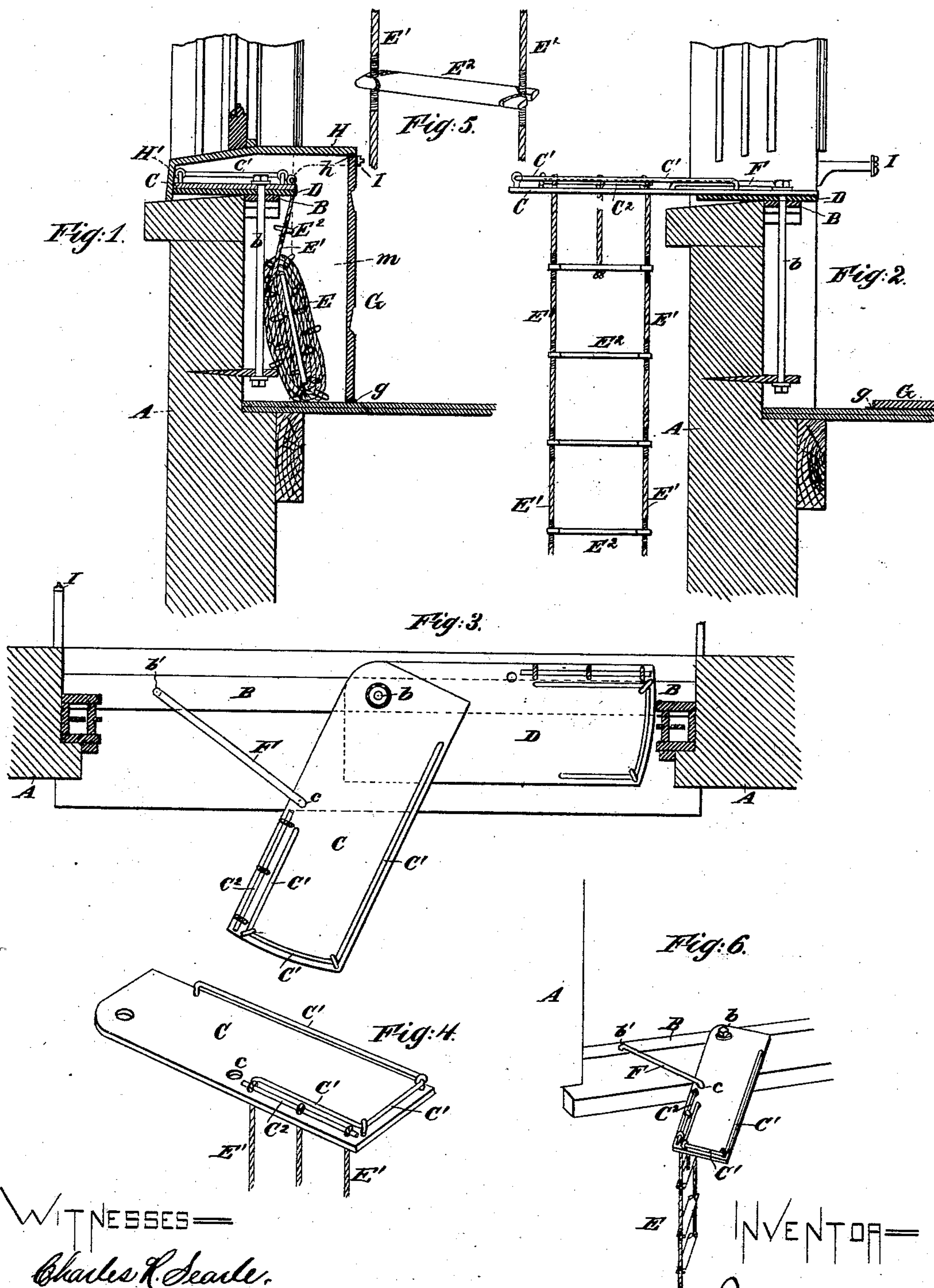


No Model.)

E. WILSON.
FIRE ESCAPE.

No. 279,900.

Patented June 19, 1883.



WITNESSES—

Charles K. Seale.

D. E. Stafford.

INVENTOR—

Eliza Wilson,
by her attorney
Thomas D. Stetson.

UNITED STATES PATENT OFFICE.

ELIZA WILSON, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 279,900, dated June 19, 1883.

Application filed April 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELIZA WILSON, residing at New York city, in the county and State of New York, have invented certain new and useful improvements in Fire-Escapes, of which the following is a specification.

