

(No Model.)

2 Sheets—Sheet 1.

W. T. DAVIS.
FIRE ESCAPE.

No. 264,254.

Patented Sept. 12, 1882.

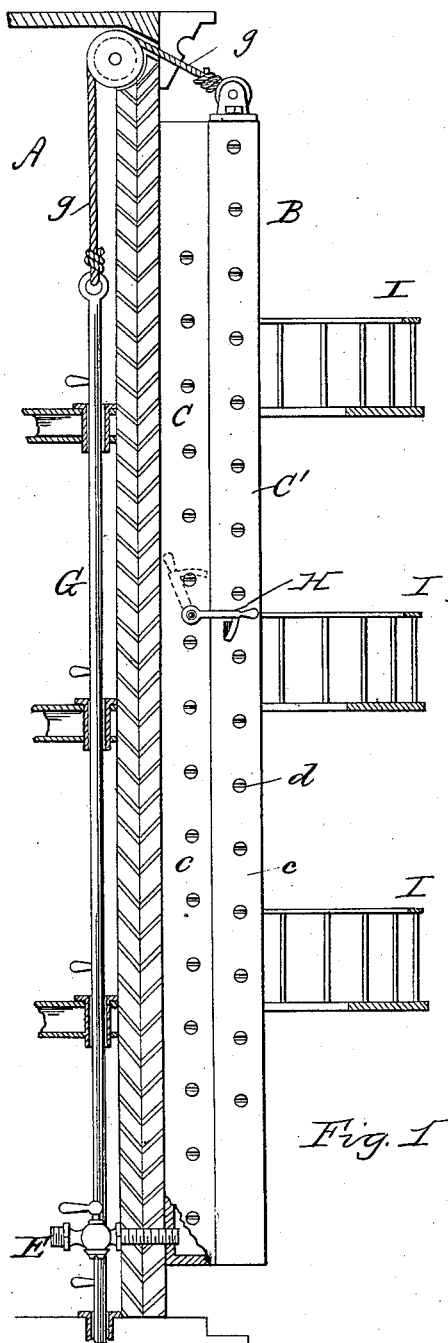
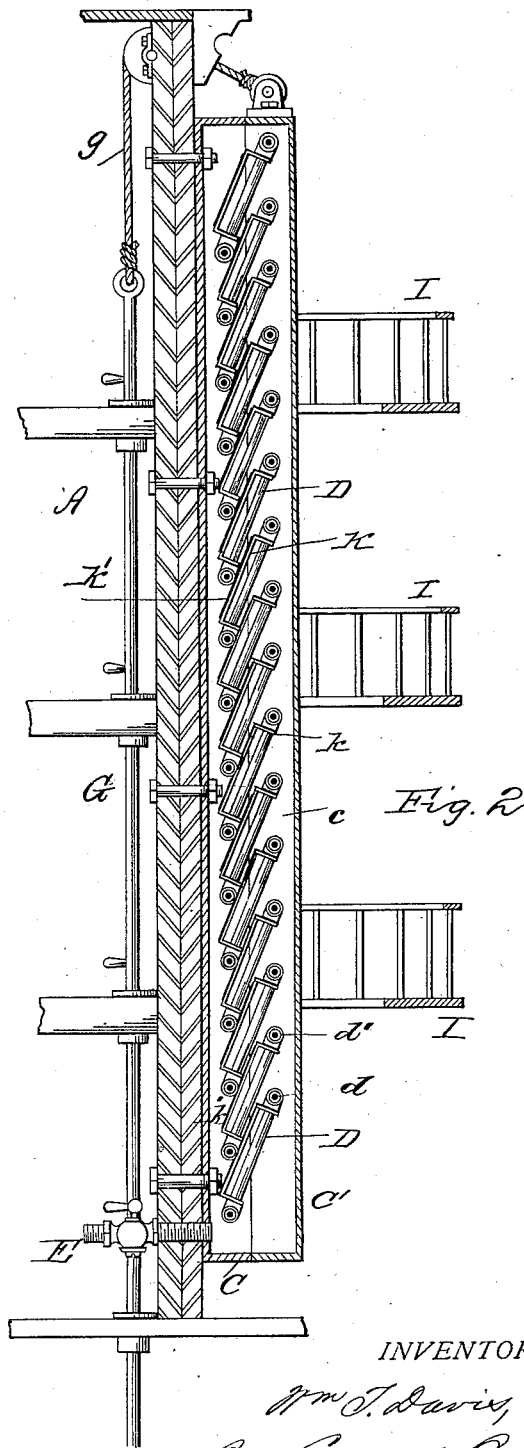


Fig. 1

WITNESSES:
S. J. Van Stavern
W. B. Chaffee



INVENTOR,
Wm T. Davis
By *Conroy Bros*
ATTORNEYS.

