(No Model.)

H. T. HAYES.

FIRE LADDER.

No. 412,705. Patented Oct. 8, 1889.

Fig. 1.

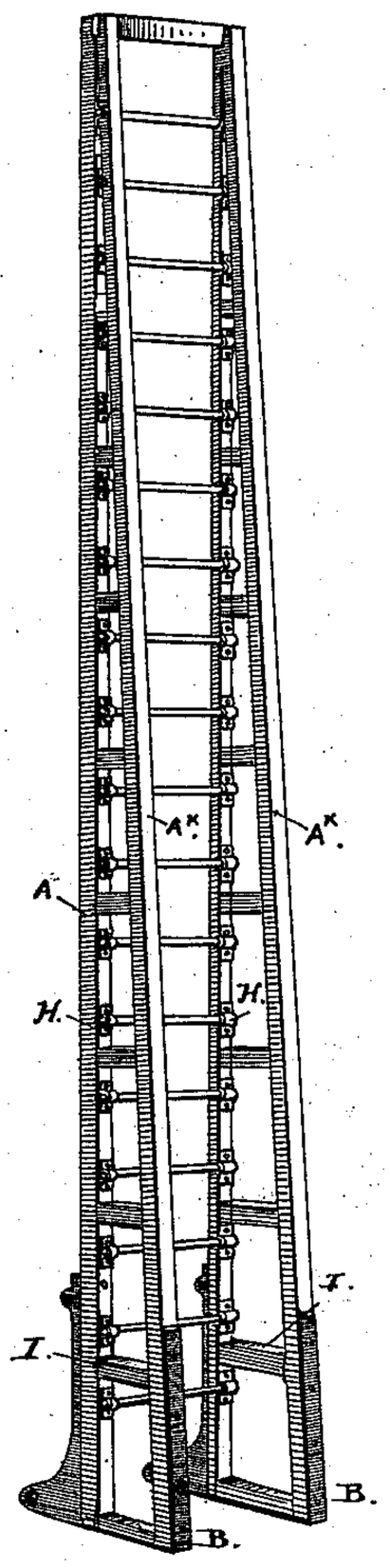


Fig. 2.

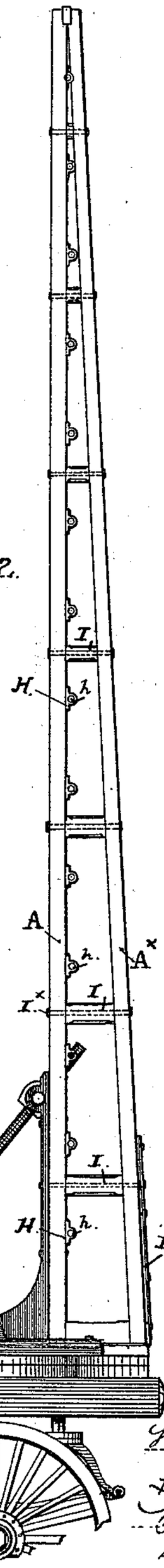
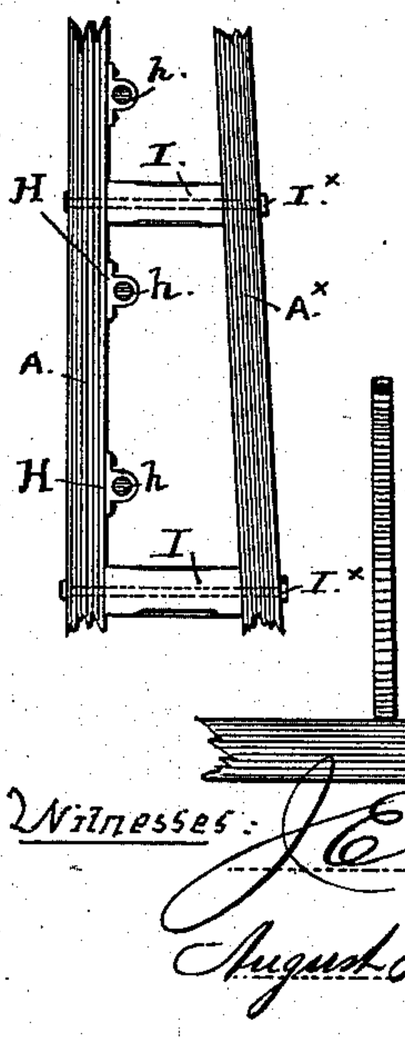


