

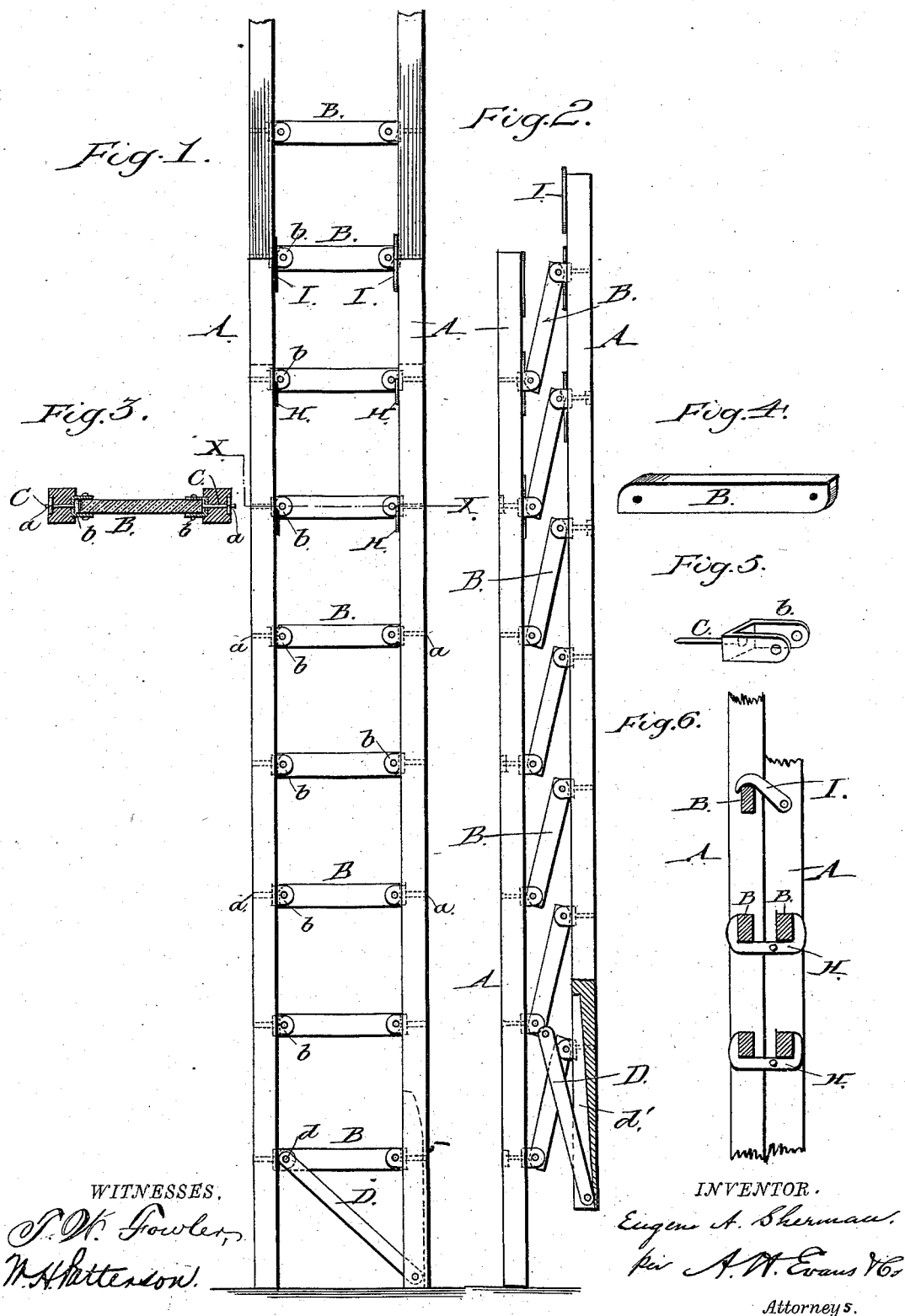
(No Model.)

