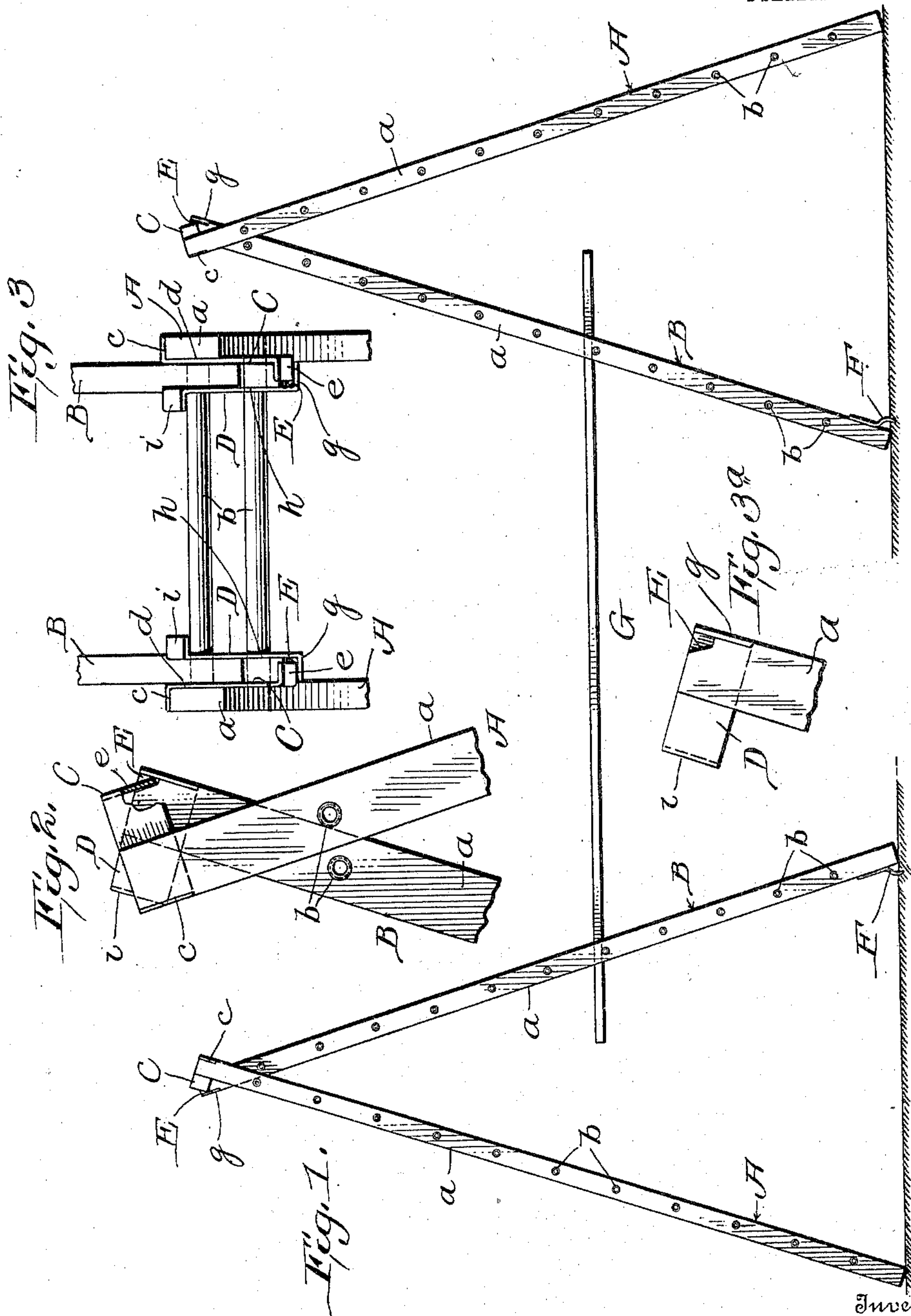


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 COMBINED LADDER AND SCAFFOLD.
 APPLICATION FILED MAR. 17, 1910.

965,712.

Patented July 26, 1910.

2 SHEETS—SHEET 1.



Witnesses

Oliver H. Holmes
G. M. Coppenhaver.

