

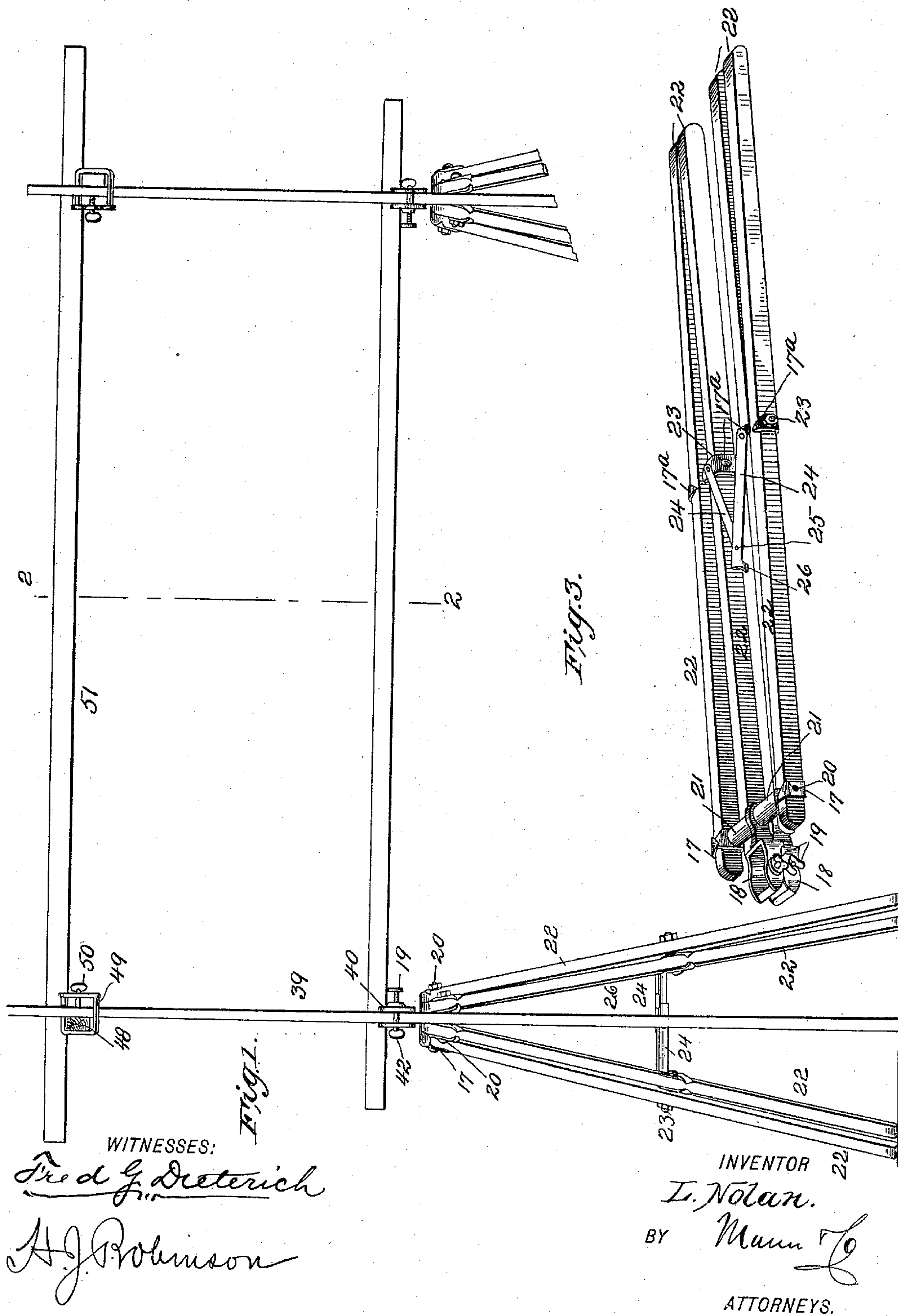
(No Model.)

2 Sheets—Sheet 1.

L. NOLAN.  
PORTABLE STRUCTURE.

No. 541,776.

Patented June 25, 1895.



(No Model.)

