

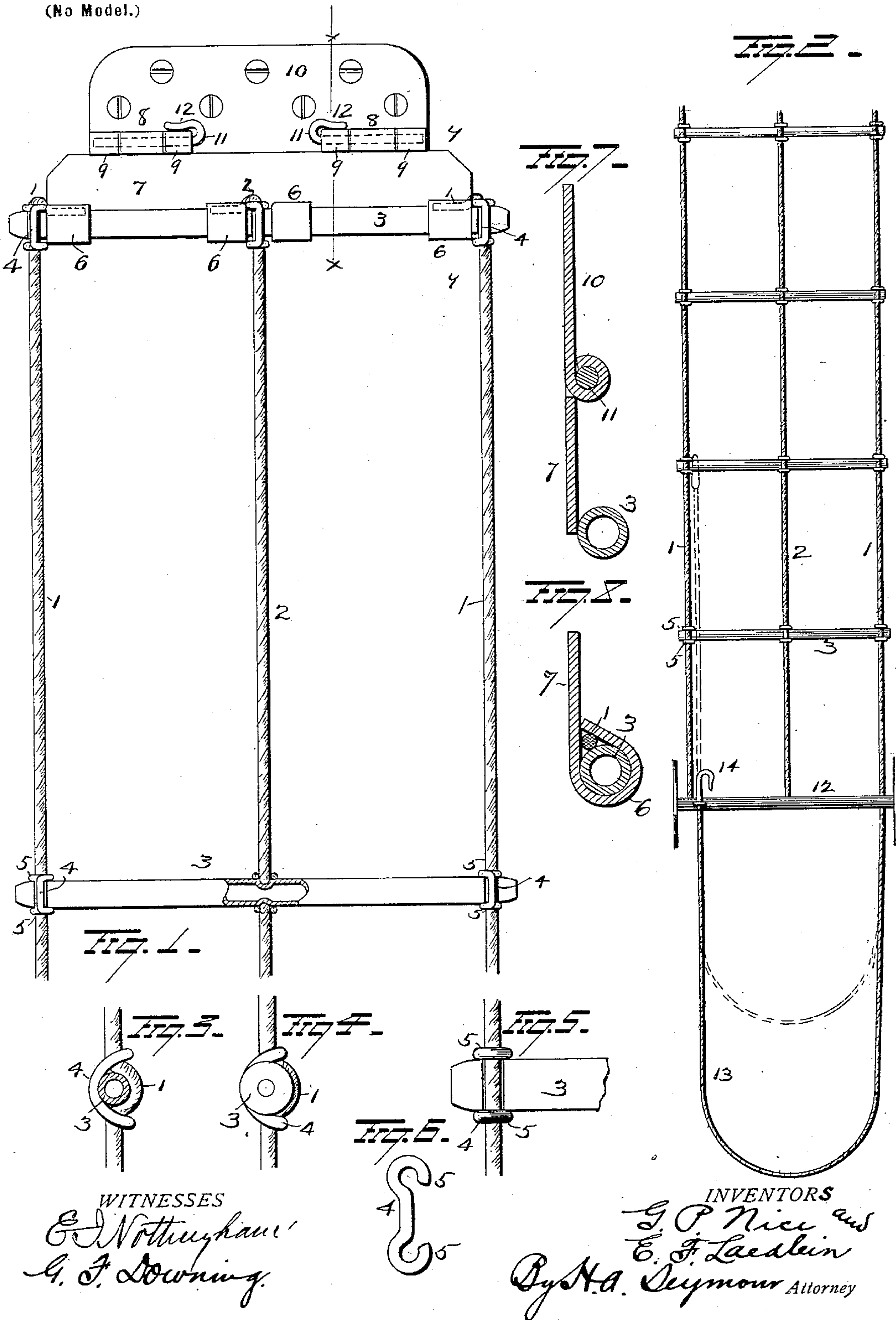
No. 704,086.

Patented July 8, 1902.

G. P. NICE & E. F. LAEDLEIN.
FIRE ESCAPE.

(Application filed June 7, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

GEORGE P. NICE AND EDWARD F. LAEDLEIN, OF WILLIAMSPORT,
PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 704,086, dated July 8, 1902.

Application filed June 7, 1901. Serial No. 63,640. (No model.)

