(No Model.)

J. S. HARRISON.

FIRE ESCAPE LADDER.

No. 282,079. Patented July 31, 1883.

Fig. 1.

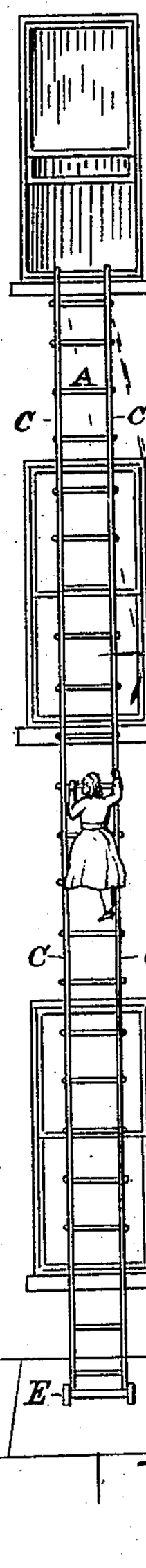


Fig. 2.

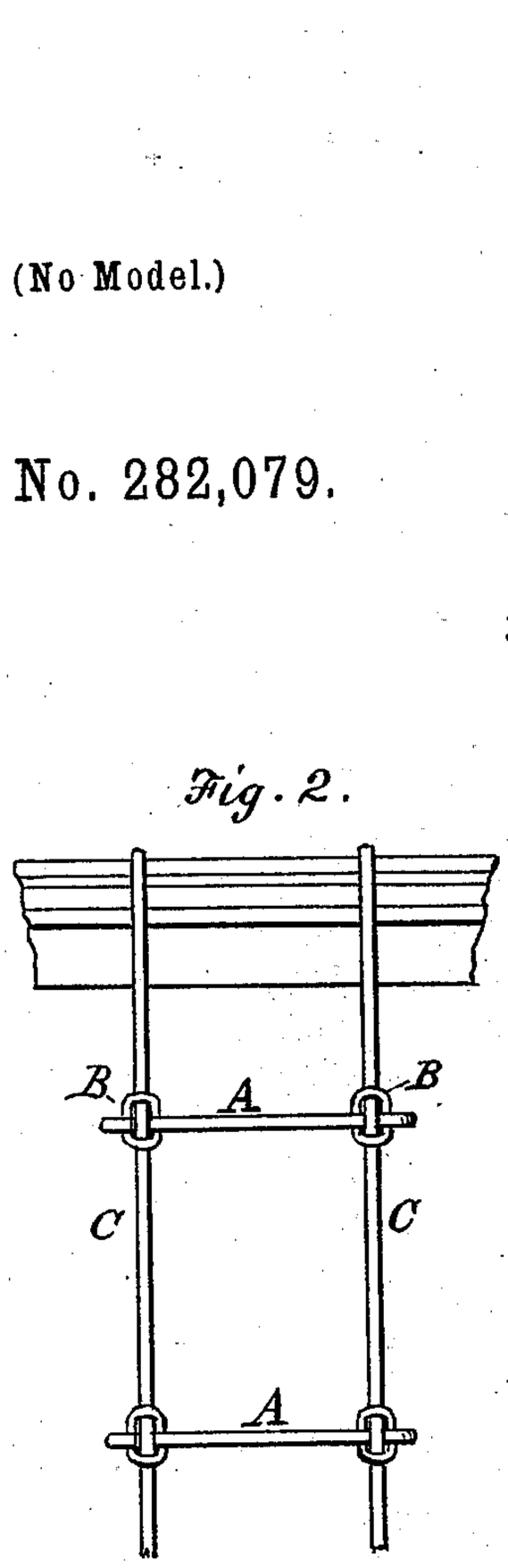


Fig. 5.

