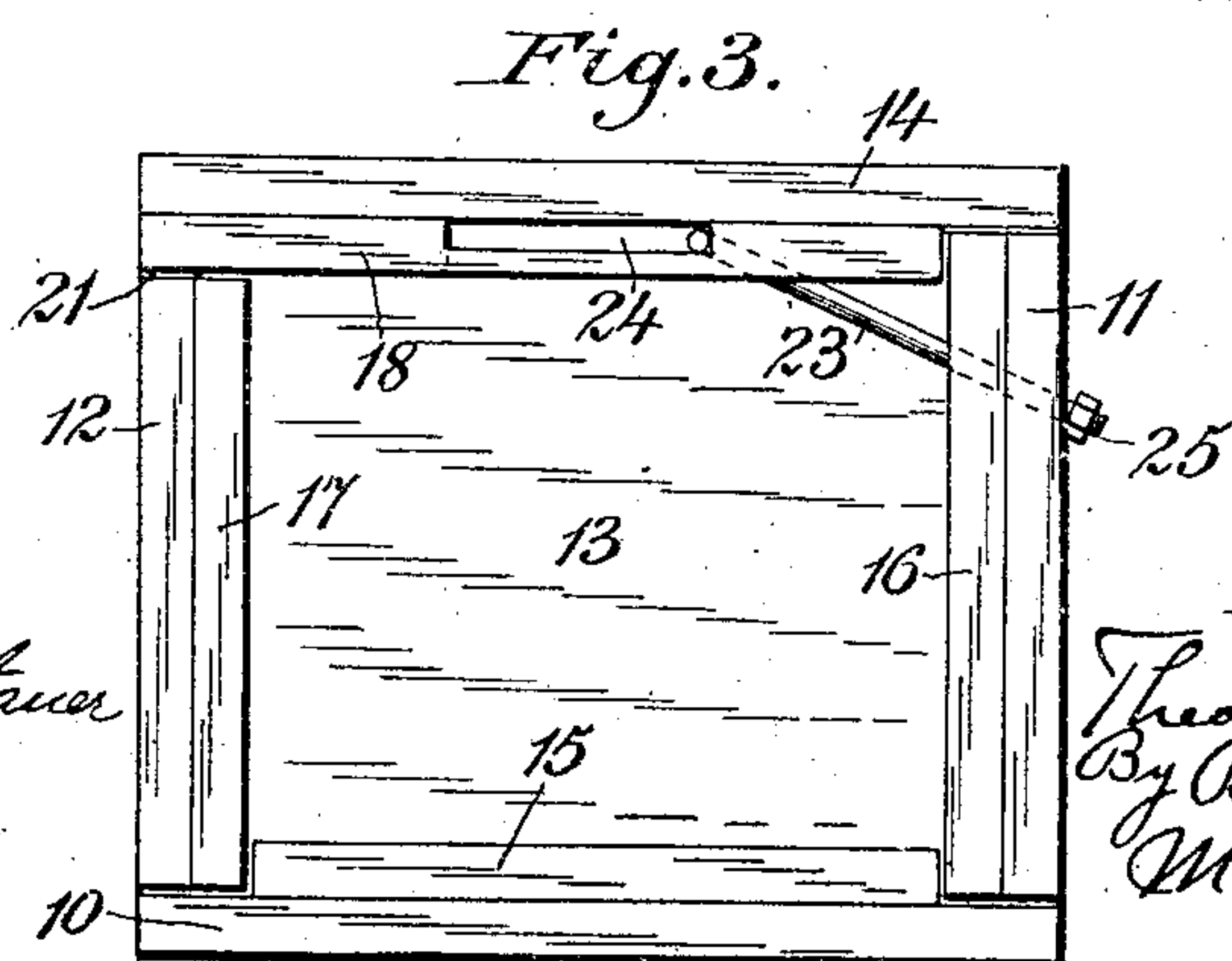
