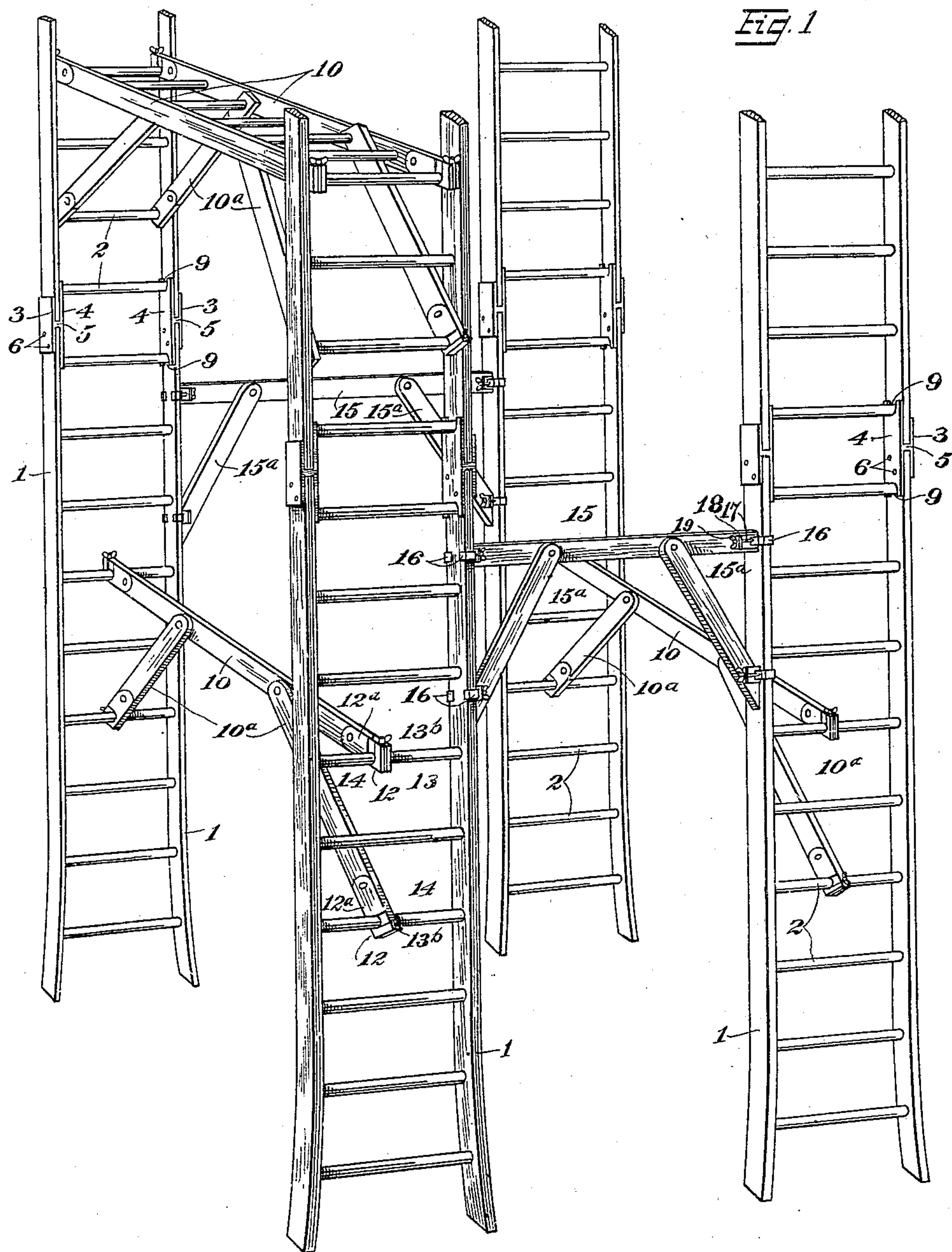


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LADDER SCAFFOLD.  
APPLICATION FILED APR. 3, 1909.

991,565.

Patented May 9, 1911.