By

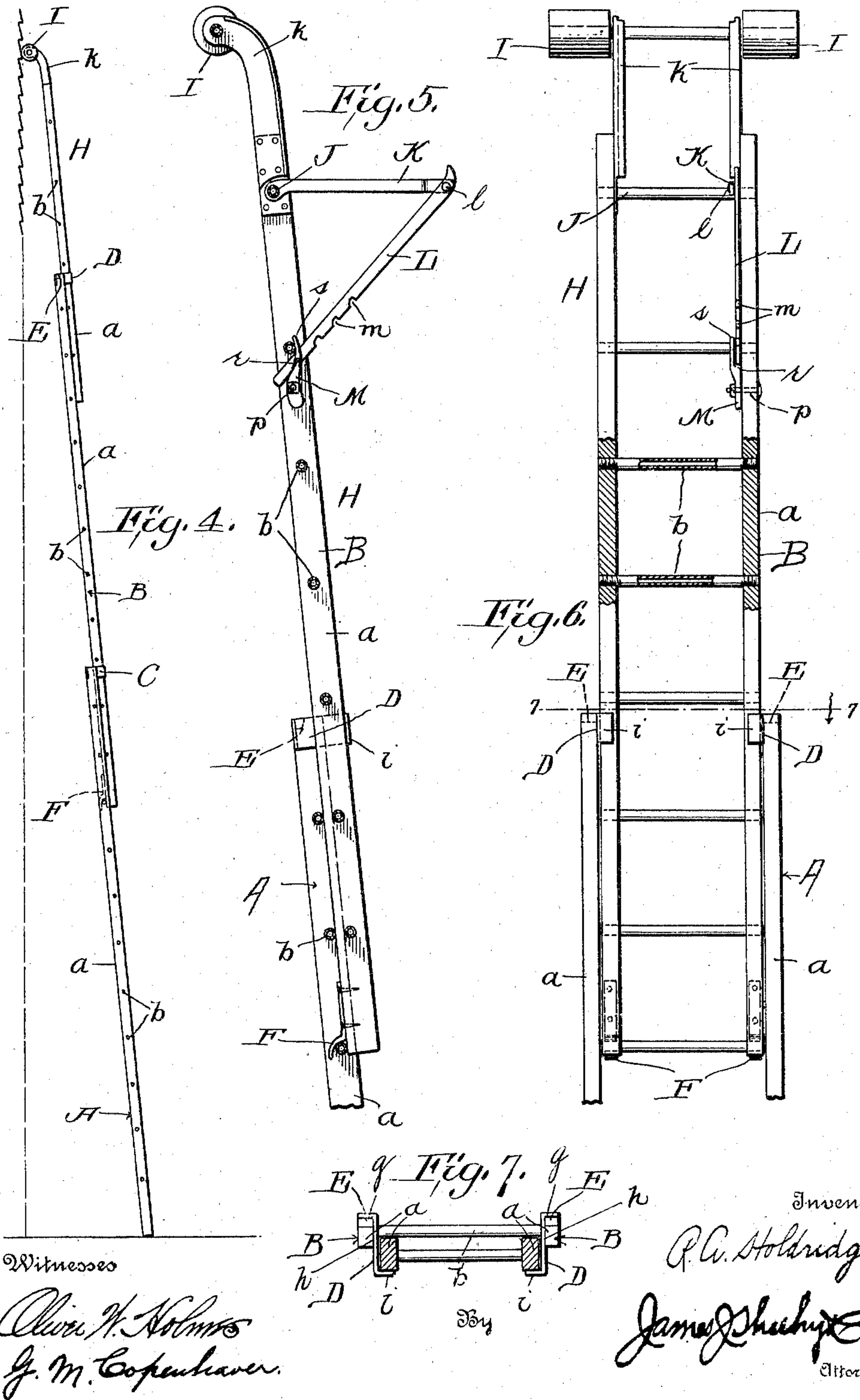
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UNITED STATES PATENT OFFICE.

RANSOM A. HOLDRIDGE, OF VIRGINIA, MINNESOTA.

COMBINED LADDER AND SCAFFOLD.

965,712.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed March 17, 1910. Serial No. 549,964.

To all whom it may concern:

Be it known that I, RANSOM A. HOLDRIDGE, citizen of the United States, residing at Virginia, in the county of St. Louis and State of Minnesota, have invented new and useful Improvements in Combined Ladders and Scaffolds, of which the following is a specification.

