

P. C. THAYER.

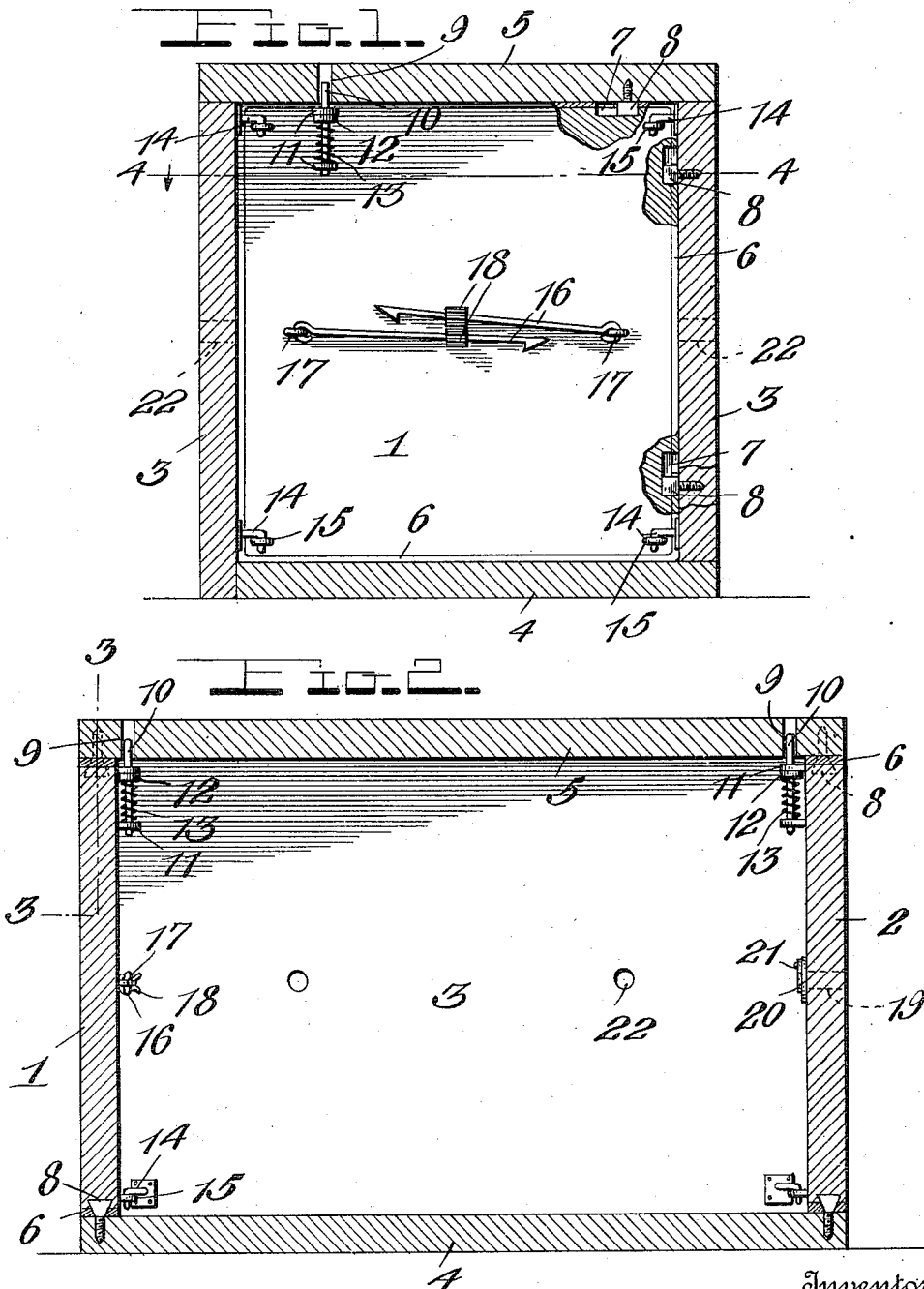
KNOCKDOWN BOX.

APPLICATION FILED MAR. 31, 1910.

972,038.

Patented Oct. 4, 1910.