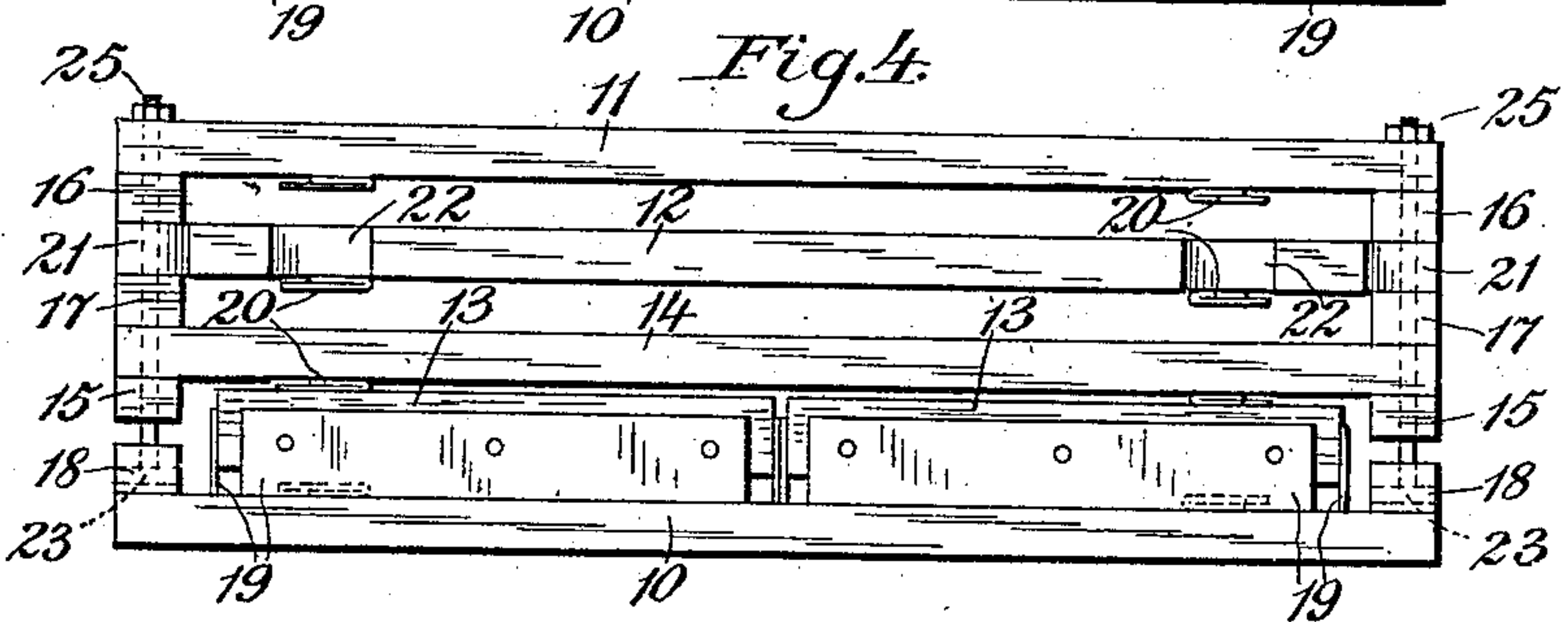
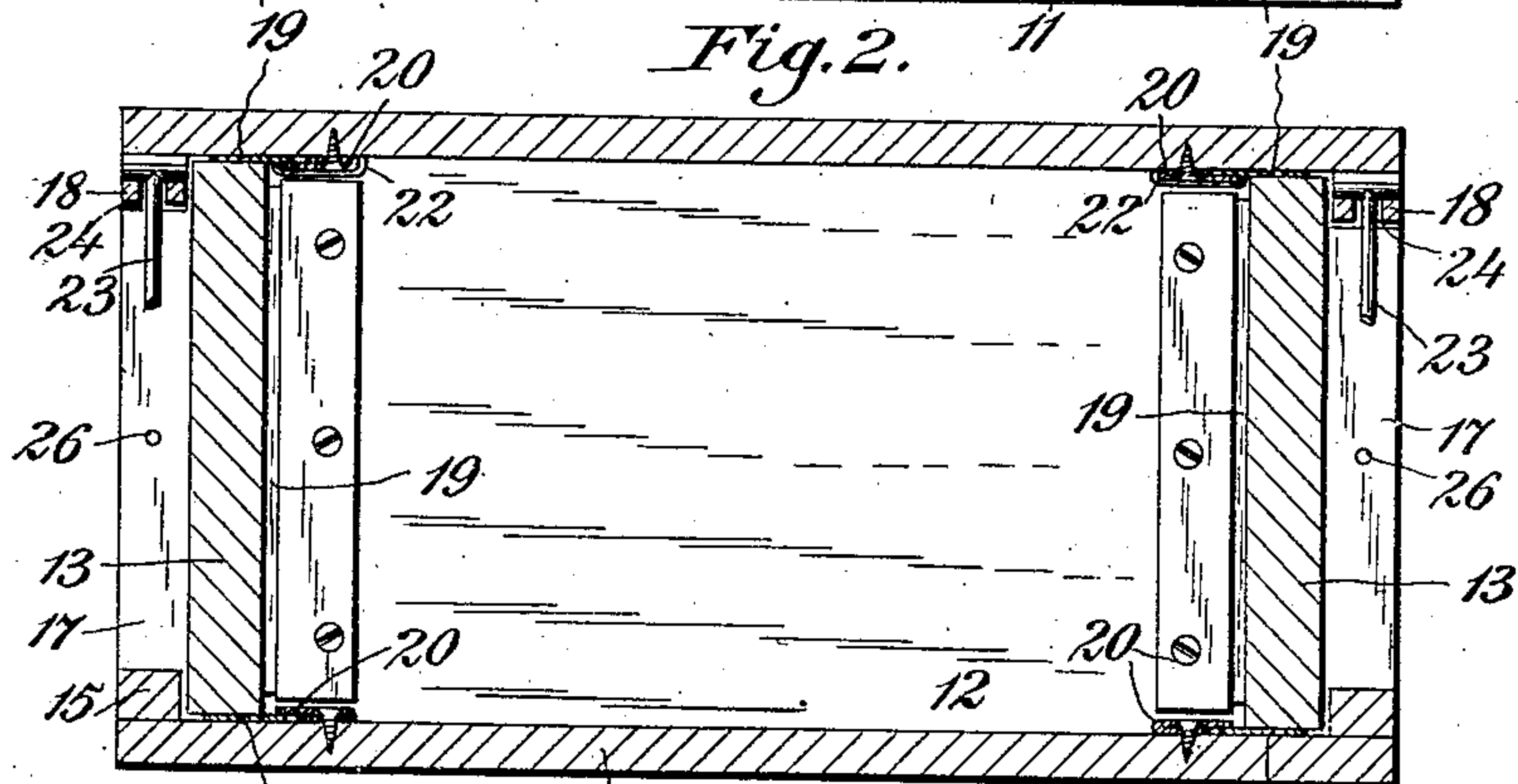