My invention has to do with ladders and scaffolds; and it consists in the peculiar and advantageous combined ladder, step ladder and board support hereinafter described and claimed.

In the drawings, accompanying and forming part of this specification: Figure 1 is a side elevation illustrating ladder sections constructed in accordance with my invention as arranged in combination with a board to form a scaffold; either pair of said sections being also adapted to be used as a step ladder. Fig. 2 is an enlarged side elevation, of the upper ends of the ladder sections shown at the right of Fig. 1, clearly disclosing the manner in which said ends are interlocked; the arm at the upper end of one side bar of section A being partly broken away to show the inwardly directed, angularly disposed portion at the forward end of said arm, and the manner in which the same is seated in the adjacent socket E. Fig. 3 is a detail plan of the same. Fig. 3^a is a detail side elevation of the outer side of the upper portion of the side bar *a* in the section B at the right of Fig. 1. Fig. 4 is an elevation showing one pair of the ladder sections comprised in Fig. 1 as relatively arranged and connected with a third section to form an extension ladder. Fig. 5 is an enlarged sectional view showing the upper portion of the extension ladder and also showing in operative position my novel bracket on the third or upper section. Fig. 6 is a view, partly in elevation and partly in section, taken at a right angle to Fig. 5. Fig. 7 is a cross-section taken in the plane of the line 7—7 in Fig. 6, looking downward.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A A are lower ladder sections, and B B are intermediate ladder sections, each of which sections comprises side bars *a* and rungs *b*. Each lower section A is provided at its upper end with two arms C, preferably of metal, which are suitably fixed,

preferably at *c* and *d*, to the upper ends of the side bars *a* of the section, and extend at right-angles to said side bars *a* and terminate at their ends remote therefrom in inwardly-directed portions *e* disposed at right angles to their major portions. Each intermediate section B is provided in the upper ends of its side bars *a* with sockets E, best shown in Figs. 2 and 3, and is equipped on said side bars *a* with arms D, preferably of metal, which are suitably fixed to said side bars at *g* and *h* (Fig. 7) and extend at right angles therefrom and terminate at their ends remote from the side bars in inwardly-directed portions *i* disposed at right angles to their major positions. At this point attention is directed to the fact that the angularly disposed portion *g* of each arm D forms one wall of the adjacent socket E; also, to the fact, that each intermediate section B is provided on the lower portions of its side bars *a* with claws F.

In Figs. 2 and 3^a is shown the outer side of the upper portion of one side bar *a* of a section B, and by comparison of Figs. 2, 3, and 3^a, it will be readily understood that the outer side and upper end of each socket E are open, and that each socket E is formed in the upper end of one side bar *a* and between the portion *g* of one arm D and the opposite portion of the side bar *a*.

To interlock two of the sections A and B so as to form a useful and safe step ladder or an equally safe support for one end of the board G shown in Fig. 1, it is simply necessary to arrange the upper end of the comparatively narrow section B between the upper portions of the side bars *a* of the section A, and to seat the inwardly-directed portions *e* on the arms C of the section A in the sockets E in the upper ends of the side bars *a* comprised in section B, while arranging the sections A and B at acute angles to each other so that the upper rung *b* of the section A bears against the side bars *a* of the member B. When the sections A and B are relatively arranged with their upper portions interlocked as described, there will obviously be no liability of the sections becoming accidentally disconnected, and yet when it is desired to disconnect the sections, the same can be readily accomplished by moving one section in the direction of its length with respect to the other. It will also be understood that when two of the sections A and B are used in the manner shown

in Figs. 1-3, the claws F on the section B serve, by engaging the ground, to prevent slipping.

When it is desired to use two sections A and B to form an extension ladder such as shown in Fig. 4, the section B is arranged within the arms C of the section A, and is held by said arms to the section A, while the claws F at the lower end of the section B are placed in engagement with one of the rungs of the section A, after the manner shown by dotted lines in Fig. 4. In this connection it will be noticed that the section B may be moved endwise between the angular portions *e* of the arms C and the rungs of the section A to increase or diminish the length of the ladder; also, that the provision of the sockets E in the upper ends of the side bars of the section B, does not interfere in any measure with the ability of the arms D on the section B in holding the third section, hereinafter described, to said section B.