2 SHEETS-SHEET 1.



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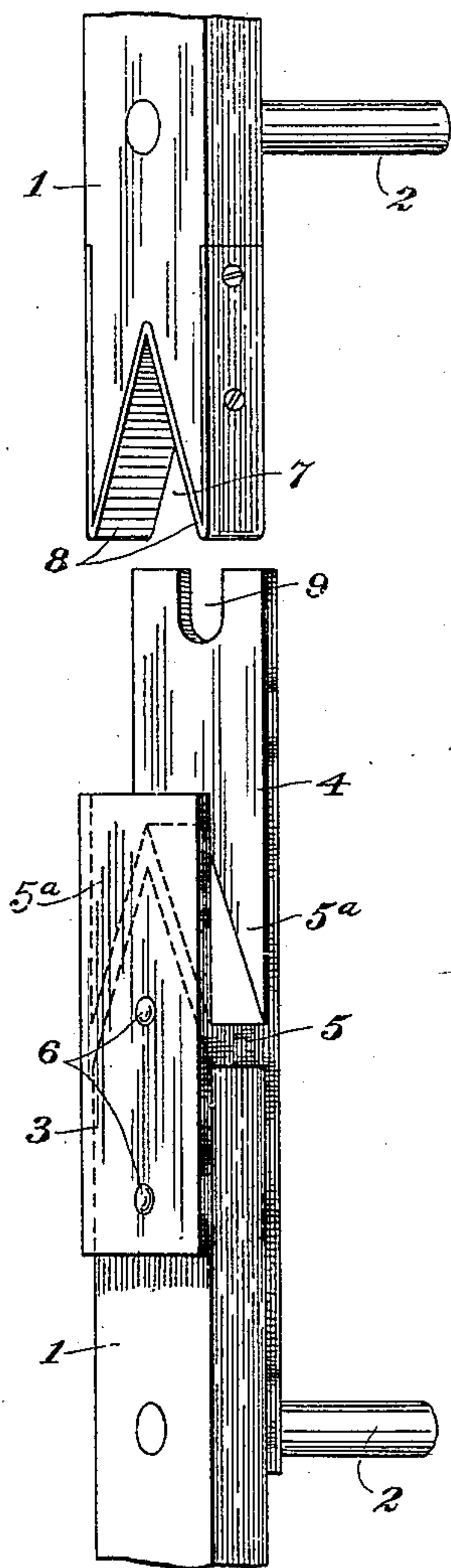