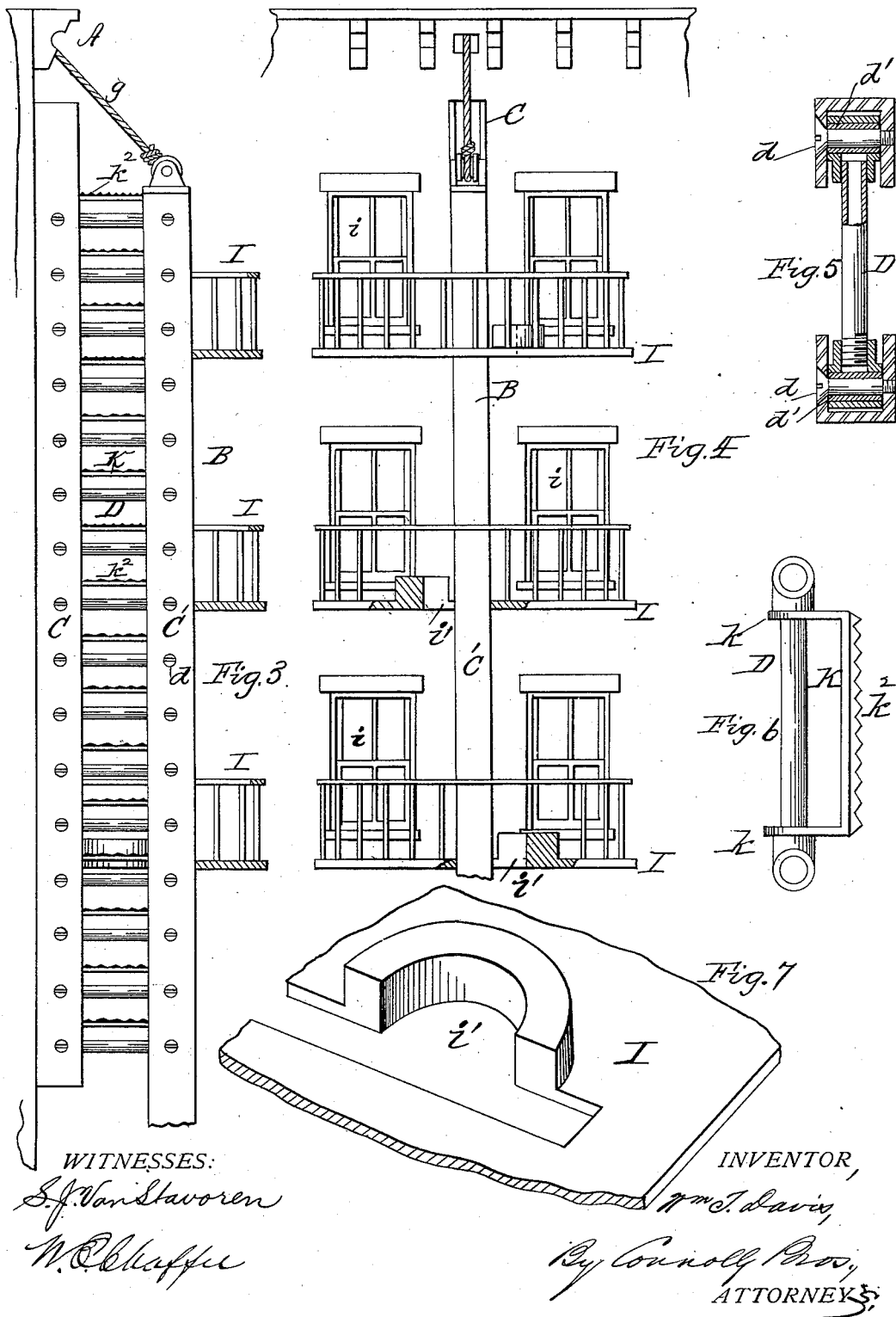
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2 Sheets—Sheet 2.

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Patented Sept. 12, 1882.



UNITED STATES PATENT OFFICE.

WILLIAM T. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 264,254, dated September 12, 1882.

Application filed November 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. DAVIS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation, partly in section, of my improved fire-escape ladder. Fig. 2 is a longitudinal vertical section thereof. Fig. 3 is an elevation, showing ladder opened or in position for use. Fig. 4 is a front view, partly in section, of the same. Fig. 5 is a section of one of the rounds of the ladder. Fig. 6 is an elevation of one of said rounds; and Fig. 7 is a broken perspective of a balcony-platform with stepping-ridge or raised projection surrounding the passage-way thereof.