H is the third section of the ladder, which is narrower than the adjacent intermediate section B, but in common with the lower section A and the intermediate section B comprises side bars *a* and rungs *b*. At this point I would direct attention to the fact that I prefer in all of the ladder sections to form the rungs *b* of pipe sections, as most clearly shown in Fig. 6, and that I also prefer to provide the said rungs with oppositely threaded end portions which serve, when the rungs are turned about their axes, to draw the side bars *a* in which said end portions are socketed toward each other and hold the said side bars in tight engagement with the rungs. It will also be observed by reference to Figs. 4 to 6 that the upper section H is provided with claws F similar to those before described, and that at its upper end the said section H is provided with an angularly disposed portion or portions *h* with which are connected anti-friction rollers I having for their office to prevent injury to the side of a building when the ladder is placed against the same or is moved up or down while in engagement with said building side.

Journalled in the upper portions of the side bars *a* comprised in the upper section H is a metallic rock-shaft J, Figs. 5 and 6, and fixed to said rock-shaft is one link K of a foldable ladder bracket—i. e., a bracket adapted in combination with a similar bracket on another ladder, to support a board or the like (not shown). In addition to the said link K, my novel ladder bracket comprises a link L which is pivoted at *l* to the link K, and is notched, as indicated by *m*, and a dog M which is pivotally connected at *p* to one side bar *a* of the section H, and is adapted to cooperate with an adjacent rung *b* of said section in holding the link L in the position shown in Fig. 5.

It will be noted by comparison of Figs.

5 and 6 that the lower arm of the dog M is proportionately heavy, and that on the upper arm of said dog is a shoulder *r* for the purpose of entering the notches *m* one at a time, and a horn *s* which is of a length to bear against the rung next above the fulcrum point *p* of the dog. Obviously when the parts are arranged as shown in Fig. 5, the imposition of weight on the bracket link K will tend to hold the horn *s* against the adjacent rung, and will also tend to hold the shoulder *r* in one of the notches *m*, and the link L between the rung and the shoulder *r*, with the result that there is no liability of the bracket collapsing under the weight thereon. When, however, it is desired to fold the bracket, the same may be accomplished by swinging the upper end of the dog M away from the adjacent rung, so as to release the link L from the dog, and then the links K and L may be allowed to hang idle against the rungs of the section H.

While I have shown and described one form of my invention, it is to be understood that I am not limited to the details or the form or relative arrangement of parts disclosed, but that modifications may be made therein without departing from the spirit thereof.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In a combined extension ladder and step ladder or support, a section comprising side bars and rungs and having arms fixed to and extending at right angles from the upper portions of the side bars and terminating in angularly-disposed inwardly-directed portions, and a section narrower than the first-named section and comprising side bars and rungs and having sockets in the upper ends of its side bars and also having arms fixed to and extending at right angles from the upper portions of the side bars and terminating at their inner ends in angularly-disposed, outwardly-directed portions which form walls of said sockets, and terminating at their outer ends in angularly-disposed, inwardly directed portions, for the purposes set forth.

2. In a combined extension ladder and step ladder or support, sections respectively comprising side bars and rungs; one of the said sections being narrower than the other and provided at the upper ends of its side bars with sockets, and arms fixed to and extending at an angle to the upper portions of the side bars of the sections and terminating at their ends remote from the side bars in angularly-disposed, inwardly-directed portions for the purposes set forth.

3. In a combined extension ladder and step ladder or support, sections respectively comprising side bars and rungs; one of the

said sections being narrower than the other and provided at the upper ends of its side bars with sockets, claws fixed to the lower ends of said side bars, and arms fixed to
5 and extending at an angle to the upper portions of the side bars of the sections and terminating at their ends remote from the side bars in angularly-disposed, inwardly-directed portions, for the purposes set forth.
10 4. A combined extension ladder and step ladder or support comprising a lower section and a narrower intermediate section each having side bars and rungs; the intermediate section being provided at the upper
15 ends of its side bars with sockets, arms fixed to and extending at an angle to the upper

portions of the side bars of the sections and terminating at their ends remote from the side bars in angularly-disposed, inwardly directed portions, claws at the lower end of
20 the intermediate section, another section narrower than the intermediate section and having side bars and rungs, and claws at the lower end of the last named section.

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

RANSOM A. HOLDRIDGE.

Witnesses:

ROY M. BARTON,
N. B. ARNOLD.