

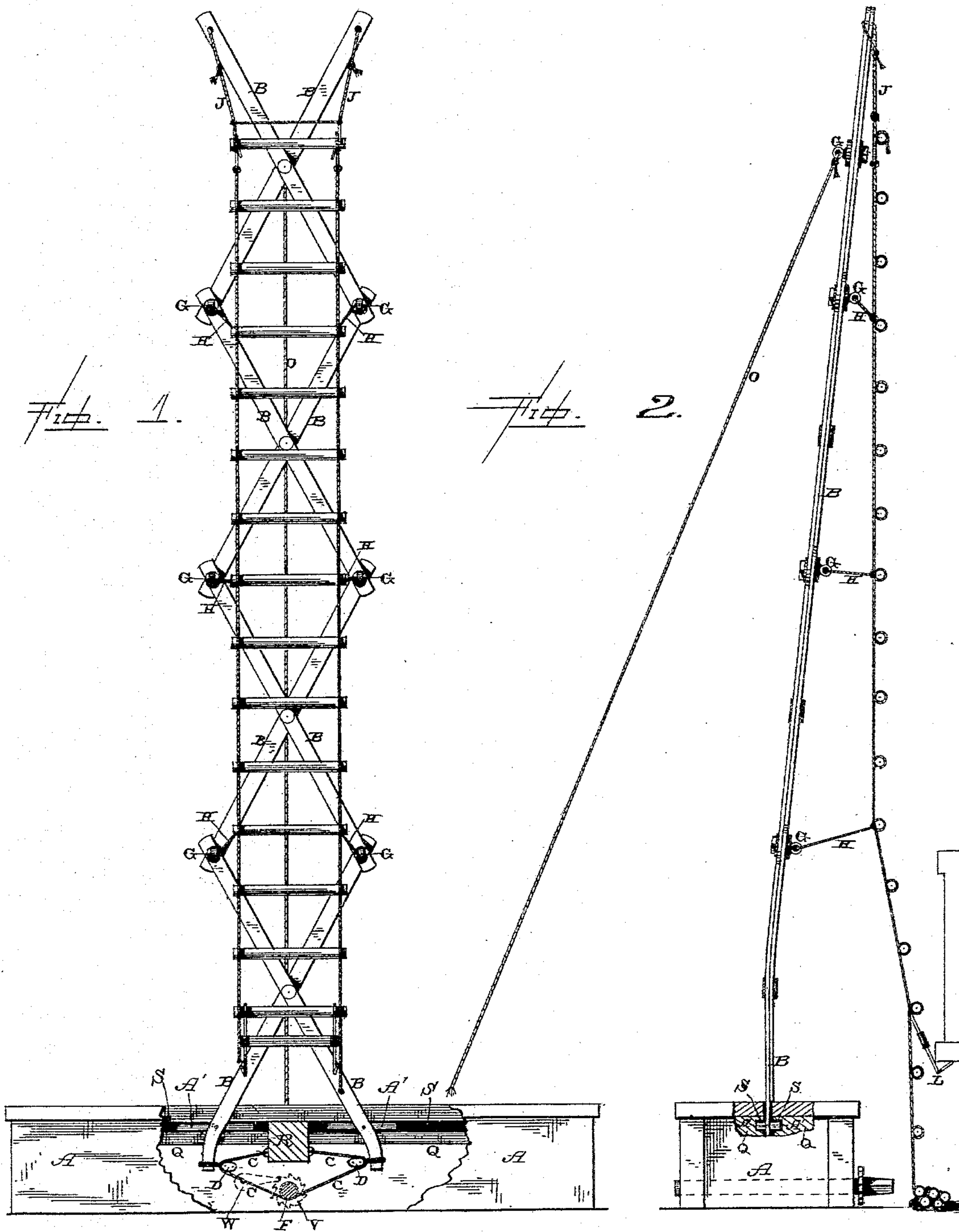
(No Model.)

G. LARKIN.

FIRE ESCAPE.

No. 356,591.

Patented Jan. 25, 1887.



Witnesses.
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UNITED STATES PATENT OFFICE

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 356,591, dated January 25, 1887.

Application filed December 1, 1886. Serial No. 220,396. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LARKIN, of Seymour, in the county of Outagamie and State of Wisconsin, 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, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in extension fire-escapes; and it consists in the combination of a suitable frame-work, an operating-shaft journaled therein, ropes which are connected to the shaft, and which, after being passed around pulleys connected to the lower bent arms, are fastened to the frame-work, blocks to which the lower bent arms are pivoted and which slide back and forth in suitable grooves, the arms which comprise the lazy-tongs or extension, the eyebolts which secure the arms together at their ends, the ropes connected to the eyebolts at one end and to the ladder at the other, the ladder, which is connected to the upper ends of the extension, and a rope, wire, or chain, which is connected to the upper end of the extension for steadying the lazy-tongs while being raised and lowered, all of which will be more fully described hereinafter.

The object of my invention is to connect a ladder to the extension or lazy-tongs, so that the ladder is raised against the side of the building at the same time that the extension is run up, to brace the lazy-tongs while in a raised position by means of ropes connected to the ladder, and to hold the ladder against any lateral movement by means of hooks, which are connected to it and hooked under a projection upon the building.

Figure 1 is a front elevation of an extension fire-escape to which my invention is applied, a portion of the frame-work being shown in section. Fig. 2 is a side elevation of the fire-escape.