My invention has relation to fire-escape ladders; and my improvements consist in the peculiar construction and combination of parts hereinafter fully set forth.

My invention embraces a folding ladder having one stationary or fixed side and one movable side, the rounds connecting the same being swiveled to said sides to permit the necessary movement for opening and closing. The sides consist of hollow boxes, and the rounds are composed of pipes having cross-heads at either end, forming, with the shafts which pass through them, swivel-joints. When the sides are folded together they form an inclosure for the rounds, a connection being provided for introducing steam to heat the rounds and sides and melt any adhering ice or snow. The movable side is connected with a counter-balance or equivalent device for facilitating its movement, and is arranged so that it can be locked to prevent intrusion when not required for use. When the sides are folded the weight of the movable side is sustained by the fixed side and the counter-balance. When the ladder is opened the movable side rests upon the ground or a support thereon. The fixed side is at all times supported by the wall of the

building to which it is attached. Access to the ladder is designed to be had from balconies or platforms which do not support the ladder, nor are not supported by it. The passage-ways through the balconies are on alternate sides of the ladder, so as to avoid a straight descent or clear fall from the top to the bottom story.

Referring to the accompanying drawings, A designates a building to which my improved fire-escape is applied. By preference said building should be made with a vertical recess in its wall for the reception of the escape, so that when the ladder is closed it shall be flush with said wall. This is not a necessary feature, but only a desirable one to preserve the symmetry of the wall.

B represents the ladder, which is composed of two sides, C and C', respectively, and swiveled connecting-rounds D D. The sides consist of hollow boxes composed by preference of channel-iron. The rounds are pieces of pipe having at either end T-couplings, forming cross-heads. Through these couplings, and through the side walls, c c, of the sides C C', pass rods or screws d d. Inside of the couplings are brass collars or bushings d' d', which may project at either end beyond said couplings, so as to prevent the latter from binding against the side walls, c c. The couplings form, with the rods or screws d d, swivel-joints for the rounds, thus enabling the side C' to be moved, in the manner of a parallel ruler, to and from the stationary side C, the latter being secured in any suitable manner to the side of the building A. When the ladder is opened the rounds are horizontally disposed and the side C' rests on the ground or upon a support fixed therein. When the ladder is closed the side C' rests against the side C, forming an inclosure, within which the rounds rest, said rounds then standing nearly vertical, or inclining but slightly from the perpendicular. When thus closed steam may be admitted from a communicating pipe to heat the rounds and sides and melt any adhering ice or snow. To facilitate the opening and closing of the ladder, the movable side may be connected by a wire rope, g, or equivalent rod, with a weight, G, which

counterbalances it. When the ladder is closed it may be securely fastened by a latch or lock, applied as at H, so as to prevent burglarious or other unauthorized intrusion.

5 I I represent balconies, upon which windows *i i* lead out, and from which access is had to the escape. These balconies are supported on the walls of the building A. The ladder passes through the floors of said balconies, the passage-ways *i' i'*, for persons descending the ladder, alternating from side to side of the latter—
10 that is to say, if the passage through one balcony be on the right of the ladder, the passage-way through the balconies next above and below it will be on the left of the ladder. By
15 this arrangement persons using the ladder have to step off onto each balcony and go around to the opposite side of the ladder for the next flight or story. By this arrangement
20 a clear opening from the top to the bottom is avoided, so that a person descending the ladder can, at most, fall only from one balcony to another.

25 Treads may be provided for the rounds, as shown. Such treads consist of metallic plates K, with end lugs, *k k*, through which the rounds pass. Nuts on the rounds may be employed to jam up against the lugs and hold the treads

firmly in place. The treads are elevated sufficiently above the rounds to allow the latter to be grasped below the former by passing one's hands between them. The upper surfaces of the treads are covered with rubber, either corrugated or plain, as shown at *k' k'*, respectively, to prevent slipping thereon. 35

What I claim as my invention is as follows:

1. A folding ladder having hollow sides, which form, when the ladder is closed, a steam-chamber, in combination with a cock, E, for admitting steam thereto to melt adhering ice or snow, substantially as set forth. 40

2. The combination of the sides C C', rounds D D, having T-couplings at either end, rods or screw-shafts *d d*, and collars or bushings *d' d'*, substantially as shown and described. 45

3. The combination, with the rounds D D, of treads consisting of plates K, with end lugs, *k*, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of November, 1881. 50

WILLIAM T. DAVIS.

Witnesses:

JOHN W. STEWARD,
S. J. VAN STAVOREN.