R. A. COPELAND.

FIRE-ESCAPES.

No. 188,234. Patented March 13, 1877.

Fig. 3

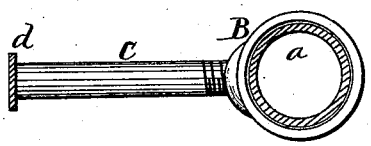


Fig. 1.

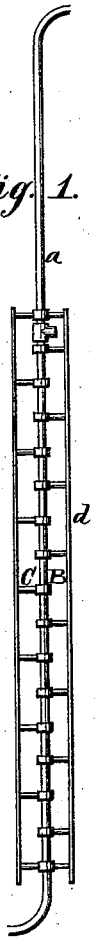


Fig. 2.

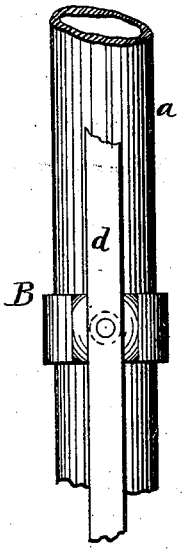
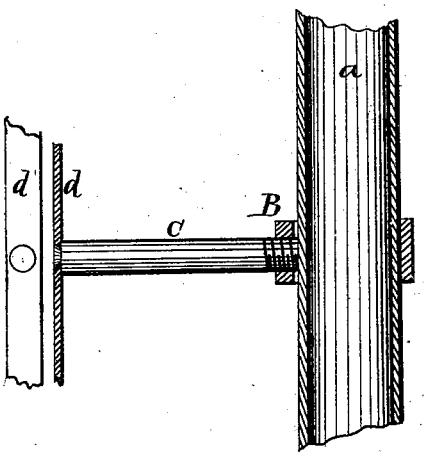


Fig. 4.



Witnesses:

George H. Mosserman

John Blaser.

Inventor:

Robert Avis Copeland.

UNITED STATES PATENT OFFICE.

ROBERT A. COPELAND, OF BAY CITY, MICH., ASSIGNOR TO ANN ELIZABETH COPELAND AND ALPHONS WALTHER, OF SAME PLACE.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **188,234**, dated March 13, 1877; application filed October 2, 1876.

To all whom it may concern:

Be it known that I, ROBERT A. COPELAND, of Bay City, in Bay county, and State of Michigan, have invented certain new and useful Improvements in the Mode of Constructing Ladders upon Stand-Pipes, to be used as Fire-Escape, and to facilitate the ascent and descent of firemen from the several stories of the building in the event of fire; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a front elevation of my improved apparatus; Fig. 2, a side view of a portion of the same on an enlarged scale; Fig. 3, a cross-sectional view; and Fig. 4, a vertical longitudinal section of my said apparatus.

To enable others skilled in the art to which my invention pertains to make and use the same, I shall now proceed to describe the construction and operation of the apparatus made in accordance therewith.

Ladders, or rounds, or other analogous devices, have heretofore been secured to stand-pipes as a means of fire-escape; but the contrivances used for this purpose were liable to many objections, which I deem unnecessary here to enumerate.

The object of this invention is to provide a cheap, effective, as well as a neat, strong, and durable structure, readily applicable to, and adjustable upon, stand-pipes of (within certain limits) variable diameter.

Such a structure will be seen in the figures above referred to, in which *a* represents the stand-pipe, upon which, at suitable distances apart, are placed metal rings or collars B, which are made of a size so that their interior diameter shall be somewhat larger than the exterior diameter of the stand-pipe. These collars may be made, as shown in the drawings, in one piece, or they may be made of two pieces hooked together, so that the tendency to force them apart will only the more firmly secure them together. Through this collar B, or, preferably, through a re-enforced portion of this collar, a screw-threaded hole is cut, into which fits the screw-threaded end of a wrought-iron bar, C, the other end of which is formed into a tenon, which fits into a corresponding hole in the wrought-iron rail *d*. This rail, it will be seen, is held in position parallel with the stand-pipe by means of a number of such bars, suitably distanced, fitting into a like number of collars, as before described.

It will be understood that these transverse bars, together with the rail on the one side, and the stand-pipe on the other, constitute, when properly adjusted, a perfect ladder or fire-escape.

The adjustment is easily effected in the manner as follows: The collars are slipped onto the end of the stand-pipe, and one after another secured in place, forming a rigid connection with said stand-pipe by turning the screw-threaded end of the round into and through the screw-threaded hole in the collar until it butts against the stand-pipe in the fashion of a set-screw. The tenoned end of the rounds may be made conical to form dovetail joints with, or may otherwise be formed into the side rail or foot-guard.

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

1. The fire-escape or ladder, substantially as herein shown and described, the same consisting of the combination, with a stand-pipe, of loose collars secured to said stand-pipe by rounds forming set-screws.

2. The combination, with a stand-pipe, of loose collars and side rails united with said collars and the stand-pipe by rounds forming set-screws, substantially as shown and set forth.

ROBERT AVIS COPELAND.

Witnesses:

GEORGE H. MOSEMAN,

JOHN BLASER.