

W. A. Shannon.

Fire Escape.

No. 2,959.
33,963.

Patented Dec. 17, 1861.

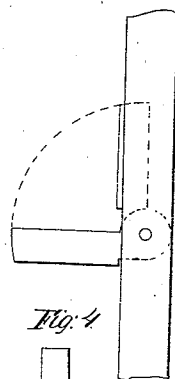
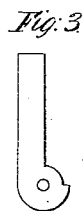
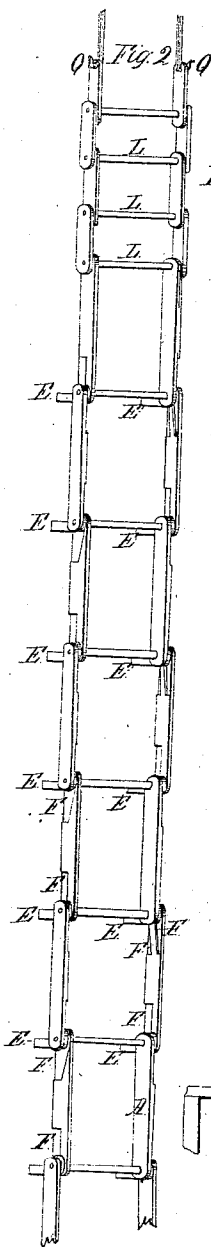
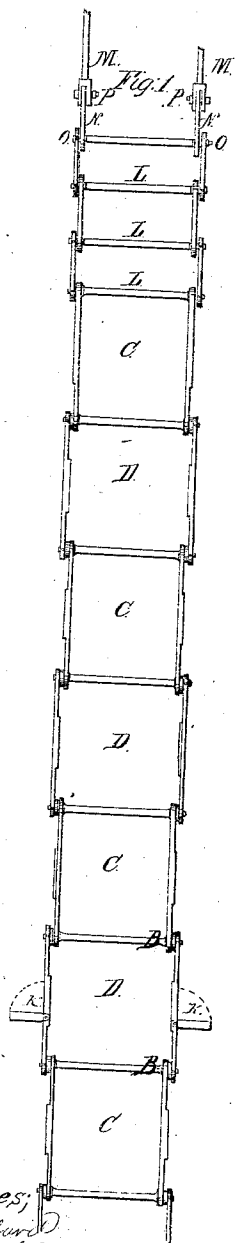
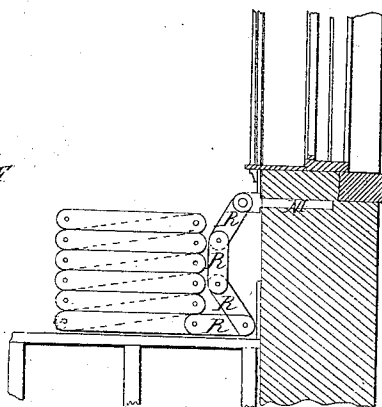


Fig. 6.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM A. SHANNON, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN FIRE-ESCAPE LADDERS.

Specification forming part of Letters Patent No. 33,963, dated December 17, 1861.

To all whom it may concern:

Be it known that I, WILLIAM A. SHANNON, of Washington city, District of Columbia, have invented a new and useful Improvement in Fire-Escape Ladders, designed to aid the escape of persons from a building after the ordinary communication with the street or yard has been cut off by fire; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 represents a full front view or geometrical elevation; Fig. 2, a perspective view showing the arms in their proper places and the sunken parts which receive them when folded up, both in the inside and outside sections; Figs. 3 and 4, full views of the arms, which alternate at each round; Fig. 5, arm belonging to Fig. 6; Fig. 6, a side view of outside section coming in front of a lower window; Fig. 7, side view and attachments when folded up and ready for use.

The nature of my invention consists in a ladder folded up in a zigzag manner (which may be used as a seat by placing a top thereon by means of pins) and fastened to the window-sill or wall underneath inside, or where the window comes to the floor, then to the floor, and which may be unfolded in case of emergency and let out of the window, section by section, for the purpose of escape.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

Take a sufficient number of pieces of wood or metal, according to fancy—say eighteen (18) inches long and of sufficient width and thickness to insure safety—rounded at the ends A, Fig. 2, in which holes are bored one and a half ($1\frac{1}{2}$) inch from the ends through which the rounds pass till they reach the shoulder B, Fig. 1, and on which the inside sections C, Fig. 1, work freely, the outside sections being riveted to the round D, Fig. 1, to prevent its turning under the foot and to keep the parts together. At either side and at each joint arms one-third the length of the section are placed between the inside and outside sections E, Fig. 2, which work freely on the rounds and are let into the wood or metal sides pieces F F, Fig. 2, in such

a manner as to conceal them from view when folded up, but when opened fall out by their own gravity, and remain at right angles to the main body and prevent it from coming too close to the wall E, Fig. 2. These arms differ in construction, as will be seen by comparing Figs. 3 and 4; but their operation is similar, both falling from the main body of the ladder and remaining at right angles thereto. Fig. 3, when extended, rests on a shoulder on the section immediately below it and falls from the outside of the fold, while Fig. 4, having to descend from the inside fold or angle, falls out and rests on a pin H, Fig. 4. The radius of the circle to one-fourth of this arm being smaller gives it room to work past the pin H till it reaches the shoulder, where it remains in its proper position. These arms are but absolutely required where they will rest on the face of the wall between the sill of one window and the cap of that below. To keep the ladder from entering the lower windows, where they occur, as the foot touches the round, arms fall out from the center of the side sections outside and remain at right angles thereto, I, Fig. 6. These arms, when open, K, Fig. 1, have a greater reach than the width of the window.

That part of the ladder going immediately over the window-sill is composed of three breaks or smaller sections of sufficient length to suit the window-sill and without arms or braces L L L, Figs. 1 and 2. These small sections, from the increased number of the rounds, afford greater facility and immunity from danger in getting out of the window on the ladder. The attachment is by means of bolts M M, Figs. 1 and 7, with mortises at the ends securely fastened inside the window-sill or the wall underneath, in which small arms with tenons work, N N, Fig. 1, and which are securely riveted to the top round O O, Fig. 1. The whole may be detached from the wall by withdrawing spring-keys P P, Fig. 1, from the small bolts which form the first joint. Another means of fastening is by hooks and eyes Q Q, Fig. 2, in which the first small joint works, the hooks being inverted when fastened into the wall.

When the ladder is ready for use, it presents the appearance as at Fig. 7, with the small sections arranged immediately behind the folded part R R R, Fig. 7. It is then paid

out the window, section by section, (the arms falling in their places as it goes out,) to the end.

I am aware of the patent granted in 1854 to Mr. Thomas Armitage for a ladder which in some respects resembles the one herein described; but it will be observed that while the arms of mine, which are designed to keep the ladder from the building, are folded in, so as not to obstruct its passage through the window, his are so constructed that they are liable to catch hold of the window-sill and caps, and when any considerable length is paid out it will be difficult to loosen them on account of the weight. I have also provided arms projecting from the sides to keep it from being pressed into the windows by persons passing down. Another advantage which mine has over the one referred to is that its

width is uniform, while his is so constructed that each section folds within the one preceding it, making it of a conical form, thus being liable to come to a point before it reaches the ground.

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

An improvement in the construction of a sectional ladder with arms or braces E E, Fig. 2, working freely on the rounds and gravitating to their position after the ladder has been passed freely and unobstructedly through the window, and the side braces K K, Fig. 1, which are designed to prevent the ladder from being pressed into the lower window.

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Witnesses:

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