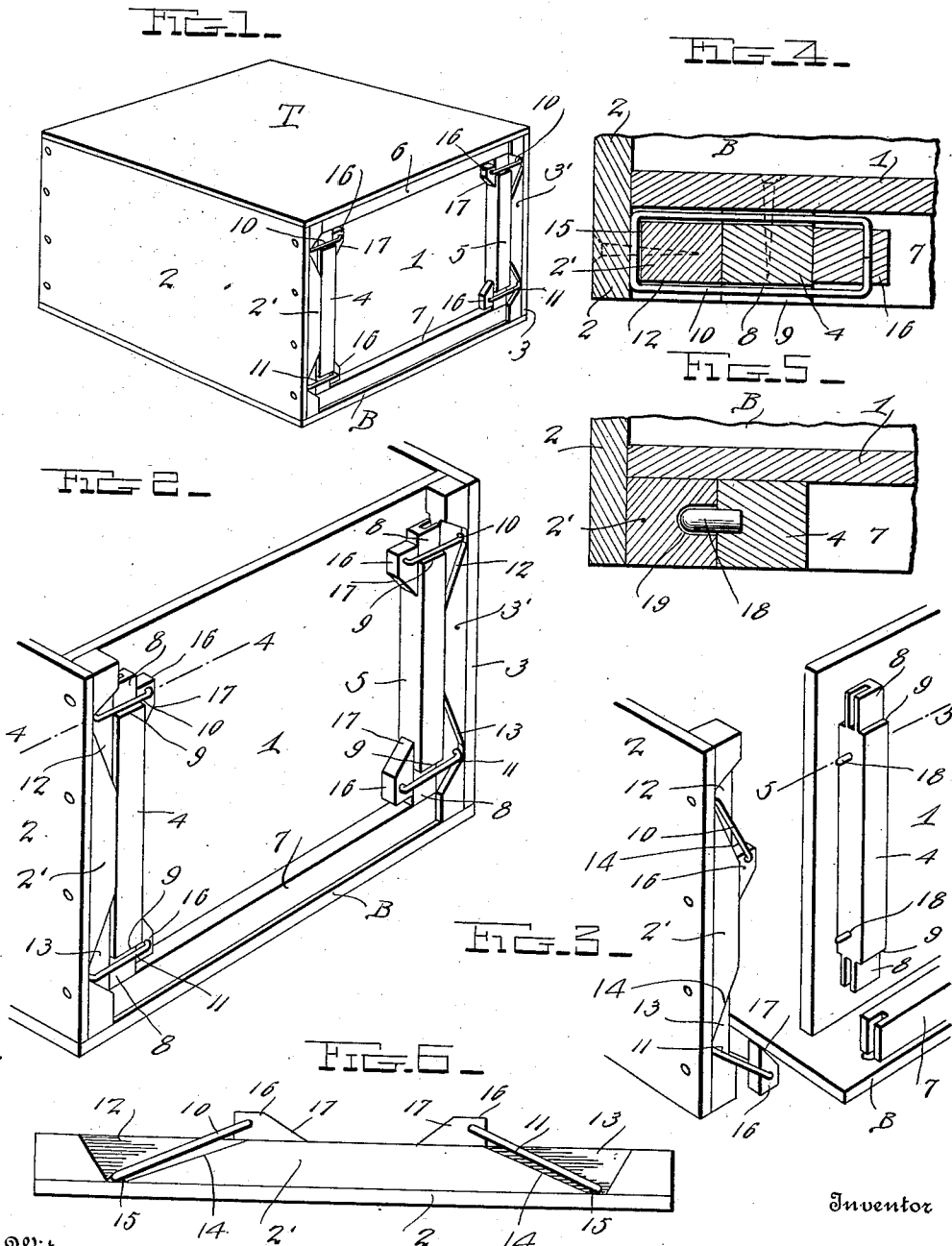


E. F. JONES.
KNOCKDOWN BOX.
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1,073,137.

Patented Sept. 16, 1913.



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UNITED STATES PATENT OFFICE.

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KNOCKDOWN BOX.

1,073,137.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EUGENE F. JONES, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, 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 knockdown boxes.

The object of the invention is to provide a simply constructed box of this character the sides and end walls of which may be quickly set up or knocked down without the use of tools or independent fastening elements such as screws or nails and to which the top and bottom members may be detachably and quickly connected.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 represents a perspective view of a box constructed in accordance with this invention; Fig. 2 is an enlarged perspective view of one end of the box with the top removed; Fig. 3 is a similar view with the end, side and bottom members separated and arranged ready for assembling; Fig. 4 is a detail horizontal section taken on the line 4—4 of Fig. 2; Fig. 5 is a similar view taken in a plane below Fig. 4 on a plane with the line 5—5 shown in Fig. 3; Fig. 6 is an end elevation of one of the side members with the member laid flat.