3 SHEETS-SHEET 1.



Witnesses
 Chas. L. Griesbauer.
 C. H. Griesbauer.

by

P. C. Thayer;

A. B. Wilson & Co.

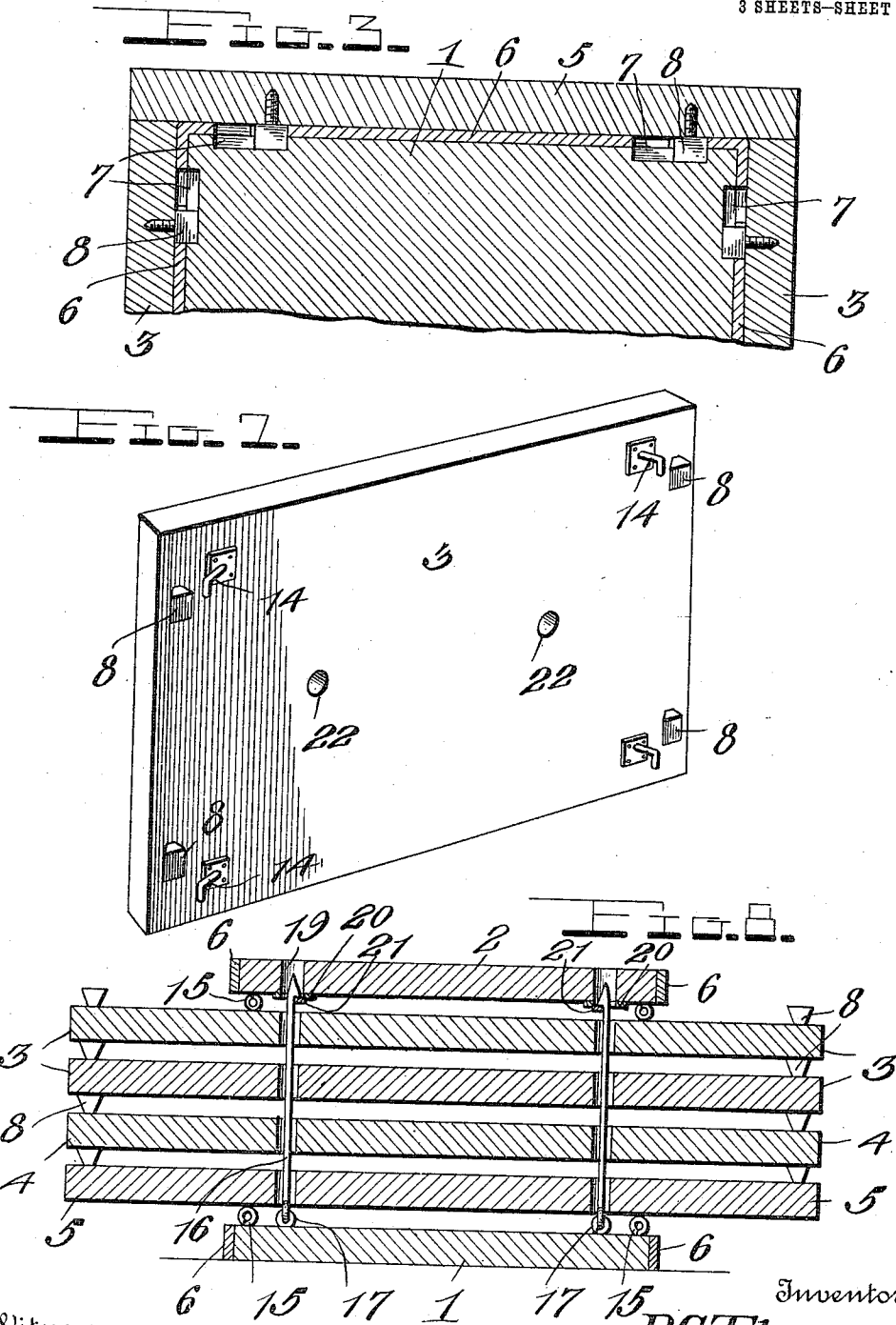
Attorneys

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3 SHEETS-SHEET 2.