Fig. 2

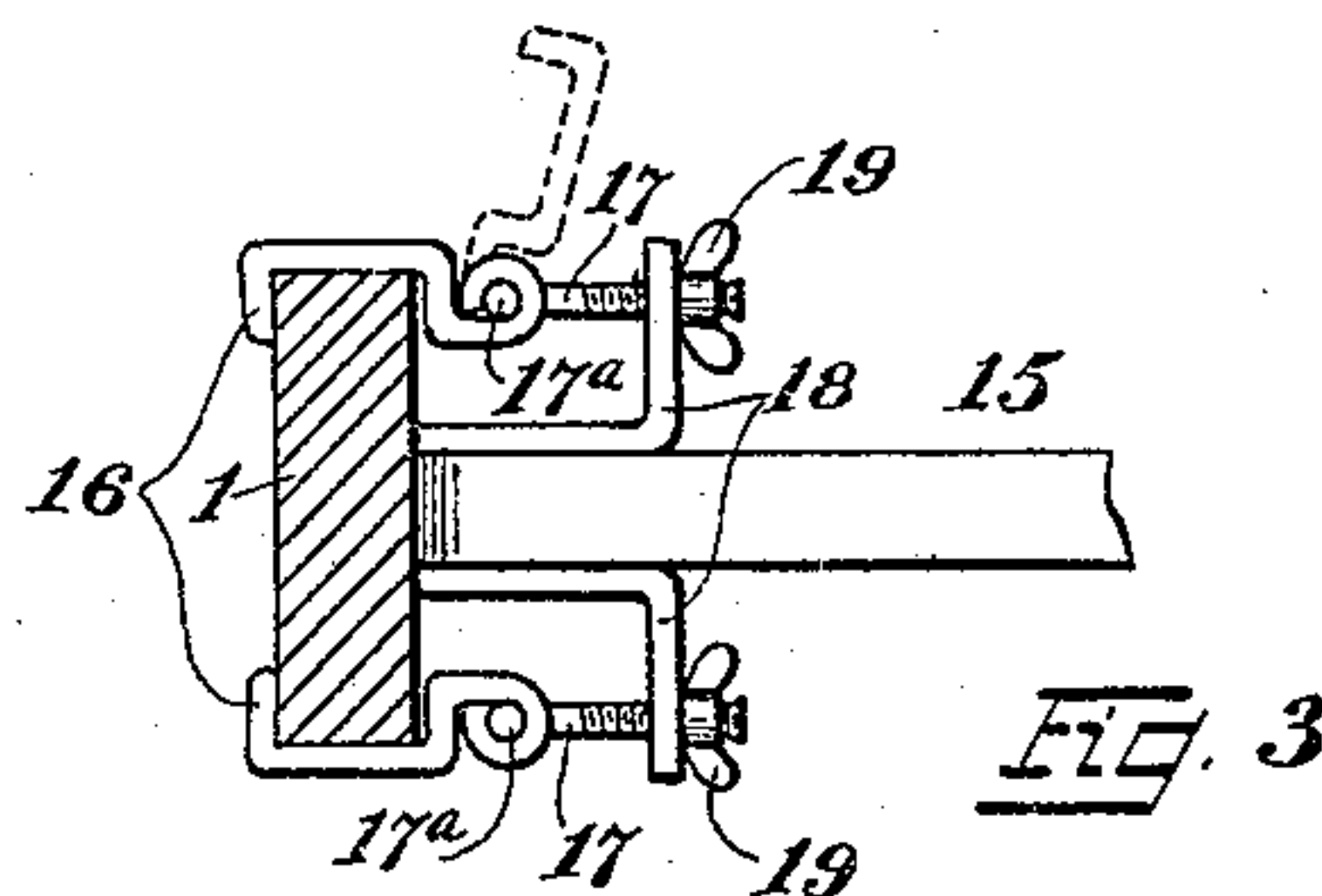


Fig. 3

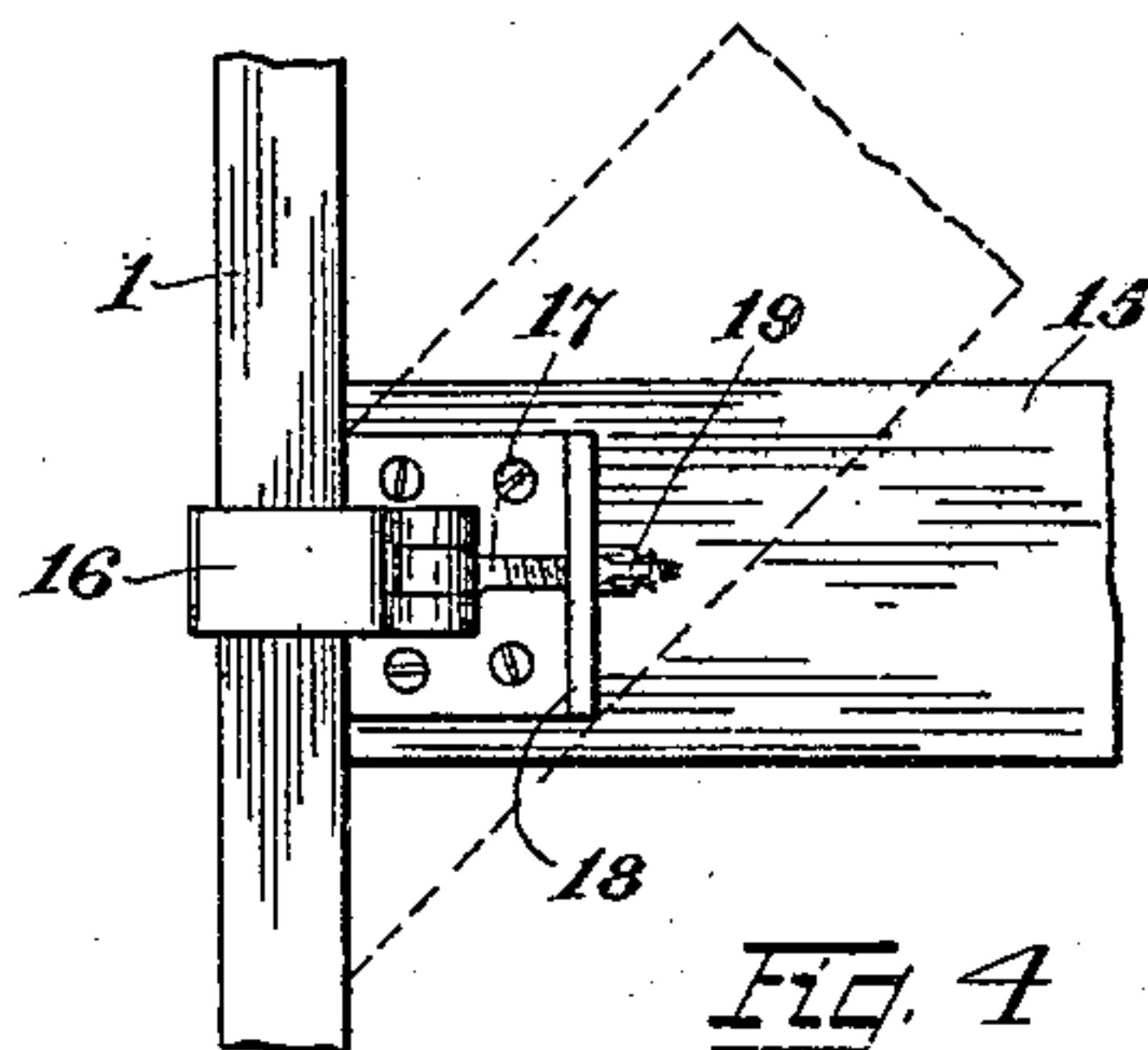


Fig. 4

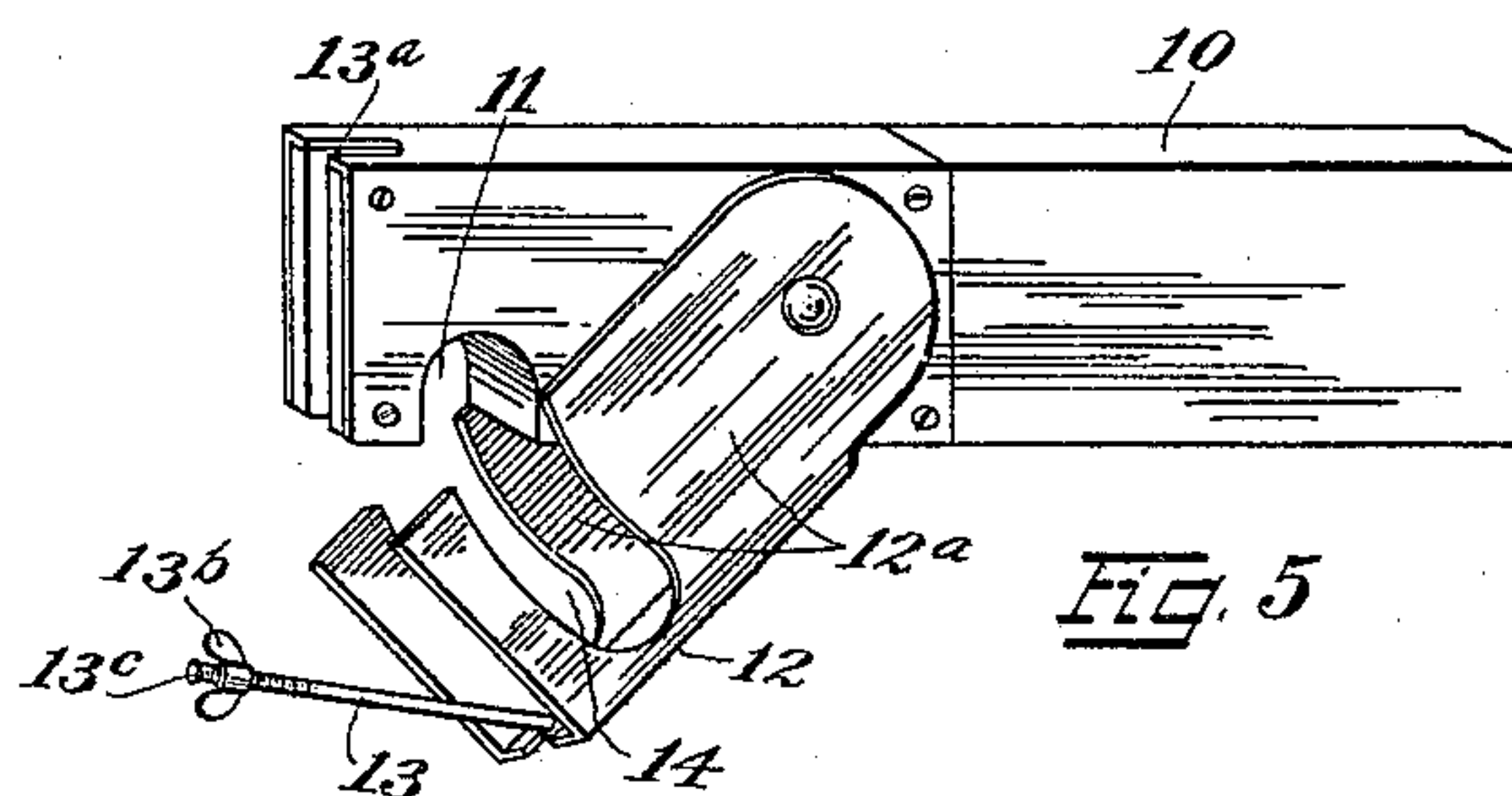


Fig. 5

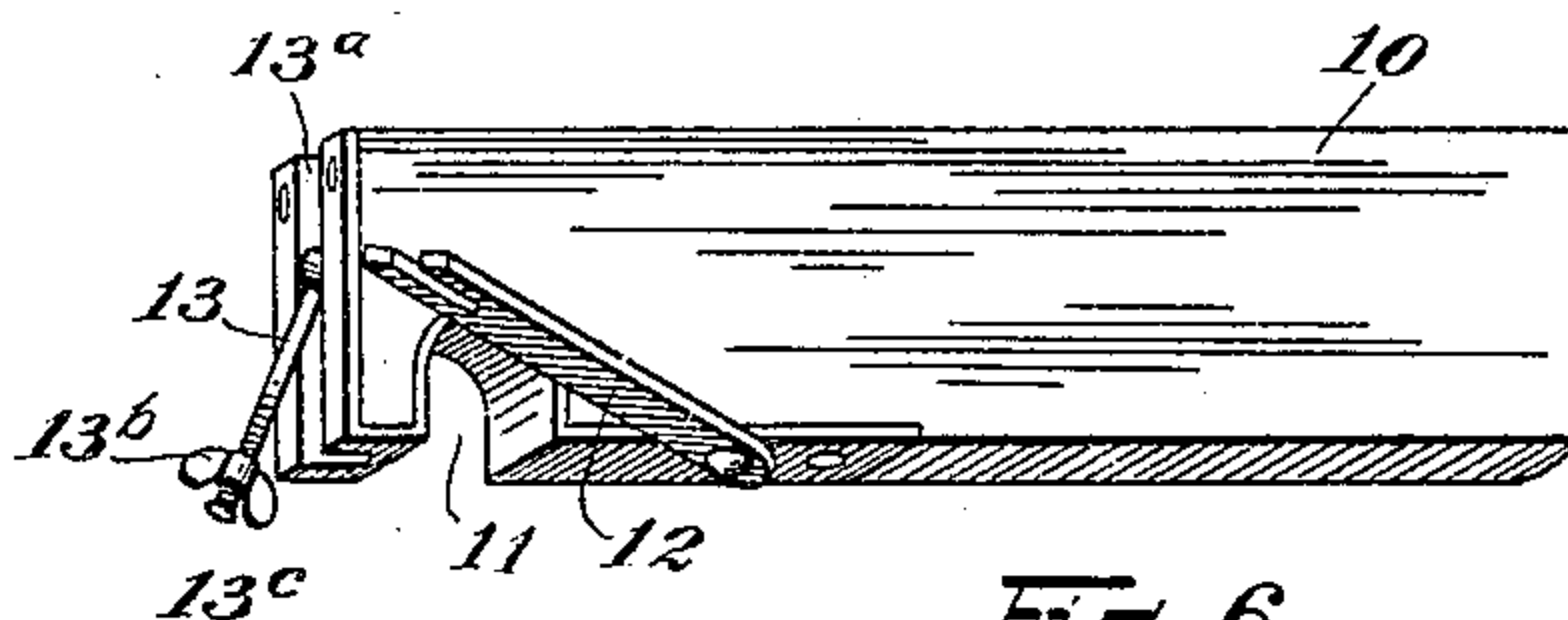


Fig. 6

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# UNITED STATES PATENT OFFICE.

FRED CLARE VALENTINE, OF CLEVELAND, OHIO, ASSIGNOR TO THE UNITED LADDER-SCAFFOLD COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

LADDER-SCAFFOLD.

991,565.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed April 3, 1909. Serial No. 487,780.

*To all whom it may concern:*

Be it known that I, FRED C. VALENTINE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ladder-Scaffolds, of which the following is a specification.