In the embodiment illustrated end members as 1 are separably connected with the side members 2 and 3 and a suitable top T and bottom B are provided and detachably secured thereto by any suitable means. The end members 1 each have cleats 4 and 5 arranged transversely of their outer faces at points spaced from the ends thereof and permanently fixed thereto by any suitable means. These cleats are spaced from the ends of the members 1 a distance equal to the width of cleats 2' and 3' secured to the side members as will be hereinafter described, and said cleats 4 and 5 are shorter than the width of the end members, being

spaced from the top and bottom edges of said members a distance equal to the width of cleats 6 and 7 secured to the top and bottom members of the box. These cleats 6 and 7 are shorter than the width of the top and bottom T and B terminating at their ends from the edges of said members a distance equal to the width of the cleats 2' and 3' which are secured to the inner faces of the side members 2 and 3, being arranged flush with the end edges of said members and extending the full width thereof as shown clearly in Figs. 1, 2 and 3. The cleats 4 and 5 secured to the end members 1 have their outer faces recessed at opposite ends as shown at 8 to provide shoulders 9 which form stops for securing loops 10 and 11 pivotally mounted on the cleats 2' and 3'.

The cleats 2' and 3' which are fixed to the inner faces of the side members 2 and 3 at their opposite ends are provided on their outer faces with recesses 12 and 13 which are substantially V-shaped with their mouths or wide portions of the recesses opening inwardly, the inner side walls 14 of said recesses being of greater inclination than the outer side walls thereof to provide for the swinging movement of the loops 10 and 11 and to permit said loops to be folded flat against the cleats in the position shown in Fig. 6 when the box is knocked down ready for shipment. These loops 10 and 11 are preferably constructed of heavy wire and are rectangular in shape as shown in Fig. 4 with one end thereof pivotally mounted in a groove or recess 15 extending transversely of the rear faces of the cleats 2' and 3' at the base of the V-shaped recesses therein and in which said loops swing freely.

Pivotally mounted on the cross bar of the free end of each loop is a locking block 16 one face of which is adapted to be swung into engagement with the inner faces of the cleats 4 and 5 when the parts are assembled to securely bind the side and end members together. These blocks 16 are preferably provided with an inclined face 17 to facilitate the disengaging of said blocks from the cleats 4 and 5. The loops 10 and 11 are of a length sufficient to span the adjacent cleats on the end and side members and to permit the block 16 carried thereby to fold down flat against the inner faces of the cleats 4 and 5 as shown in Figs. 1 and 2, thereby securely binding the parts in operative posi-

tion. The shoulders 9 at the opposite ends of the cleats on the end members limit the inward movement of said loops as shown in Figs. 1 and 2.

- 5 The top and bottom of the box are detachably engaged with the end members thereof by any suitable detachable locking means not here shown as it forms no part of this invention.
- 10 The adjacent cleats on the ends of the side and end members of the box are provided with cooperating locking elements for holding them against lateral movement and which are here shown in the form of studs
- 15 18 arranged on the outer faces of the cleats 4 and 5 and spaced longitudinally, being arranged in position to fit sockets 19 formed on the inner faces of the cleats 2' and 3' and shown in Fig. 5.
- 20 In the use of this box when the parts are to be assembled the pins or studs of the cleats 4 and 5 are first engaged with the sockets in the cleats 2' and 3' whereby the parts are held in upright position against
- 25 transverse movement and the loops 10 and 11 are then swung inward until they abut against the shoulders 9 on the cleats 4 and 5. The blocks 16 are then turned to bring their flat longer faces into engagement with the inner faces of the cleats 4 and 5 where-
- 30 by said end and side members are securely locked in connected position and accidental separation thereof prevented. The top and bottom may then be placed in position and
- 35 secured in any desired manner.
- When it is desired to knock down the box for shipping or other purpose the top and bottom members are removed and the blocks 16 are swung outwardly by exerting pres-
- 40 sure on their inclined faces 17 whereby the loops are disengaged from the cleats 4 and 5. The side members may then be moved outwardly by forcing them away from the studs or pins 18 on the cleats of the end
- 45 members and the parts are thereby separated and may be stored or packed compactly for shipping.

While I have described my invention with more or less minuteness as regards details

50 and as being embodied in certain precise

forms, I do not desire to be limited thereto unduly any more than is pointed out in the claims. On the contrary, I contemplate all proper changes in form construction and arrangement, the omission of immaterial 55 elements and substitution of equivalents as circumstances may suggest or render expedient.

1. A knockdown receptacle comprising end and side members having cleats se- 60 cured on their inner and outer faces respectively, the cleats of one member being engaged with those of the other when the parts are assembled, and loops carried by the cleats of one member and adapted to 65 swing over the cleats of the other member, and means for locking said loops in operative position.

2. A knockdown box comprising separable end and side members, one of which 70 has cleats arranged on its inner face at its opposite ends and the other having cleats arranged on its outer face at points spaced from its opposite ends a distance equal to the width of the cleats on the other mem- 75 ber, and loops pivotally mounted on the cleats of one member and adapted to swing over the cleats of the other member and having locking blocks pivotally mounted on the free ends. 80

3. A knockdown box comprising separable end and side members, one of which has cleats arranged on its inner face at its opposite ends, and the other having cleats arranged on its outer face at points spaced 85 from its opposite ends a distance equal to the width of the cleats on the other member, and locking loops pivotally mounted on the cleats of the other member and having pivotally mounted locking blocks at their 90 free ends, the cleats of both members having alined stops for limiting the inward movement of said loops.

In testimony whereof I have hereunto set my hand in presence of two subscribing 95 witnesses.

EUGENE F. JONES.

Witnesses:

NELLIE E. MARRIN,
J. R. JONES.