fullest extent. In order to provide means whereby this bottom may be knocked-down or collapsed when the crate is closed and yet retain the bottom within the same, we secure said bottom in place by suitable novel devices as hereinafter described. These devices comprise transverse wire runners C, C, that connect the lowermost rails of the crate and have portions *c* that extend vertically down through the same where their extremities are bent laterally under the slat to lock them in place. These transverse wires act as supports for the bottom B of the crate and as well as a guide for the same when the crate is opened or knocked-down. Said bottom is held in place by means of a suitable swinging-guard D, that is preferably a flattened U-shaped wire the short parallel arms *d* of which have lateral extensions that project into suitable recesses formed in the adjacent side of the rails *b* under the crate-bottom. This guard is arranged at one of the ends of said rails so that when the crate is to be collapsed the bottom may be lifted to a vertical position with one side resting on the runners C, and the U-shaped guide will prevent the same from being dropped out should the knocked-down crate become inverted. When two opposite cor-

ners of the crate have been pushed together, the bottom will assume a position approximately parallel to the major axis of the diamond-shaped figure formed by the outline of the knocked-down crate, as shown in Fig. 3 of the drawings. In order to further strengthen the crate suitable metal plates E, E', are placed on the upper surface of one of the slats of each of the side-walls of the crate, intermediate the top and bottom and if desired, the same may be done on the lower slats, but this is not necessary.

We have not shown any particular form of cover in connection with this crate. It, however, will be apparent that any suitable form of cover may be used, and that the same may be secured in place in any suitable manner.

What we claim as new is:—

1. A crate comprising side-walls formed of slats pivotally connected together, runners separate from the pivotal devices extending across the lower portion of said crate at points between the corners thereof, a swinging bottom normally supported on said runners, and means secured to said bottom and engaging said runners and adapted to retain said bottom within said crate.

2. A crate comprising side-walls formed of slats pivotally connected together, runners separate from the pivotal devices extending across the lower portion of said crate at points between the corners thereof, a swinging bottom normally supported on said runners, and a swinging guard secured to said bottom and engaging said runners and adapted to retain said bottom within said crate.

3. A crate comprising side-walls formed of slats having their ends pivotally connected together and adapted to be collapsed, a swinging bottom retained within said crate when the latter is collapsed, and runners separate from the pivotal devices extending across the lower portion of said crate for supporting said bottom within said crate when the latter is opened.

4. A crate comprising side-walls each comprising a plurality of relatively narrow slats having their ends lapping past the ends of the slats of the adjacent wall, metallic protecting strips secured to the uppermost of said slats, ties passed through the lapping ends of said slats and having

their upper ends bent down upon said protecting strips, runners separate from the pivotal devices extending across the lower portion of said crate, and a swinging bottom mounted on said runners, and means secured to said bottom whereby the same is retained within said crate when the latter is closed.

5. A crate comprising side-walls formed of slats pivotally connected together, runners separate from the pivotal devices extending across the lower portion of said crate, a swinging bottom normally supported on said runners, and a substantially U-shaped guard engaging said runners and having the ends of its parallel members pivotally journaled in the frame of said bottom and adapted to retain the latter within said crate.

6. A crate comprising side-walls each consisting of a plurality of narrow slats having their ends lapping past the ends of the slats of the adjacent walls, metallic protecting strips secured to the uppermost of said slats, ties passed through the lapping ends of said slats and having their upper ends bent down upon said protecting strips, runners separate from the pivotal devices extending across the lower portion of said crate, a swinging bottom mounted on said runners, and a substantially U-shaped guard engaging said runners and having the ends of its parallel members pivotally journaled in the frame of said bottom and adapted to retain the latter within said crate.

7. A crate comprising side-walls formed of slats pivotally connected together, parallel runners separate from the pivotal devices extending across the lower portion of said crate and having their ends pivotally secured to oppositely disposed slats, a swinging bottom normally supported on said runners, and a substantially U-shaped guard engaging said runners and having the ends of its parallel members pivotally journaled in the frame of said bottom and adapted to retain the latter within said crate.

In witness whereof we have hereunto set our hands this 22nd day of December 1909.

ALBERT M. GIFFORD.
FRED M. GIFFORD.

Witnesses:

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MERRITT HOYT.