My invention relates to improvements in ladder-scaffolds, the primary object of the invention being to provide a generally-improved scaffold of this class which will be exceedingly simple in construction, cheap of manufacture, efficient in use, and much better adapted to its intended purposes than any other device of the same class with which I am acquainted.

The invention relates more particularly to the bracing and locking means whereby the several ladder sections may be quickly assembled and disassembled, and when assembled will form a scaffold structure of great strength and rigidity.

With the above mentioned objects in view, the invention consists in the novel construction, arrangement and combination of parts, hereinafter described, illustrated in one of its embodiments in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings, forming a part of this specification, Figure 1, is a perspective view of a section of a ladder-scaffold constructed in accordance with my invention. Fig. 2, an enlarged detail view of one of the self-centering scarf couplings for connecting the adjacent ends of the side bars of the superposed ladder sections. Fig. 3, a detail top plan view of one of the clamping devices used in connecting the ends of the braced link-bars to the side bars of the several ladder sections. Fig. 4, a side elevation of the same. Fig. 5, a detail perspective view of one of the mousing-hooks formed at the ends of the connecting brace-bars for connecting the same to the rounds of the ladder sections. Fig. 6, a similar view of a modified form of same.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

It will be seen upon referring to the accompanying drawings, that the improved ladder-scaffold comprises a plurality of vertical ladder-sections capable of being defi-

nitely lengthened by the superposition of additional sections, and a plurality of horizontal sections or bars which serve either as side extensions, stages, brace-bars, or connecting link-bars. The plurality of vertical ladder-sections or extensions are preferably secured together in pairs by connecting brace-bars connected to the rounds of said ladder sections, and the pairs secured together by link-bars interposed between the side bars of said ladder sections and connected thereto by means of suitable coupling devices.

The ladder sections are similar in construction to an ordinary ladder and consist of the usual side bars or pieces 1, permanently secured together by the usual cross-bars or rounds 2.

The superposed vertical ladder sections are detachably connected together by means of self-centering scarf couplings interposed between the adjacent ends of side bars 1, said scarf couplings comprising male and female members, the male members consisting of main and auxiliary side plates 3, and 4, and intermediate webs 5, of inverted V-shape in outline, said male members being preferably secured to the upper ends of the side bars by means of pins or bolts 6, passing through the side plates 3, and 4. The female members are preferably carried upon the lower ends of the side bars of the adjacent superposed ladder-sections, each of said female members comprising a V-shaped recess 7, forming prongs 8, said V-shaped recess being adapted to receive and contain the wedge shaped projection 5, of the male member and said prongs 8, being adapted to fit into the oppositely-disposed recesses 5<sup>a</sup>, on each side of the wedged shaped projection 5, and intermediate the side plates 3, and 4, when the side bars of the ladder sections are in their assembled or connected positions. The arrangement and disposition of the parts of the scarf coupling serve to brace and maintain the side-bars of the assembled ladder-sections in perfect alinement with each other, and as a further means of bracing and maintaining the side bars in perfect alinement the main or inner side plates 3, are provided at their ends with round receiving recesses 9, normally receiving and taking over the adjacent rounds of the several ladder-sections when the latter are assembled.



As a means for connecting and bracing the ladder sections in pairs horizontal brace-bars 10, and pivotally-mounted angularly-extending braces 10<sup>a</sup>, are interposed between  
 5 and connected to the rounds 2, of the several ladder sections and connected to said rounds by means of mousing-hooks each of said mousing-hooks, in the present instance, comprising round receiving recesses 11, formed  
 10 near the ends of said brace bars 10, and angularly-extending braces 12<sup>a</sup>, and pivotally-mounted keeper members 12. The free ends of the mousing or keeper members are adapted to be retained or clamped in their closed  
 15 positions by means of pivotally-mounted locking bolts 13, normally resting in vertically-disposed recess slots 13<sup>a</sup>, in the ends of the brace members 10, and 10<sup>a</sup>.