E. A. SHERMAN.

LADDER.

No. 382,114.

Patented May 1, 1888.



UNITED STATES PATENT OFFICE.

EUGENE AUGUSTINE SHERMAN, OF PLOVER, WISCONSIN.

LADDER.

SPECIFICATION forming part of Letters Patent No. 382,114, dated May 1, 1888.

Application filed February 16, 1888. Serial No. 264,236. (No model.)

To all whom it may concern:

Be it known that I, EUGENE AUGUSTINE SHERMAN, a citizen of the United States, residing at Plover, in the county of Portage and State of Wisconsin, have invented certain new and useful Improvements in Ladders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation of the ladder ready for use. Fig. 2 is a similar view of the ladder folded. Fig. 3 is a cross section through the line X X of Fig. 1. Fig. 4 is a detail view of one of the rungs detached. Fig. 5 is a detached view of one of the sockets. Fig. 6 is a detail of the single and double securing-hooks.

This invention relates to folding ladders; and it has for its object to provide a ladder which may readily be folded for transportation and unfolded ready for use, and be strong and firmly braced when so adjusted.

The invention consists in certain details of construction and combination of parts, which will be hereinafter more fully described, and particularly pointed out in the claims.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the manner in which I have carried it out.

In the drawings the side bars, A A, have formed through them transversely a series of bolt-holes, *a*, corresponding in number to the number of the rungs intended to be used. The rungs B have their ends pivoted in metal sockets *b*, which are in turn rigidly secured to the side bars, A A, by the screw-bolts or rivets C, passing through the holes *a* and secured on the outside of the side bars in any well-known manner. These sockets are countersunk in the side bars the thickness of the metal of which they may be formed, being, say, about one-eighth of an inch, as shown in Fig. 3.

The rungs B are rounded on two diagonal corners, as shown in Fig. 4, to enable the rungs to be freely turned in one direction while being folded, and are left square on the remaining two corners, so as to brace the ladder when unfolded for use.

To the foot of one of the side bars, and in a slot made for the purpose, I pivot the metal brace D, made of a single piece, which extends to the bolt *d*, which pivots the first rung on

the opposite side of the ladder. This brace is provided with a hole in its free end, which is adapted to fit over the end of the bolt *d* and firmly brace the ladder in position for use.

When the ladder is to be folded for transportation, it is only necessary to throw the brace D from the bolt *d*, when it folds back in the slot *d'* and allows the ladder to be folded.

I am aware that folding ladders are not new; but they have heretofore been made with a series of holes passing through the bars front to rear, which are calculated to greatly weaken the bars, and with revolving boxes and bolts, which tend to wear and weaken the bars. The essential object of my present invention is to overcome these objections. To the inner sides of the side bars, A, I pivotally secure plates or catches H, having hooked ends, whereby the ladder may be readily coupled to another ladder or section when a longer ladder is desired. These plates H are pivoted just below and to one side of the contiguous rung, and when in position are designed to engage the adjacent rungs of the two sections or ladders in the manner shown in Fig. 6. In addition to these hooks H, I employ other single hooks, I, pivoted near the tops of the inner side pieces, A, so that their outer or hooked ends may be placed over one of the rungs of the other ladder or section. By the use of the single and double hooked plates shown I am enabled to securely fasten the two ladders or sections together.

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

1. An improved ladder consisting of the side bars, A A, one of which is provided with the slot *d'*, the rungs B, pivoted in sockets *b*, and the brace D, consisting of a strip of metal pivoted at one end in the slot *d'* and provided at its opposite end with means for engaging the projecting end of one of the pivot-pins of the lower rung, substantially as described.

2. The combination, with a ladder, of the plates H, pivoted to the side bars of said ladder and provided with hooks at each end, and a pivoted plate, I, having a single hook, substantially as herein described.

EUGENE AUGUSTINE SHERMAN.

Witnesses:

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