The invention is of that class in which the necessary parts are attached to the building and kept in order for immediate service in case of an alarm of fire, when the ordinary means of exit from the building are not fully available. I employ flexible ladders outside. I provide across the bottom of a window a strong iron bar, with provisions for firmly securing it at each end. This affords a reliable pivot at the center, on which my turning parts may be mounted. The ends of this bar may be extended directly into the masonry of the walls, or be formed L-shaped or T-shaped, to afford facilities for convenient and reliable fastening to the substantial portion of the building. When not in use the ladder is stored in a space in the interior of the building, immediately under the window. I provide a hinged case, which snugly covers and conceals the ladder under all ordinary circumstances, with provisions for instantly opening the case and extending it upon the floor, leaving the ladder free to be instantly thrown from the window. The pivot or axis by which the swiveling arm is secured is extended downward below the stationary cross-bar, and finds a firm bearing at or near the floor. This gives a strong support for the swiveling arm, and also performs a useful function by affording a reliable fastening to the window by which to conveniently engage any other ropes or fire-escapes which may be at hand. In windows of sufficient width I provide two of the swiveling arms and two of the ladders, both working on the same cross-bar. What I have termed the "cross-bar" should be a strong arm of considerable width. A rail adapted to be conveniently grasped is strongly fixed thereto, and aids greatly by affording a convenient hold for people in getting upon the ladder and commencing to descend. It will be understood that what I have termed the "ladder" is a flexible construction capable of being packed in a small compass, and of being easily extended when required, as will be described farther on.

The accompanying drawings form a part of

this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a vertical section, showing the device folded up. Fig. 2 is a corresponding section, partly in section, showing the apparatus ready for use. Fig. 3 is a plan view of the window-sill and the adjacent parts. Figs. 4 and 5 are perspective views of details; and Fig. 6, a perspective view, showing the apparatus ready for use, as in Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

A is the substantial wall of the building, and B the cross-bar extending across the base of the window. A pivot-bolt in the center is marked *b*.

C is a swiveling arm, of iron or steel, pivoted to the bar B by the bolt *b*, and long enough to extend therefrom nearly to the side of the window. It is provided with a rail, *C'*, adapted to serve as a convenient hold for the hands of the operator in commencing the descent of the ladder. I provide a ladder of rope with rigid cross-bars of hickory. I do not limit the invention to any particular materials for the ladder. I will use the single letter E to designate this ladder as a whole, employing additional marks, as *E'* *E''*, when necessary, to indicate the various parts thereof. The upright portion *E'*, which I will term "rope," may be of manila, hemp, cotton, or various other materials, preferably treated with alum or some other preparation which renders it fire-proof. In some situations these uprights may be of wire cord or wire rope. In some cases they may be chain. I can make an excellent ladder with short links of iron flexibly connected for the upright portion.

The cross-bars *E''* may be iron, galvanized or not. This ropeladder should be long enough to reach to the ground, unless there are provisions for dividing the distance, as will be explained farther on. I propose to have the lower end made with an extra heavy cross-bar, to aid in insuring its prompt descent, and to resist disturbance by wind or other influences.

Instead of making the ladder E in all cases long enough to reach the ground, I propose, where there are facilities for providing landing-stages at intermediate points, to provide the upper stories with ladders long enough to

reach to and beyond the landing-stage—say half-way down—and that persons descending shall transfer at that point, and so descend to the ground.

5 The ladder E is attached to the arm C at one edge by extending the part E' through holes in the arm, and making them fast around a cross-bar, C², firmly secured, as shown.

F is a brace-bar with the ends bent at right 10 angles, as shown. One bent end matches in a hole, b', in the cross-bar B. The other bent end matches in a hole, c, in the swiveling arm C. The escape may be used without this attachment, and in cases of great haste it will 15 probably be so used; but where sufficient time is afforded, the application of the brace-bar F serves to hold the swinging arm C reliably against being moved while a person is getting upon the ladder. It may be very useful in 20 aiding timid persons to avail themselves of the invention.

Under ordinary conditions, when there is no occasion for the use of the invention, the part C is brought into the position shown in 25 Fig. 1, and the ladder E is drawn into the house and stowed in a cavity, m, provided within the building under the window. The ladder may and preferably should be wound around a piece of board or other simple reel 30 to avoid the possibility of entanglement. In case of fire, the reel with its contents may be simply thrown out of the window, and there being nothing to hinder it, the gravity will cause the mass to descend rapidly, unwinding 35 as it goes, and the board or other object on which it is wound will drop idly on the ground.

G is a door large enough to allow ample access to the cavity m. It is hinged at the base, as indicated by g.

40 H is a part hinged to the upper edge of G by hinges h. The width of this is just sufficient to fit easily within the window-frame. Its outer edge is formed with a hanging lip, H', which drops over the cleat on the window-sill as a protection against the weather.

I I are buttons turned on center screws, i, and made ornamental, if preferred. They hold the upright door G and its connections tightly in place under all ordinary conditions. When 50 a fire occurs it is the work of but a moment to turn the buttons I, raise the window-sash, lift the part H, and, drawing it and its connected parts inward, allow the parts to drop on the floor. This exposes the ladder E, which can 55 be instantly thrown out and the arm C extended while the ladder is unwinding, or immediately afterward.

I have as yet described only one of the arms C and its attached parts as provided for a win- 60 dow. The drawings show two. The second swiveling arm is marked D. It may be formed exactly like the first; or it may, if preferred, be somewhat shorter and slighter. It is extended in the opposite direction when not in 65 use. The second, like the first, is provided with a ladder, and both may be used extended

out from the same window at the same time, if preferred.

