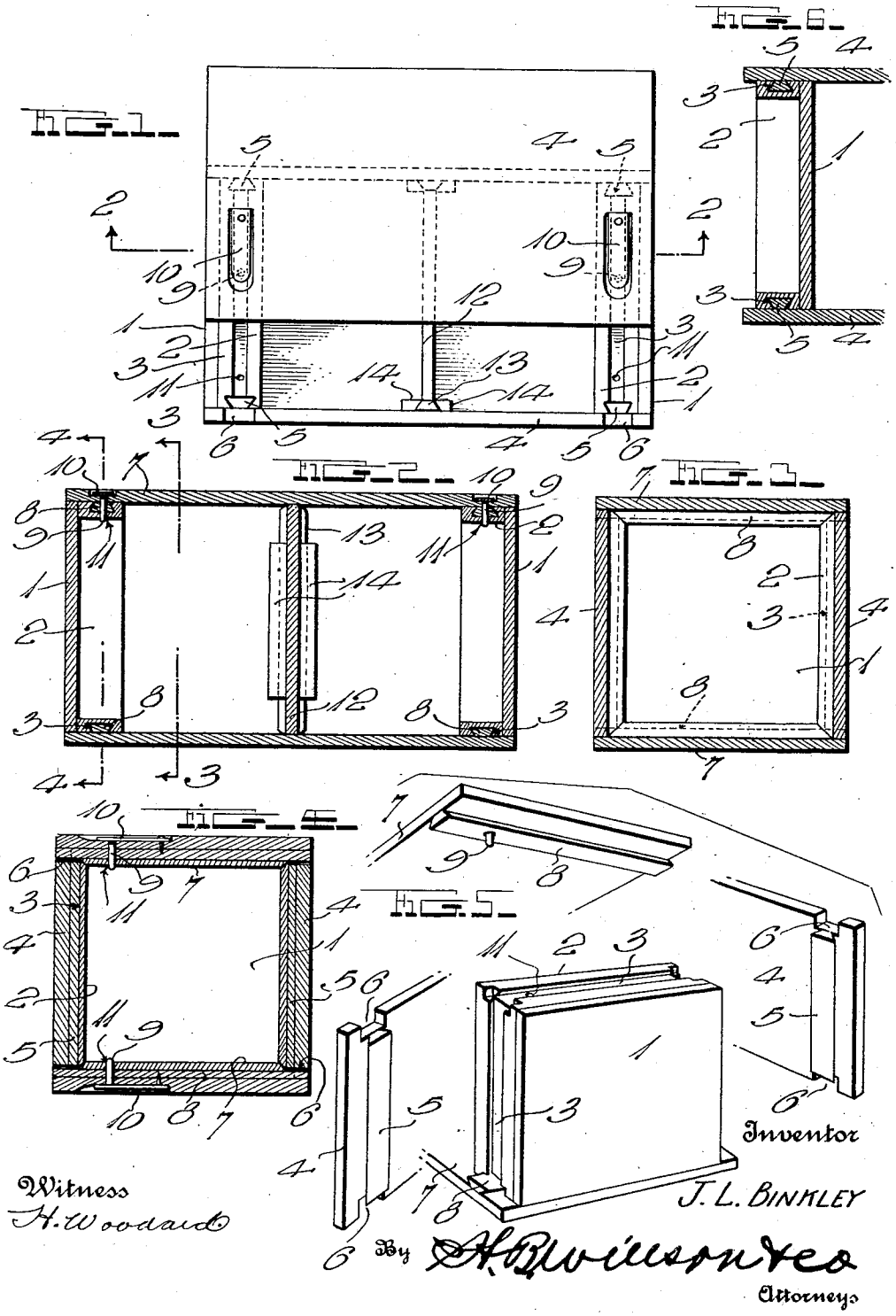
Sept. 2, 1924.

1,507,042

J. L. BINKLEY

KNOCKDOWN BOX

Filed April 16, 1923



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UNITED STATES PATENT OFFICE.

JOHN LEWIS BINKLEY, OF GREENVILLE, OHIO.

KNOCKDOWN BOX.

Application filed April 16, 1923. Serial No. 632,502.