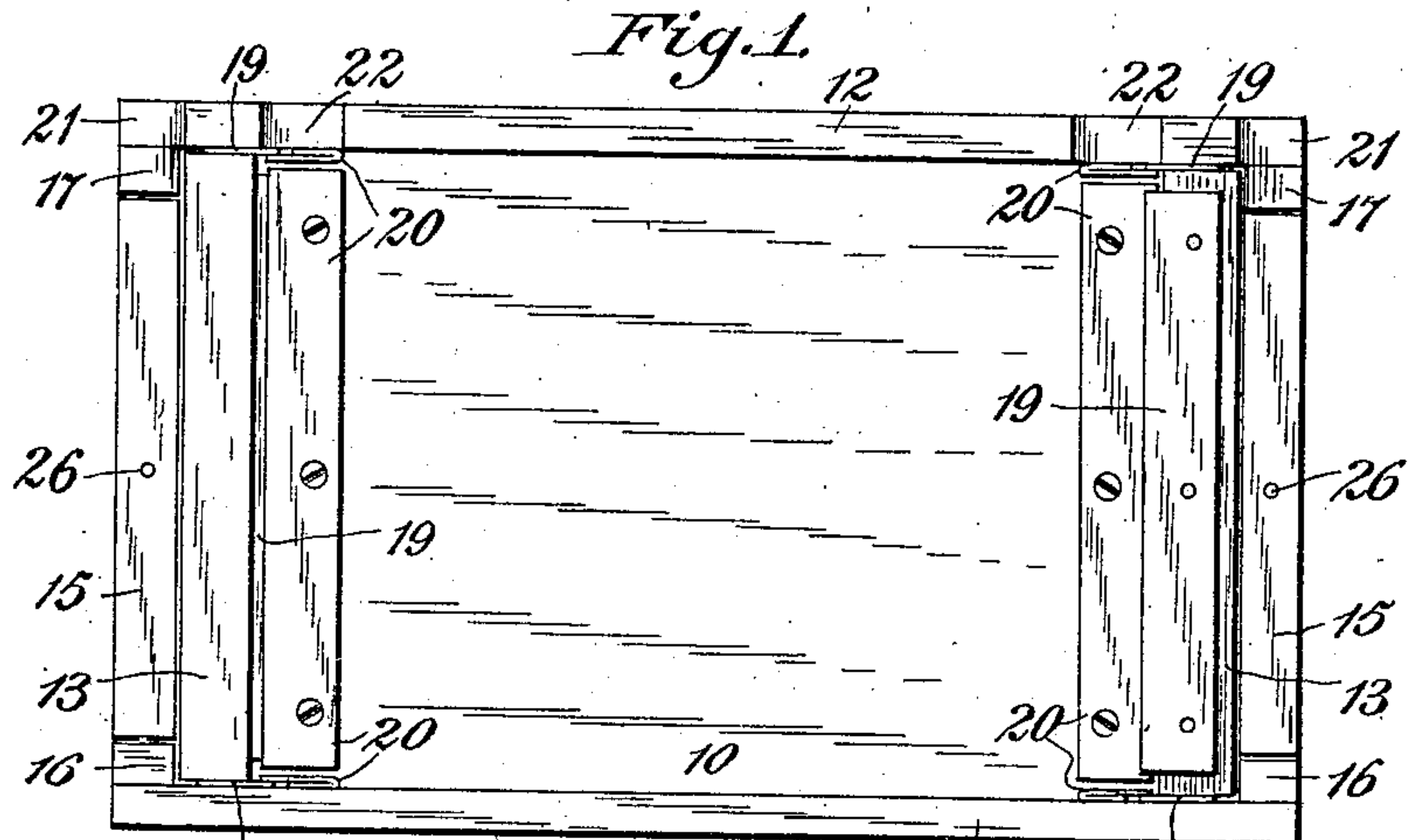