To all whom it may concern:

Be it known that we, GEORGE P. NICE and EDWARD F. LAEDLEIN, residents of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in fire-escapes, and more particularly to an improved flexible ladder and means for supporting the same, the object of the invention being to provide a ladder of this character with improved means for securing the rungs in place, with improved means for securing the ladder to a window-sill, base-board, or other convenient support, and improved means for fastening a body or bundle to the ladder.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating the upper portion of the device. Fig. 2 is a view of the lower portion thereof. Figs. 3, 4, 5, and 6 are detail views illustrating the rung-securing mechanism, and Figs. 7 and 8 are views in section on the lines *x x* and *y y* of Fig. 1.

1 1 represent the outside parallel ropes or cables, and 2 a central rope or cable located between cables 1 1 and parallel therewith, all of said ropes or cables being preferably composed of wire strands and have secured thereto, as will now be explained, rungs 3. The rungs 3 are preferably in the form of metal tubes for strength and lightness and are provided near each end and centrally between their ends with peripheral grooves or depressions, into one half of which the cables 1 and 2 are held by wire clamping-links 4, which latter are bent to partly surround the rungs and are provided with loops or eyes 5 at their ends to receive the cables and tightly clamp them to the other half of the rungs, as clearly shown.

The upper rung of the ladder is secured in

clamping-sleeves 6 on one edge of a plate 7. These sleeves 6 are preferably formed from strips integral with the plate and bent into tubular form to receive the upper rung 3 and the upper free ends of the cables 1 2 and are clamped tightly upon the latter to prevent possibility of the cables being pulled out by the weight of a person or persons on the ladder. This plate 7 is provided on its opposite edge with integral sleeves 8 to align between integral sleeves 9 on a plate 10 and receive hinge-pins 11, preferably provided at one end with spring-arms 12 to tightly engage the sleeves 9 and prevent accidental removal, but which can be quickly removed when it is desired to move the ladder. The plate 10 is secured to a window-sill, base-board, or other convenient support by screws or nails in such manner as to withstand the necessarily great strains upon it.

The lowest rung 12 of the ladder is made in the form of a drum or reel on which to wind the ladder into a roll, when it can be placed in a suitable box or receptacle for the purpose, and when the ladder is desired it is simply necessary to throw the roll out of the window, and it will automatically unwind and hang in position for use.

The cable 1 at one side of the ladder extends some distance beyond the same and is preferably covered with canvas or rubber tubing to form a body-strap 13 free from the roughened surface of the wire cable. The free end of the strap 13 is passed up through the rung or through an eye or ring on the same and provided with a hook 14, adapted to be fastened over any of the upper rungs of the ladder, as clearly shown in dotted lines in Fig. 2. This strap 13 is found especially desirable for children, old and infirm persons, or others too timid to descend the ladder, as the strap can be passed beneath their arms and hooked over one of the upper rungs to hold the person on the ladder, and the latter can be lowered from above to deposit the person on the ground or in reach of assistance from below. Valuables and articles of furniture can also be lowered by this means without danger.

Various slight changes might be resorted to in the general form and arrangement of

the several parts described without departing from the spirit and scope of our invention, and hence we would have it understood that we do not wish to limit ourselves to the
5 precise details set forth, but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what
10 we claim as new, and desire to secure by Letters Patent, is—

1. In a ladder, the combination of parallel ropes or cables and a rung having peripheral
15 grooves therein to receive the cable, of clamping-links, each comprising a wire bent at each end to form loops or eyes to receive the cable above and below the rung, said clamping-links bent between their ends and disposed in the peripheral grooves therein to partly
20 surround the rung and clamp the cable and itself in the grooved portion of the rung.

2. The combination with a supporting-

plate and a ladder having rope or cable uprights and rungs, of clamping-sleeves on the plate, the upper rung and upper ends of
25 the cables being clamped in said clamping-sleeves.

3. The combination with a plate adapted for attachment to a window-sill, of a second
30 plate hinged to the lower edges of the first-mentioned plate, sleeves on said second plate, a flexible ladder having cables and rungs, the upper ends of said cables inserted into the sleeves and means for clamping said cables in the sleeves.
35

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

GEORGE P. NICE.
EDWARD F. LAEDLEIN.

Witnesses:

HUGH GILMORE,
ROBERT GILMORE.