2 Sheets—Sheet 2.

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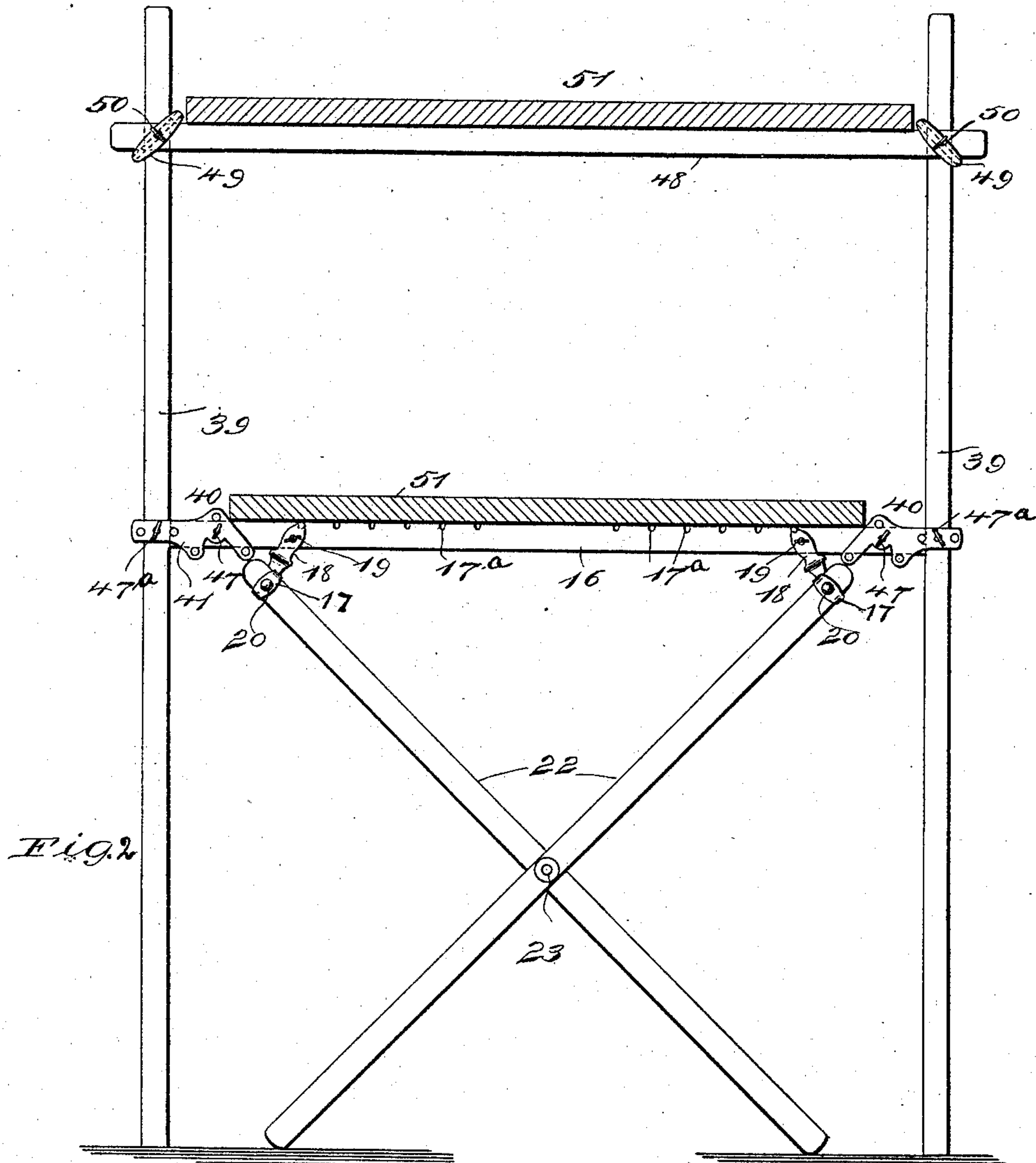
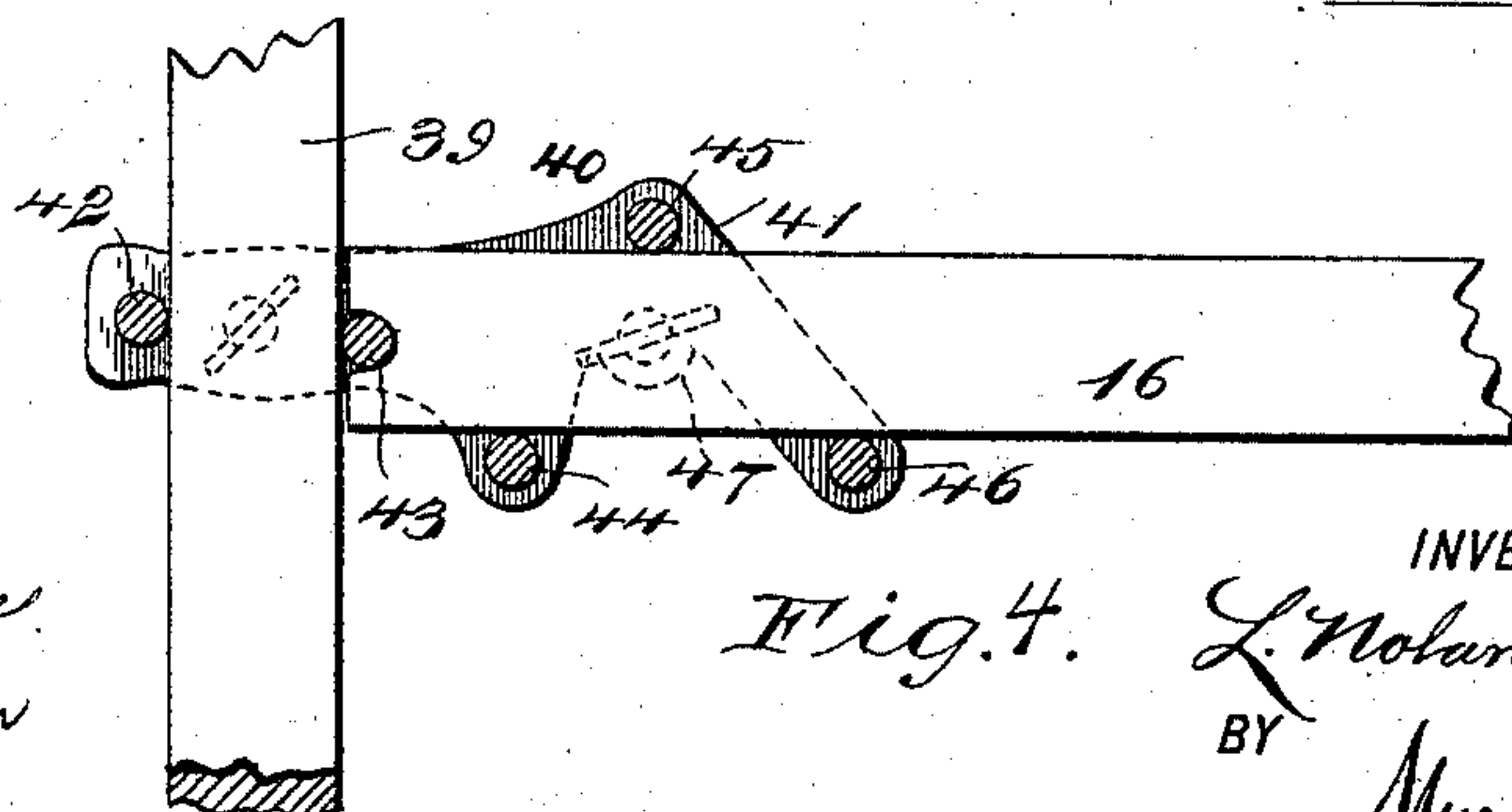