T. A. BRENNER.
 KNOCKDOWN BOX.
 APPLICATION FILED OCT. 9, 1908.

940,122.

Patented Nov. 16, 1909.



Witnesses:

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UNITED STATES PATENT OFFICE.

THEODORE A. BRENNER, OF REEDSVILLE, WISCONSIN.

KNOCKDOWN BOX.

940,122.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed October 9, 1908. Serial No. 456,999.

To all whom it may concern:

Be it known that I, THEODORE A. BRENNER, residing in Reedsville, in the county of Manitowoc and State of Wisconsin, have invented new and useful Improvements in Knockdown Boxes, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention has for its object to provide a box for shipping or other purposes which will be capable of being easily taken apart and arranged in a compact form for return shipment whereby it will be less bulky and its transportation will be less expensive.

With the above and other objects in view the invention consists in the knock down box herein claimed, its parts and combinations of parts and all equivalents.

Referring to the accompanying drawings in which like characters of reference indicate the same parts in the different views; Figure 1 is a plan view of a knock down box constructed in accordance with this invention, the cover being removed and one of the end pieces having its top locking strip removed to show the parts below; Fig. 2 is a central vertical sectional view of the box with the cover in place; Fig. 3 is an end elevation thereof; and, Fig. 4 is an elevation showing the box in its knocked down condition ready for return shipment.

In these drawings 10 indicates the bottom piece, 11 and 12 the two side pieces, 13 the two end pieces and 14 the top piece or cover, all of the relative size and shape to constitute a rectangular box when assembled. The top and bottom and side pieces are provided with cleats extending across their inner faces at their ends, as clearly shown in Fig. 3, the cleats 15 for the bottom piece terminating at a distance from the edges thereof equal to the combined thickness of a side piece and its cleat, the cleats 16 of the side piece 11 extending from one edge to the other thereof, the cleats 17 for the side piece 12 extending from its bottom edge to a distance from its upper edge equal to the thickness of a cleat of the top piece, and the cleats 18 of the top piece extending from the front edge thereof to a distance from the rear edge equal to the combined thickness of the side piece 11 and its cleat. The end pieces 13 have locking strips 19, preferably of sheet metal, secured to their four edges

and projecting inwardly beyond their inner faces so as to form slip joints with guide strips 20 which are secured to the inner faces of the top and bottom and side pieces. The edges of the end pieces 13 just fit between the cleats of these respective parts and their guide strips 20 which are preferably of sheet metal and are spaced at their engaging edges from the surface to which they are secured so as to take the projecting edges of the locking strips 19 of the end pieces as clearly shown in Fig. 2.

The parts may be assembled in various ways, but it is preferred to first slip the end pieces 13 into their places on the bottom piece 10, then slide the side pieces down upon the edges of the end pieces and into their position where their cleats 16 and 17 fit upon the ends of the cleats 15 of the bottom piece, and finally slide the top piece 14 upon the upper edges of the end pieces 13 from the front toward the back, the front side piece 12 having its upper corners cut away at 21 to register with the ends of the cleats 17 and permit the cleats 18 of the top piece to pass thereby, said cleats 18 fitting against the cleats 16 of the rear side piece when the cover is in place. There are also cut-away portions 22 in the upper edge of the front side piece 12 to permit the guide strips 20 of the top piece to pass, as shown in Fig. 2.