The mousing or keeper members are preferably formed as shown in Figs. 1, and 5, of the drawings, said members in this embodiment comprising a sleeve or main body portion of substantially U-shape in cross section, the side plates 12<sup>a</sup>, thereof being  
 20 provided with a round-receiving recess 14, adapted to take over and retain the round when seated in the round-receiving recess 11, and in this embodiment the mousing or keeper member is retained in its closed position by means of the locking bolt pivotally  
 30 carried upon the free end of the keeper member, said locking or latching bolt being adapted to be normally seated in the recess slot 13<sup>a</sup>, and to be clamped in retaining position by means of the winged nut 13<sup>b</sup>,  
 35 carried upon the free end of the bolt 13. The keeper plate 13, shown in Fig. 6, is retained in its closed position by means of the locking or latching bolt pivotally-mounted  
 40 and carried upon the end of the brace member 10. As a means for preventing the winged nuts 13<sup>b</sup>, from losing off of the locking bolts 13, the ends of the latter are preferably upset or slightly turned over to form  
 45 stop heads 13<sup>c</sup>.

The pairs of ladder-sections are connected and braced with respect to each other by means of link-bars 15, and pivotally-mounted brace members 15<sup>a</sup>, interposed and connected to the side-bars or pieces 1, by means  
 50 of coupling devices carried upon the ends of said link-bars 15, and brace members 15<sup>a</sup>, preferably constructed as now described. The said coupling devices comprise oppositely-disposed pivotally-mounted clamping  
 55 hooks 16, carried upon adjusting bolts 17, mounted in suitable openings in brackets 18. The brackets 18, are secured upon the ends of the link and brace members 15, and  
 60 15<sup>a</sup>, and the adjusting bolts 17, are retained in the brackets 18, by means of winged nuts 19. The clamping hooks 16, are adapted to be swung toward each other upon the pintles or pins 17<sup>a</sup>, upon the ends  
 65 of the adjusting bolts 17, and when the ends

of the link and brace-members 15, and 15<sup>a</sup>, are brought into abutting engagement with the sides of the side bars 1, they are adapted to be clamped into engagement therewith by means of the clamping hooks 16, taking over  
 70 the edges of the side bars 1, and drawn up or clamped by means of the winged nuts 19.

Having thus described an embodiment of my invention, what I claim and desire to secure by Letters Patent is,—

1. In a ladder-scaffold, a plurality of ladder sections arranged in pairs, a plurality of stayed brace-bars interposed between the ladder sections of each pair and secured to the rounds thereof by means of mousing-hooks, a plurality of link-bars carrying pivotally mounted braces interposed between the side bars of said ladder sections of each pair, adjusting bolts carried at the ends of said link-bars and pivotally mounted braces, and oppositely disposed pivotally mounted clamping hooks carried by said adjusting bolts and adapted to take over adjacent ladder side bars whereby said pairs of ladder sections may be drawn closely together by said adjusting bolts when said ladder sections have been set up.

2. In a ladder-scaffold, a plurality of pairs of ladder sections, a plurality of link-bars and pivotally mounted brace members interposed between the side bars of said pairs of ladder sections, and adjusting bolts carried at the ends of said link-bars and brace members and provided with swinging clamping hooks adapted to take over opposite edges of the side bars of the said ladder sections whereby the said pairs of ladder sections may be closely linked and braced together when the parts are assembled.

3. In a ladder-scaffold, a plurality of pairs of ladder-sections, a plurality of link-bars and pivotally mounted brace members interposed between and detachably connected to the side bars of said pairs of ladder sections by means of adjustably mounted clamping hooks taking over opposite edges thereof, and a plurality of stayed brace-bars interposed between said ladder sections and secured to the rounds thereof by means of mousing-hooks.

4. In a ladder-scaffold, a pair of ladder sections, a plurality of link-bars carrying pivotally mounted braces interposed between the side bars of said pair of ladder-sections, adjusting bolts carried at the ends of said link-bars and, pivotally mounted braces, and clamping hooks carried on the outer ends of said adjusting bolts and adapted to be swung toward each other and take over the opposite edges of the adjacent ladder side bars whereby the parts may be drawn closely together by said adjusting bolts when assembled.

5. In a ladder-scaffold, a plurality of ladder sections arranged in pairs, a plurality



of link-bars and pivotally-mounted brace members interposed between the side-bars of said pairs of ladder sections, and pivotally and adjustably mounted clamping hooks carried upon the ends of adjusting bolts slidably mounted at the ends of said link-bars and brace members and taking over the edges of said side-bars whereby the parts may be

drawn closely together by said adjusting bolts when the parts are assembled. 10

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

FRED CLARE VALENTINE.

Witnesses:

O. C. BILLMAN,  
GEO. H. BILLMAN.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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