(No Model.)

T. MILLER.

FIRE ESCAPE LADDER.

No. 263,560. Patented Aug. 29, 1882.

Fig. 2.

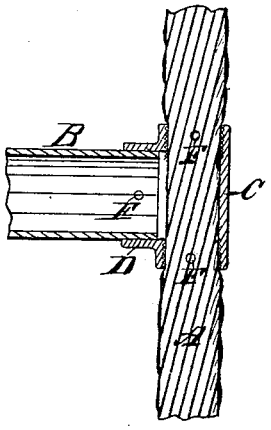


Fig. 1.

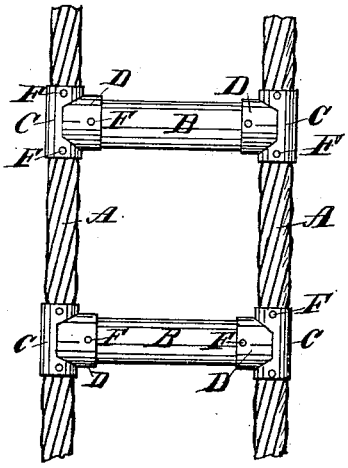


Fig. 4.

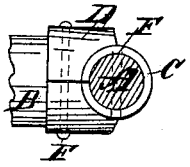
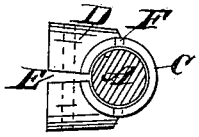


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS MILLER, OF JERSEY CITY, NEW JERSEY.

FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 263,560, dated August 29, 1882.

Application filed April 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MILLER, of Jersey City, Hudson county, New Jersey, have invented new and useful Improvements in Fire-Escape Ladders, of which the following is a specification.

This invention relates to the construction of fire-escape and other ladders having rope sides and metal steps; and it consists of an improved method of connecting the steps and sides by means of malleable castings in the form of gas-T's, the said T's being slitted through the stem or outlet of the T, and also through the side of the head, to which the stem or outlet joins, and sprung or squeezed together on the rope, and riveted through the rope and step, thus making very simple, compact, and substantial connections, as hereinafter more fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a front elevation of a short section of a ladder constructed according to my invention. Fig. 2 is a detail, showing one of the steps and connecting-T's in section and side elevation of a piece of rope. Fig. 3 is a detail, showing one of the T's applied to the rope preparatory to being squeezed and riveted thereon, and Fig. 4 is a section showing the fastening complete.

I propose to use wire-rope A for the sides of a fire-ladder, but for other ladders may use Manila rope, to which I connect tubular-metal or other steps B, as may be required for the service to which the ladder is to be applied, and for making the said connection I propose to employ malleable-iron T's of the same from as employed for connecting gas-pipe, the ropes being passed through the head C, and the steps being inserted in the stem or outlet D; but in order to connect the T's readily with the ropes by slipping them on from the end, and then to secure them permanently, I construct said T's with a slit, E, through the sides of the stem, and also through that side of the head to which the stem is united, making said slit wide enough to allow the T to be very tightly squeezed onto the rope to securely bind the T in its place by the compression of the sides of it on the rope in a vice or by other means, after which I insert rivets F through holes previously made in the T's, and head them down permanently. After the T's are thus fastened upon the ropes I insert the steps B in the outlets D, and secure them by rivets F also. In this case the holes for the rivets will be preferably bored after the steps are inserted, in order that the holes may register properly in the steps and T's. In this case I have represented the T's as being screw-threaded in the ends of the head the same as they are when used for gas-T's, which enables the T's to bind more effectually on the ropes by the indentations of the edges of the threads; but as the T's will grip the ropes very powerfully, no doubt substantial fastenings will be obtained without the threads, and I do not limit myself to the use of them.

The common gas-T's may be used for making ladders as I propose, by sawing the slits in them; but it will be cheaper to cast them with the slit or opening to begin with, thus saving the sawing.

The malleable-iron T's will readily bend sufficiently for gripping the ropes as I propose without difficulty and without damage to the metal, thus enabling very neat, substantial, and cheap fastenings to be made by this method.

If desired, the steps may be screwed into the T's by using right and left threads, although the threads will be injured somewhat by the parts being squeezed together. Still they will undoubtedly hold sufficiently for the purposes of a ladder. As it will be desirable to have the steps larger than the ropes when wire-ropes are used, I shall employ reducing T's.

Although I have described and represented the T's as split through the outlet, or part to which the steps are connected, I do not mean to limit myself to that arrangement, for they may be split through the back or opposite side, the part in which the steps are connected being solid.

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

The combination, with the ropes and steps of a ladder, of metal gas-T's for connecting them together, said T's being split and squeezed on the ropes and riveted thereto, and also riveted or screwed to the steps, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOS. MILLER.

Witnesses:
W. J. MORGAN,
S. H. MORGAN.