To all whom it may concern:

Be it known that I, JOHN LEWIS BINKLEY, a citizen of the United States, residing at Greenville, in the county of Darke and State of Ohio, have invented certain new and useful Improvements in Knockdown Boxes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a novel form of knock-down box which may be easily and inexpensively manufactured and will be well adapted for shipping purposes, the construction being such that the sides and ends may be readily disconnected from each other and compactly tied for return shipment.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Figure 1 is a plan view of a knock-down box constructed in accordance with my invention, showing the uppermost of the four side members, partially removed.

Figure 2 is a longitudinal sectional view on line 2—2 of Fig. 1.

Figures 3 and 4 are vertical transverse sectional views on lines 3—3 and 4—4 of Fig. 2.

Figure 5 is a perspective view showing one end of the box with its several parts in juxtaposition.

Figure 6 is a detail sectional view showing a different manner of using the end sections of the box.

In the drawings above briefly described, the numerals 1 designate ends which, in the form of construction shown, have lateral flanges 2 at their edges, the outer sides of the flanges being formed with undercut grooves 3. These flanges constitute what may be referred to as frames. A pair of side walls 4 contact with two opposite edges of the ends 1 and are provided with transverse undercut ribs 5 receivable in the undercut grooves 3 of the adjacent frame-pieces, said sides 4 being formed with notches 6 which aline with the grooves 3 of the remaining frame-pieces.

The side members or walls 4 are of the same width as the ends or end members 1 but an additional pair of side members 7 which co-operate with the members 4 in forming the four side walls of the box, are of sufficient width to extend across the opposite edges of said members 4, thereby holding the latter against edgewise movement and consequently preventing removal of the ribs 5 from the grooves 3. The members or top and bottom 7 are also formed with undercut ribs 8 at their ends receivable in certain of the grooves 3 of the end members 1 and to hold said members 7 against edgewise movement, I prefer to provide them with locking pins 9 carried by springs 10 and engageable with openings 11 in the end members. By this arrangement, it will be seen that all parts of the box will be held in operative relation, yet that these parts may be quickly and easily disassembled for storing or for return shipment.

If desired, a partition 12 may be provided for the box, said partition having undercut cleats 13 on its ends receivable between stationary undercut cleats 14 secured to two of the opposed side members. If desired, a hook and eye or other latch may be employed to hold this partition against sliding when one of the side members 7 is removed, but this is not essential.

The box may be used for numerous purposes when constructed as, or substantially as, shown and described, but when it is specially designed for shipping fruit such as oranges, lemons or grapefruit, the end members 1 may be reversed so that their flanges 2 extend outwardly as detailed in Fig. 6. There is thus no possibility of these flanges injuring the fruit, nor will they interfere with proper packing and unpacking.

The device may be constructed of any desired size and of any appropriate material. I prefer, in some instances, to form almost the entire box out of compressed paper and when this is done, the several ribs, flanges and the like, may be formed integrally with parts carrying them, as will be readily understood.

As excellent results may be obtained from the general construction shown and described, this construction may be followed if desired, but within the scope of the invention as claimed, numerous minor changes may be made.

I claim:

1. A knock-down box comprising a pair of end-frames, the side-pieces of which are

provided with undercut grooves, and a top, bottom and sides having transversely disposed undercut ribs adapted to be slidably received in said grooves, and ends carried by said frames.

2. A structure as specified in claim 1, wherein said top, bottom, and side walls have portions arranged in abutting relation to prevent relative edgewise movement of these parts, and releasable means for assisting in maintaining said parts against the aforesaid movement.

3. A knock-down box comprising rectangular end members having undercut grooves in their edges, a pair of opposed side members contacting with two opposite edges of said end members and having transverse undercut ribs received in the grooves thereof, said side members being of a width equal to the length of said opposite edges and having notches alined with the grooves of the remaining edges of said end members, additional side members contacting with said additional edges of the end members and having undercut ribs received in the grooves thereof, said additional side members contacting with the edges of said first named side members to hold the latter in place, and releasable means for holding said additional side members against edgewise movement.

In testimony whereof I have hereunto affixed my signature.

JOHN LEWIS BINKLEY.