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Inventor

P. C. Thayer,

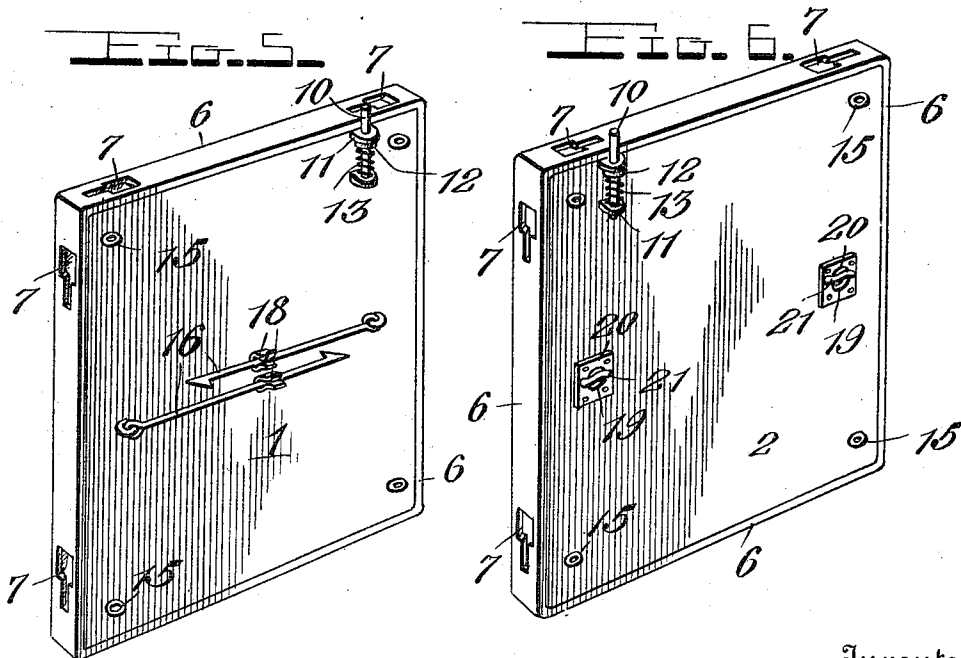
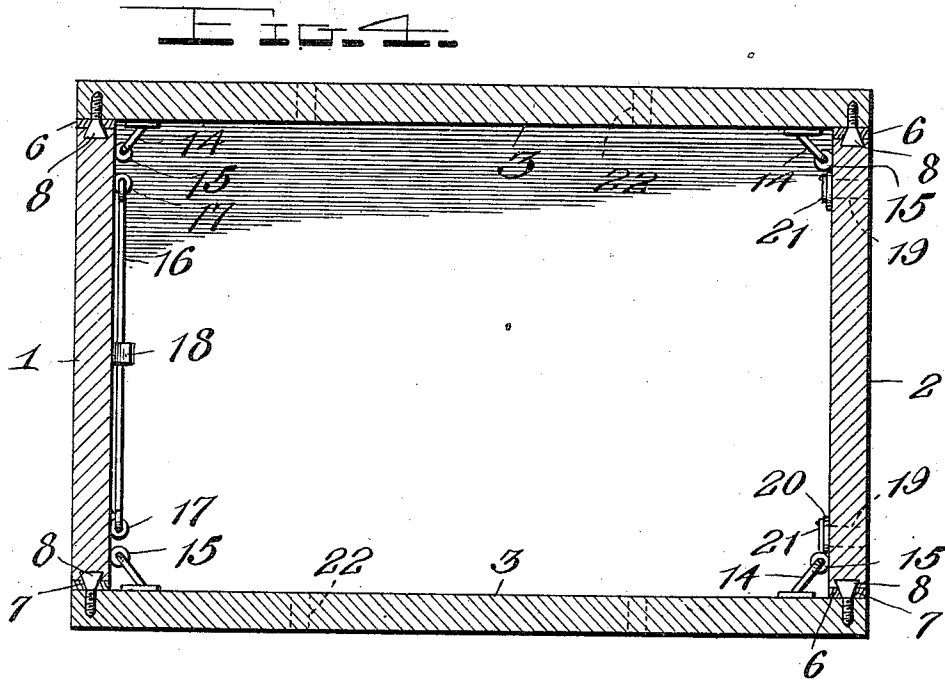
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3 SHEETS—SHEET 3.



Witnesses
 Chas. L. Griestauer.
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UNITED STATES PATENT OFFICE.

PAUL C. THAYER, OF OROVILLE, CALIFORNIA.

KNOCKDOWN BOX.

972,038.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed March 31, 1910. Serial No. 552,602.

To all whom it may concern:

Be it known that I, PAUL C. THAYER, a citizen of the United States, residing at Oroville, in the county of Butte and State of California, 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.

This invention relates to improvements in knock down boxes.

One object of the invention is to provide a box of this character having an improved construction and arrangement of fastening devices whereby the sides, ends, top and bottom of the box are securely fastened together in operative position and means whereby the parts of the box are fastened when knocked down and stacked together for shipment.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a vertical section of a box constructed in accordance with my invention, showing the parts arranged and secured in position for use; Fig. 2 is a similar view taken at right angles to and on the line 2—2 of Fig. 1; Fig. 3 is a vertical sectional view through one end, and the ends of the sides and top of the box, on the line 3—3 of Fig. 2; Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 1; Fig. 5 is a perspective view of the inner side of one end of the box; Fig. 6 is a similar view of the opposite end; Fig. 7 is a perspective view of one side of the box; Fig. 8 is a vertical sectional view of the box with the parts stacked together and fastened in position for shipment.

My improved box comprises end pieces 1 and 2, side pieces 3 and bottom piece 4, and a top piece 5. The end pieces 1 and 2 are bound around their outer edges with a metal strip or plate 6 in which on each of the four edges of the ends are formed key-hole slots 7, which register with suitable recesses formed in said edges, as clearly shown in Figs. 3, 5 and 6 of the drawings. On the inner sides of the top, bottom and side pieces of the box are secured inwardly projecting fastening lugs 8, said lugs being of dove-tail

shape and having suitable fastening devices which are here shown in the form of threaded shanks screwed into the inner sides of the top, bottom, and side pieces of the top, as shown.