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY T. HAYES, OF OAKLAND, CALIFORNIA.

FIRE-LADDER.

SPECIFICATION forming part of Letters Patent No. 412,705, dated October 8, 1889.

Application filed January 12, 1889. Serial No. 296,193. (No model.)

To all whom it may concern:

Be it known that I, HENRY T. HAYES, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Fire-Ladders, of which the following is a specification.

The object of my invention is to provide a ladder for firemen's use of great strength and lightness, and one in which but little vibration or swaying will be had in the raising or lowering of the same by the mechanism usually employed for that purpose.

To attain this end my invention consists, essentially, in a double-trussed frame pivotally connected to a base-frame mounted upon a turn-table by means of angle-irons or plates. The rounds of the ladder are held by strap-plates or brackets connected to the inner face of the front portion of the frame, and the truss-blocks are interposed between every two rounds of the series, in which position they are held by bolts passing through them and the ladder-frames, all of which, together with the details of construction and operation, will be hereinafter fully set forth.

Referring to the accompanying drawings, which form part of the specification, by figures and letters, Figure 1 is a perspective view of my improved fire-ladder. Fig. 2 is a side view. Fig. 3 is a side view of a portion of one frame with parts broken away.

A A′ is the double frame, strengthened and supported by outer angle-irons or straps B B at the base of the ladder, which are bent so as to conform to the base of both frames and bolted to them, extending from the rear faces around and under the ends of the frame, under the two lower truss-blocks, and up the front portion of the frame, as shown in Fig. 1. In the base of these straps are formed eye-holes for the rod or pivot C, upon which the ladder hinges and has its bearing on the frame D, bolted to the turn-table E in such a manner that the ladder can be raised or lowered to the desired pitch or angle from the horizontal or vertical position by operating the screw F. When in the former position, however, it will rest upon the brackets or supports of the carrying-frame G. By this means it will be clearly seen that the base of the ladder is firmly and rigidly supported and all vibration prevented.

To the inner faces of the front frame of the ladder is bolted at suitable intervals of space the brackets or plates H, and these are provided with eye-holes *h* to receive the ends of the rounds and hold them in an immovable position without materially weakening the frame, as in boring holes for the rounds to rest in. By this construction it will be evident that the brackets can be easily removed in replacing the rounds in case of breakage or wearing away of the same. Between every two series of rounds are interposed the truss-blocks I, through which the bolts $I^{\times}$ pass, and the two frames A $A^{\times}$ are screwed tightly and firmly together by the nuts along the outer faces of the rear frame $A^{\times}$, which draws the inner faces of the double frame firmly against the square ends of the truss-blocks and holds the whole structure rigidly while in the act of raising or lowering for occupation by the firemen.

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

1. The herein-described trussed fire-ladder, which consists in a double frame having the interposed truss-blocks, with square ends and binding-rods, passing through said blocks, and ladder-frames held in position by nuts upon the outer face of the rear ladder-frame, as set forth and specified.

2. The ladder composed of the double frames on the sides, each frame having truss-blocks I and bolts $I^{\times}$ for uniting and holding its two parts, and one of the said parts of each frame being provided with series of brackets or plates H, bolted to its inner face and provided with sockets or eye-holes for the ends of the rounds, as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

HENRY T. HAYES. [L. S.]

Witnesses:
C. W. M. SMITH,
CHAS. E. KELLY.