A represents a suitable frame-work of any suitable description, and which is mounted upon wheels, so as to be readily drawn from place to place, and which frame has a suitable slot made through its top, where the lower ends of the two lower arms of the lazy-tong

frame or extension pass through. Placed just under the top of the frame, and upon opposite sides of the slot, are the sliding blocks A', between which the lower ends of the arms are pivoted. These blocks, being held in suitable guides, Q, or ways, serve as supports to the entire lazy-tongs and the ladder when in a raised position, and as guides to the lower arms in their movements back and forth in the slots. The lower ends of these arms B are bent or curved, as shown, so that the strain of the two ropes C may be applied more directly thereto, and thus the arms are caused to operate the other portions of the lazy-tongs more readily and easily than could be done if the ends of these arms were straight. Running lengthwise of the frame are the four timbers Q, which have their inner ends to rest upon the central cross-timber, R, and their outer ends to rest upon the end pieces of the frame.

Formed on the inner sides of the four timbers Q are the grooves S, in which the four blocks A' slide back and forth, according as the lazy-tongs are being extended or contracted. The lower ends, B, of the lazy-tongs pass between the sliding blocks, as shown in Fig. 1, and are pivotally connected thereto by means of suitable pivotal bolts. The ends of the timbers Q are sunk in suitable mortises in the central cross-timber, R, and the ends of the frame, so that they are securely held in their proper position by the top of the frame when secured thereon. To each of these curved ends is fastened a pulley, D, around which the ropes C are passed. The inner ends of the ropes are fastened to the shaft F, so that when the shaft is made to revolve, by means of a crank applied to one end, the two ends of the arms B are drawn toward each other, and thus the lazy-tong frame or extension is made to rise upward in front of the building, for the purpose of elevating the ladder.

The ropes C are wound around the shaft in opposite directions, so that as the shaft is made to revolve in one direction the lazy-tong frame is made to shoot upward, and when the shaft is turned in the opposite direction the ropes are relaxed, so that the weight of the frame and the ladder will cause them to descend. Placed upon the outer end of the shaft is a ratchet-wheel, V, with which the pawl W, which is pivoted upon the frame, engages. This ratchet-

wheel and pawl are provided for the purpose of holding the lazy-tongs in a raised position by preventing the cords which pass around it and have their ends secured to the lower ends of the
5 tongs from becoming relaxed by the shaft revolving when weight is placed upon the ladder.

The ends of the pieces which comprise the lazy-tong frame are pivoted together by means of eyebolts G, which are passed through the
10 ends of the pieces, and fastened in place by means of nuts, which are applied to the ends of the bolts, as shown. Suitable washers are applied to the bolts upon each side of the ends of the pieces which comprise the frame, and these
15 washers serve to strengthen and brace the parts at the same time that they allow the ends of the parts to move without being worn or injured by the bolts. The upper ends of the two upper pieces of the lazy-tongs are made to incline to-
20 ward the building upon the side to which the ladder is attached, and these upper ends are made to catch under a window-frame, or some projecting part of the building, so as to brace and steady the lazy-tongs in position.

25 The upper end of the ladder is fastened to a rope, wire, or chain, J, which is secured to the extreme upper ends of the lazy-tongs, and then the ladder hangs down from that side of the lazy-tongs which is inclined toward the build-
30 ing.

The ends of the different pieces which comprise the lazy-tongs are fastened together by means of eyebolts G, to which the ropes H are fastened at one end. The other ends of the ropes
35 H are fastened to the ladder, and these ropes serve to brace and strengthen the lazy-tongs while in a raised position. These ropes are arranged in pairs, so as to be attached to each side of the ladder and the lazy-tongs, and they
40 increase in length from the top downward, owing to the fact that the ladder is farther away at its lower end from the base of the lazy-tongs than at any other part, owing to the inclination of the lazy-tongs. After the lazy-tongs have
45 been run up the end of the ladder is drawn

outward away from the lazy-tongs, so as to draw the ropes H taut, and then the ladder has its lower end fastened in position by means of the hooks L, which are connected to one of its rounds, and which hooks are made to catch
50 over a window-sill or upon some part of the building.

The last joint of the lazy-tongs is formed by means of an eyebolt, which has its head extended outward on the opposite side of the
55 lazy-tongs from the one to which the ladder is attached. To this eyebolt is fastened a rope, O, by means of which the upper portion of the lazy-tongs can be steadied and braced while being raised or lowered, and after it is in a raised
60 position. As the ladder exerts a pull on one side of the lazy-tongs another pull is exerted upon the opposite side by the rope O, and thus the two strains upon the lazy-tongs are made to equalize one another.
65

Having thus described my invention, I claim—

1. The combination of the frame-work, the arms B of the lazy-tong frame, having their lower ends bent and pivoted to blocks which
70 slide in suitable grooves on the inner side of the supporting-timbers Q, the shaft, the ropes, and the pulleys connected to their lower ends with the ladder, the eyebolts G, connected to the lazy-tong frame, the ropes H, connected to the eye-
75 bolts, and the ladder, substantially as shown.

2. The combination of the lazy-tong frame, a suitable frame-work upon which it is mounted, and a mechanism for extending it with the lad-
80 der, the eyebolts G, the ropes H, and the rope connected to the upper joint of the lazy-tong frame, whereby the ladder is steadied while being extended or contracted, substantially as described.

In testimony whereof I affix my signature in
85 presence of two witnesses.

GEORGE LARKIN.

Witnesses:

DORMAN H. STEVENSON,
G. H. FEWING.