It is customary to place the windows in a building directly in line one above another. 70 There is a possibility that smoke or even flame may issue from one or more windows below the one from which my apparatus is to be used. My employment of two of these devices on opposite sides of the window allows the operator to 75 extend and use the one which is on the weather side, so that the wind will blow the smoke and flames away from that side, and allow him to descend comfortably. If desired in any case, both the sets of apparatus may be used at the same 80 time, care being taken to hold them at a sufficient distance apart. Sometimes one may be inclined toward one side of the window and the other toward the other side. At other times both may be inclined toward the same side of 85 the window, only taking care to hold them a sufficient distance apart so that they shall not interfere with each other. I esteem the presence of two sets of considerable advantage in aiding timid or weak persons to go upon the 90 ladder. Many persons who can descend with tolerable ease after they have once got upon the ladder will find themselves embarrassed in the act of starting. The presence of two sets of arms, C D, allowing both to be grasped, 95 will be of good service, even though the rope ladder be thrown down from only one.

The tendency of modern progress toward making buildings of immense height in the crowded portions of large cities may make it 100 expedient to subdivide the descents further than I have above suggested. The subdivisions may be made without any landing-stages—that is to say, a ninth-story window may drop a ladder reaching to the sixth. The occupants of 105 the ninth story may descend and reach a window in the sixth, and thence by a ladder in the same line, or preferably, under some circumstances, from another window in the same room, may descend three more stories to a window 110 in the third story, and thence by a third ladder descend to the ground.

One of the uses of the invention is to facilitate the climbing of firemen or other active persons from the ground or from the lower por- 115 tion of the building to aid ladies and children and infirm persons in descending by the ladder, or to aid by lowering them by some other means which they may carry up—that is to say, although this invention will ordinarily 120 have to be put in position by one or more persons who happen to be in the upper portion of the building when the fire breaks out, so soon as the ladder is in place for use, their labors may be supplemented by younger, more 125 active, and more experienced persons climbing from below up the ladder thus dropped. Thus a sixth story or other high portion of the building, which could not otherwise be reached, may be made accessible to firemen, 130 who may climb with other rope ladders or with other fire-escapes, or with simple ropes,

by which they may from the same window, or, preferably, from another window, lower children and others rapidly to the ground.

I extend the pivot-bolt *b* quite down across the space *m*, partly for increased strength and partly to afford a convenient attachment close to the window by which other fire-escapes or simple ropes may be hitched in emergencies.

Several different windows at the same floor, or all the windows, may be provided with my fire-escapes, according as the circumstances may render expedient in different cases.

Modifications may be made in the forms and proportions within wide limits. Parts of the invention may be used with advantage without the whole. Where two arms, C and D, are employed, they may be pivoted to separate bolts or pivots *b*, mounted either close together near the center or wide apart near the respective ends of the cross-bar B, if preferred in any case.

I claim as my invention—

1. The fire-escape described, having a cross-bar, B, securely fixed to the building and extending across the bottom of the window, in combination with a ladder connected to a pivoted arm, the pivot-bolt of which passes through said cross-bar B, and the ladder arranged to be folded or rolled and housed within the building when not in use, and to be lowered on the outside when required, as herein specified.

2. In combination with the wall A of the building, and cross-bar B, strongly fixed thereto in the base of the window, and with a flexible ladder, E, the swinging arm C, pivoted to the said cross-bar B, and serving as a connection between the ladder and the bar, adapted to serve as herein specified.

3. In combination with a fire-escape permanently attached to a building, a folding case, as G, hinged at *g*, and H, hinged to G at *h*,

and adapted to inclose the parts when not in use, and to conveniently unfold to expose the parts for use, the part H having a weather-flange, H', and serving as a sill for the window as well as a housing for the working parts of the escape, substantially as herein specified.

4. In combination with the cross-bar B, the swinging arm C, and the escape-ladder, the pivot-bolt *b*, extending down into the box *m*, to afford means for attaching other escape devices, as set forth.

5. The brace F, in combination with the swinging arm C, ladder E, pivot *b*, cross-bar B, and wall A, as herein specified.

6. In combination with the flexible ladder E, adapted to be coiled or folded in a small compass and extended at will from a window, the bolt or pivot *b*, standing in the space *m*, provided for the folded ladder, and arranged to serve the double functions of a permanent support for the swiveling arm C and ladder E, and means of attaching other ropes or fire-escapes, substantially as herein specified.

7. The fire-escape described, having the permanently-fixed cross-bar B in the base of the window, in combination with the swinging arm C and flexible ladder E, attached thereto, and the additional swinging arm, D, adapted to serve as a support for the person while getting upon the ladder E, and also as a means for attaching a second flexible ladder to serve as an additional means of escape, all substantially as herein specified.

In testimony whereof I have hereunto set my hand at New York city, this 20th day of April, 1883, in the presence of two subscribing witnesses.

ELIZA WILSON.

Witnesses:

B. E. D. STAFFORD,
H. A. JOHNSTONE.