In assembling the parts to form the box, the lugs 8 are engaged with the key-hole slots in the metal plates or strips 6 of the end pieces, and with their registering recesses formed in the edges of said end pieces, after which said top, bottom, and side pieces are shifted to force the dove-tail shaped lugs into engagement with the reduced portion of the key-hole slots thereby securely locking said parts of the box to the end pieces. In thus assembling the parts of the box, one of the side pieces 3 is first engaged with and fastened to the edges of the opposite end pieces, after which the bottom 4 is engaged with the lower edges of the side and ends, said bottom piece being of such width that when forced into position, one edge of the same will engage beneath the lower edge of the side 3. When thus engaged, the opposite edge of the bottom will lie flush with the opposite edges of the end pieces. The opposite side piece 3 is now engaged with said opposite edges of the end pieces and said side pushed down into place so that the lower edge thereof will project over the adjacent end of the bottom piece thereby securely holding said bottom piece against disengagement from the end pieces. After the ends, sides and bottom of the box have thus been engaged, the top piece 5 is engaged with the upper edges of said pieces and the fastening lugs on said top piece engaged with the locking slots in the upper edges of the end pieces. The top piece 5 is of sufficient width to project over the upper edges of the side pieces thereby holding the latter against upward movement or disengagement from the end pieces.

In order to hold the top piece in place, said top piece is provided adjacent to its opposite ends and near one side with vertically disposed passages 9, with which, when the top piece is in proper position, are engaged locking bolts 10, said bolts being slidably mounted in suitable guide brackets 11 on the inner sides of the opposite end pieces of the box, as clearly shown in Figs. 1 and 2 of the drawings. On the bolts 10, are formed stop flanges 12, between which and the lower guide bracket are arranged coiled springs 13, the pressure of which is exerted to force the

bolts upwardly so that when the top piece is forced into proper position and the passages 9 thus brought into alinement with the bolts, the latter will be forced upwardly by the 5 springs 13 and into engagement with the passages 9, thereby securely locking the top of the box in position. When it is desired to remove the top, a suitable instrument is forced into the passages 9, thus depressing 10 the bolts 10 and permitting the top to be slipped back and removed.

In order to more firmly brace and hold the parts of the box together, I preferably provide the side pieces 3 with fastening hooks 15 14 which are arranged at an angle and are adapted to be pushed down with the sides into engagement with eyes 15 secured to the inner sides of the end pieces 1 and 2, as clearly shown in Figs. 1 and 4 of the drawings. 20

When in knocked down position, the top, bottom and sides of the box are stacked together between the ends and when thus stacked in position, the parts are securely 25 fastened together by suitable fastening devices which are here shown and preferably consist of long hooks 16, the inner ends of which are loosely connected to eyes 17 secured to the inner side of the end piece 1, 30 whereby said hooks may be swung into and out of inoperative position. When in an inoperative position, the hooks are folded back against the side of the end piece 1 and are held in this position by suitable spring clips 35 18 secured to the side of the end as shown. In the opposite end piece 2 in line with the connection of the hooks 16 with the end piece 1 are formed passages 19, over which on the inner sides of the end piece 2 are secured 40 apertured plates 20, on which are arranged spring catches 21, with which are adapted to be engaged the beveled ends of the hooks when the latter are inserted through the apertures in the plates 20 and 45 into the passages 19 of the end piece 2. In the side, top, and bottom pieces of the box are formed alined passages 22, through which the hooks 16 are inserted when the parts of the box are in stacked position,

after which the ends of the hooks are engaged with the apertured plates and spring catches on the end piece 2 which is engaged with the sides, top, and bottom of the box, as clearly shown in Fig. 8 of the drawings, thereby securely holding the parts of the 55 box in stacked position.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without 60 requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claim. 65

Having thus described my invention, what I claim is:

A knock down box comprising end pieces, 70 top, bottom and side pieces, said top, bottom and side pieces having formed therein passages, means to securely hold the parts of the box together in operative position, fastening hooks loosely connected to the inner side of 75 one of the ends of the box and adapted to be inserted through the passages in the top, bottom and sides of the box, when the latter are stacked together in knock down position, apertured fastening plates secured to the opposite end pieces of the box, spring catches 80 secured to said fastening plates and adapted to receive the ends of the hooks after being passed through the apertures in the top, bottom, and sides of the box, whereby said 85 parts are held together in knock down stacked position, and clips adapted to hold said hooks in inoperative position against the inner side of the end pieces of the box, when the parts of the latter are in set up 90 or operative position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PAUL C. THAYER.

Witnesses:

W. H. WARE,
JOHN M. CATER.