The parts as shown in the drawing are exaggerated in their relative thickness and in their spacing from each other in order to more clearly illustrate the construction and operation.

When the box is assembled it may be locked and the parts held firmly together by means of bolts 23 which have T-shaped heads slidably fitting in correspondingly shaped slots 24 in the cleats 18 of the top piece, said bolts passing through openings in the cleats 16 and the ends of side pieces 11 where suitable clamping nuts 25 are threaded on their ends to draw the cover piece 14 tightly against the stop formed by the engagement of its cleats 18 with the cleats 16 of the side piece 11, and with the cover thus held in place all of the parts of the box are effectively locked together.

For return shipment the box may be taken apart by removing the cover 14 and sliding the side pieces 11 and 12 off from the end pieces and sliding the end pieces off from the bottom piece. The end pieces may then be placed side by side upon the cover 14 as

shown in Fig. 4 and the bottom 10 placed thereon with its cleats 15 and the cleats 18 of the top piece turned toward each other, and then the side pieces 11 and 12 may be placed
 5 together on top of the bottom piece and the bolts 23 may be passed through openings 26 which are provided at the middle of the ends of bottom and side pieces and their cleats, thus locking the parts together. It is un-
 10 necessary to pass the bolts through the end pieces 13, as they are confined in place between the top and bottom pieces by the pressure thereon and also by their locking strips 19 engaging the ends of the guide strips 20
 15 of the top piece to prevent their moving out from between the top and bottom pieces.

It is obvious that the cleats, guide strips and locking strips may be rearranged as desired without departing from the spirit and
 20 scope of this invention.

What I claim as my invention is:

1. A knock down box, comprising top and bottom and side and end pieces, cleats on the ends of the top and bottom and side pieces
 25 to fit outside of the end pieces, metal guide strips on the inner faces of the top and bottom and side pieces spaced from the cleats and parallel therewith and having one edge spaced from the pieces to which they are
 30 connected, said guide strips being adapted to fit inside of the end pieces approximately the full length thereof, and metal locking strips on the top and bottom and side edges of the end pieces with their edges projecting
 35 beyond the inner face of the end pieces and adapted to slidably fit within the slots formed by the spaced edges of the guide strips and the pieces to which they are secured when said end pieces are fitted be-
 40 tween the guide strips and the cleats.

2. A knock down box, comprising top and bottom and side and end pieces, cleats on the ends of the top and bottom and side pieces to fit outside of the end pieces, the cleats of
 45 the bottom piece bearing against the cleats of the side pieces, and the cleat of one side piece bearing on the bottom piece and the cleat of the top piece, and the cleats of the other side piece bearing on the bottom piece
 50 and the top piece, and the cleats of the top

piece bearing on the cleats of the last mentioned side piece and extending through openings therefor in the other side piece to the end of the top piece, guide strips on the top and bottom and side pieces spaced from
 55 the cleats and parallel therewith with one edge raised from the surface of the pieces to which they are connected, locking strips on the top and bottom and side edges of the end pieces with their edges projecting laterally
 60 from the face of the end pieces and fitting within the spaced edges of the guide strips when the edges of the end pieces are fitted between said guide strips and the cleats, and means for engaging the top piece with a side
 65 piece to lock all of the parts together.

3. A knock down box, comprising top and bottom and side and end pieces, cleats on the top and bottom and side pieces, guide strips on the top and bottom and side pieces spaced
 70 from the cleats and parallel thereto with one edge raised from the face of the piece to which it is attached, locking strips on the top and bottom and side edges of the end pieces projecting therefrom to fit within the
 75 raised edges of the guide strips when the edges of the end pieces are fitted between said guide strips and the cleats, the cleats of the bottom piece being confined between the side pieces and the side pieces being con-
 80 fined between the top and bottom pieces, and T-shaped bolts fitting in correspondingly shaped openings in the cleats of the top piece and passing through openings in the cleats
 85 of one of the side pieces with its nuts engaging said side piece to clamp the parts together, the other side piece being provided with cut away parts to permit the cleats and guide strips of the top piece to pass, there
 90 being openings in the ends of the bottom and side pieces to receive the bolts when the parts are disconnected and laid one upon the other with the end pieces contained between them.

In testimony whereof, I affix my signature, in presence of two witnesses.

THEODORE A. BRENNER.

Witnesses:

PETER REINEMANN,
 CHAS. HELN.