Fig. 2



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# UNITED STATES PATENT OFFICE.

LAURENCE NOLAN, OF NEW YORK, N. Y.

## PORTABLE STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 541,776, dated June 25, 1895.

Application filed May 8, 1894. Serial No. 510,446. (No model.)

*To all whom it may concern:*

Be it known that I, LAURENCE NOLAN, of New York city, in the county and State of New York, have invented a new and Improved Portable Structure, of which the following is a full, clear, and exact description.

My invention is a portable or foldable frame, adapted for supporting shelves, or other analogous purposes.

The construction and arrangement of parts are as hereinafter described, reference being had to the accompanying drawings—two sheets—in which—

Figure 1 is a side elevation of the convertible frame or structure, arranged for supporting shelves. Fig. 2 is a cross-section of Fig. 1, on line 2 2. Fig. 3 (Sheet 1) is a perspective view of the folding legs forming part of the convertible frame. Fig. 4 (Sheet 2) is a detail view, partly in section, showing a coupling for two adjacent bars, one of which is perpendicular to the other.

The legs, 22, of the foldable support are arranged in pairs, and the upper ends of each pair are connected—that is to say, they are pivoted together by a cross bolt, 20, which passes through metal clasps, 17, that embrace the said ends of the legs. Clips, 18, are pivoted on the bolts, 20, at the middle of the latter, and are held in place midway between the legs by means of sleeves, or collars, 21, applied to the bolts. The said clips have a large opening in their upper, or free, ends, and are provided with clamp-screws, 19, to adapt them for attachment to a horizontal bar, 16, (Fig. 2,) which forms one of the supports for a shelf, 51. Each leg, 22, of each pair crosses one of the legs of the opposite pair, when extended as shown in Figs. 1 and 2, and such crossed legs are pivotally connected by a bolt, 23, that passes through a clasp, 17<sup>a</sup>, (Fig. 3.) The pairs of legs are connected by foldable arms, 24, which are pivoted together and to one of the legs of each pair, as shown best in Fig. 3. One of the said arms is provided with a lateral lug, 26, which, when the legs are extended, abuts the opposite arm and holds them horizontal.

Two sets of pairs of legs, 22, are required to support one or more shelves, 51, and the upper ends of each pair are connected with the bar, 16, on which a shelf rests, by means

of the before-described clips, 18. The said bars are passed through the clips, which are clamped in place by screws, 19; but the said clips engage, or lock, detachably with the bar, 16, by reason of the upper end of the clip entering the notches in the bar, as shown. The bar is made sufficiently smaller in cross section than the opening in the clips, to permit the latter to be readily adjusted along it and thus engaged or locked at different points.

In connection with the sets of legs, I employ vertical bars, or standards, 39, which are attached to the ends of the shelf-supporting bar, 16, by means of couplings, 40. (See Fig. 4.) Each such coupling comprises two similar, flat side pieces, or plates, 41, and these are connected by cross bolts 42, 43, 44, 45, and 46. The space between the bolts 42 and 43 receives a standard, 39. The bolt, 45, is spaced, vertically, from the bolts 44 and 46, to receive the bar, 16, between them, and the latter is provided with a notch in its end to receive the bolt, 43, as shown. A clamp-screw 47, secures the bar, 16, removably to the couplings, 40, and a similar screw, 47<sup>a</sup>, secures the couplings adjustably to the standards, 39.

In order to provide for adjustment of the sets of legs, 22, to support the bar, 16, higher or lower, the latter is provided with a series of notches, 17<sup>a</sup>, in its upper side; and, by loosening the clamp-screws, 19, the clips, 18, may be moved from one notch to another, as will be readily understood.

One or more shelves, 51, may be arranged and supported above the one resting on the bars, 16, and, in such case, as a support for the supplemental shelves, I employ parallel horizontal bars, 48, and secure their ends adjustably to the standards, 39, by means of stirrup-like, metal loops, 49, having clamp-screws, 50. The said loops are arranged diagonally, and embrace both the bar, 48, and standard, 39, and the screws, 50, bind the parts together.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a foldable, portable structure or frame, pairs of legs, pivoted at their middle, and pivoted jointed arms connecting them at such point, pivot bolts passing through the upper ends of the legs of each pair, and stirrups



pivoted on such bolts, to adapt them for attachment to a bar, substantially as shown and described.

2. In a foldable, portable structure or frame,  
5 two pairs of legs pivoted together at their middle, means for connecting said pairs, pivot bolts connecting the upper ends of the legs of each pair, stirrups, or clips, pivoted on said bolts, and a bar having notches in its upper  
10 side and made of less size than the opening in the stirrups, whereby they are adapted to pass through the latter, whose sides then engage or lock in said notches, all combined as shown and described.

15 3. In a foldable, portable structure or frame, of pairs of legs pivoted together centrally, pivot bolts connecting their upper ends, stirrups, or clips, pivoted on said bolts, horizontal bars having notches in their upper sides  
20 which pass through and detachably engage

with the stirrups, couplings applied to the ends of such horizontal bars, vertical standards held in said couplings, and clips and shelf-supporting cross-bars, adjustably secured to the upper portions of the standards,  
25 all as shown and described.

4. The combination with a horizontal bar and vertical bar, of a metallic coupling consisting of two parallel side plates, a series of  
30 cross pins separated vertically and arranged on the upper and under sides of the horizontal bar, and other cross pins separated in a horizontal plane and arranged on opposite sides of the vertical bars, as shown and described.

LAURENCE NOLAN.

Witnesses:

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