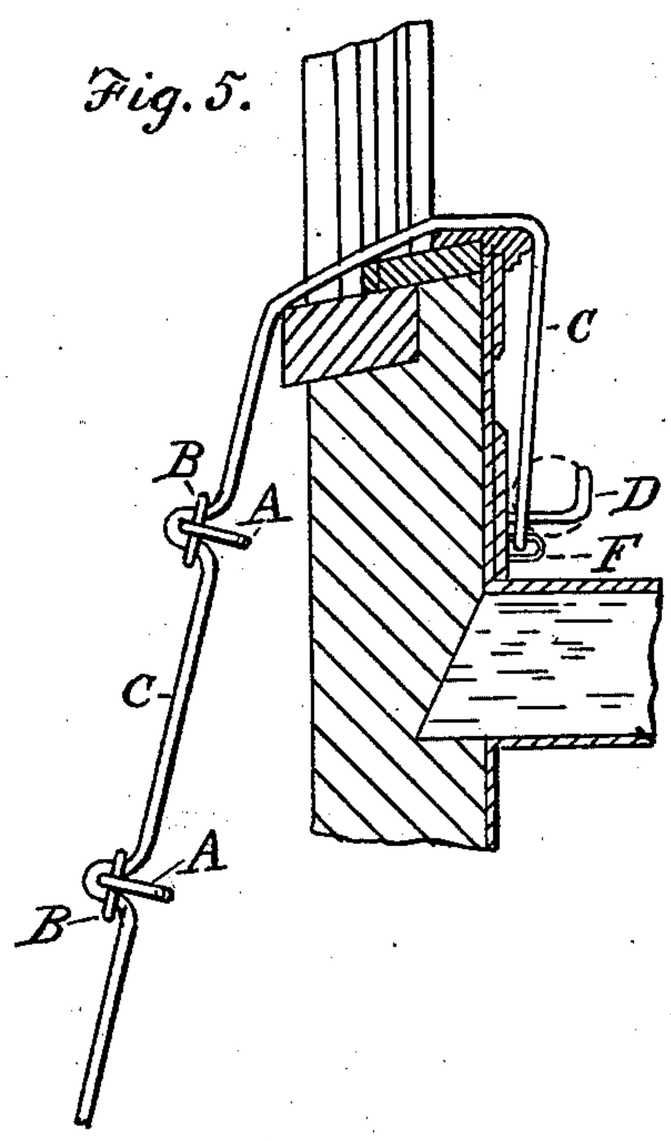


Fig. 3.

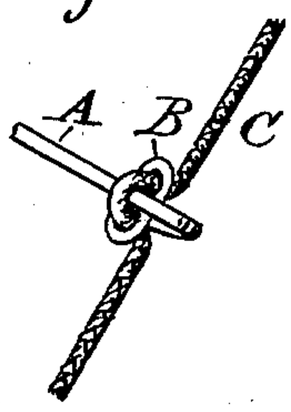
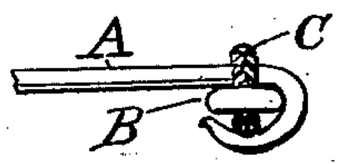


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN S. HARRISON, OF CLINTON, IOWA.

FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 282,079, dated July 31, 1883.

Application filed February 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. HARRISON, a citizen of the United States of America, residing at Clinton, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Fire-Escape Ladders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to fire-escape ladders; and it consists of such a ladder constructed of metallic wire-rope sides and metallic rungs secured to the sides by links, through which are inserted short bends or kinks of the rope sides, forming eyes to receive and hold the ends of the rungs. The ladder thus constructed is attached to a spool adapted to hold the ladder rolled upon it, when not in use, in convenient form for transportation. When the ladder is in use one end is attached to suitable fastenings inside of a room and the spool is dropped out of a window, the ladder unfolding, as it descends, by its own weight and the weight of the spool, as hereinafter fully described, and as set forth in the drawings, in which—

Figure 1 is a front view of the ladder extending from the upper window of a building to the pavement or ground below. Figs. 2, 3, and 4 are enlarged views of detached portions of the ladder, showing its construction. Fig. 5 illustrates one mode of attaching the ladder to a building.

The sides C of the flexible ladder are composed of small metallic wires braided or twisted together, forming ropes about one-fourth of an inch, or less, in diameter. Short bends or kinks are formed on these ropes the required distance apart, and are inserted through links B, forming thus eyes to receive and securely hold in place the metallic rungs A, which are inserted through the eyes over the links. The ends of the rungs are then bent around the links, as shown in Figs. 3 and 4 of the drawings, fastening the rungs to the sides of the ladder, so they cannot become disconnected. The links must be constructed of such size as to fit closely over the bent portions of the rope sides, holding them close to the rungs, thus preventing the liability of the sides slipping over the rungs.

The ladder is attached at one end to a spool, E, adapted to hold the ladder rolled up upon the spool, when not in use, in a compact convenient form to be readily carried in a trunk or otherwise.

Owing to the fact that fires often break out and spread in a building so suddenly and rapidly as to leave no chance for parties occupying upper rooms to escape by the stairs or elevators, and little time for preparation for escape otherwise, it is important to have the ladder always readily accessible and in position for immediate use. This may be accomplished in any convenient and suitable manner. Fig. 5 illustrates one mode of doing this, consisting of the adjustment of the spool containing the rolled ladder upon hooks D, fastened inside of a room, below the window, and one end of the ladder is attached to a staple, F, fastened below the hooks. When escape through the window becomes necessary, the spool is thrown out of the window and the ladder unfolds, as it descends, by its own weight and by the weight of the spool; and if fire is issuing through the lower windows persons below may take hold of the lower end and pull the ladder to one side, as shown by dotted lines in Fig. 1 of the drawings, enabling the escaping persons to avoid the flames.

The entire ladder being constructed of metal, it is not liable to be severed by the fire.

What I claim as new, and desire to secure by Letters Patent, is—

1. A flexible ladder constructed of the metallic wire-rope sides C, metallic rungs A, and the links B, substantially as and for the purposes described.

2. A flexible ladder having its rungs A secured to the bent or kinked sides by links B, adjusted over the bends in the sides, and having the ends of the rungs bent around the links, substantially as and for the purposes described.

3. The combination, with the flexible ladder, constructed as described, of the wire-rope sides C, metallic rungs A, and the links B of the spool E, adapted to hold the flexible ladder rolled up upon it, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN S. HARRISON.

Witnesses:

W. W. SANBORN,

THOMAS BARROWMAN.