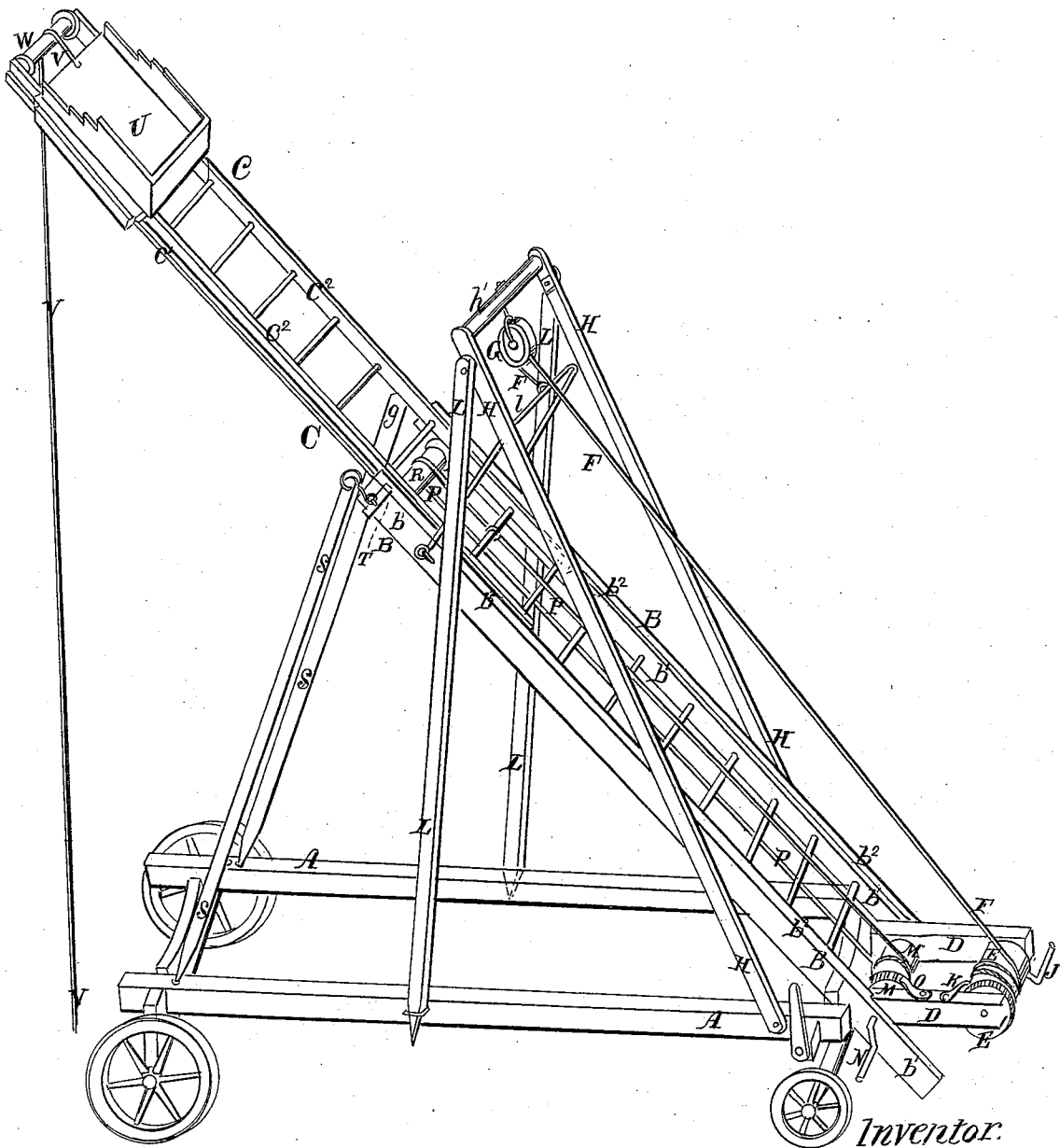


*H. T. Hartman,
Fire Escape*

No. 92,527.

Patented July 13. 1869.



Witnesses.

Theo Fusch
& A Service

Inventor:

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United States Patent Office.

H. T. HARTMAN, OF NORWOOD, VIRGINIA.

Letters Patent No. 92,527, dated July 13, 1869.

IMPROVED FIRE-ESCAPE LADDER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, H. T. HARTMAN, of Norwood, in the county of Nelson, and State of Virginia, have invented a new and improved Fire-Escape Extension-Ladder and Life-Car; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The figure is a perspective view of my improved ladder extended, and with the life-car attached.

My invention has for its object to furnish an improved apparatus to facilitate the escape of persons and the rescue of property from burning buildings in cases where the ordinary means of egress have been cut off by the fire; and

It consists in the combination and arrangement of the frame-supporting braces and extension parts of the ladder with each other; in the combination and arrangement of the crank-shaft, rope, pulley, and bail, with the supporting-frame, and with the lower section of the ladder; and in the combination of the life-car, constructed as described, rope and roller, or pulley, with the extension parts of the ladder, the whole being constructed and arranged as hereinafter more fully described.

A is the truck-frame which is securely attached to the bolsters of the truck, and to the forward end of which the lower part of the lower section B, of the ladder, is pivoted. For ordinary purposes I usually make the side-pieces *b'*, of the lower section B, thirty feet long, six inches wide, and one and a half inch thick. The actual dimensions of the ladder will vary with the purposes for which each ladder is built, and the locality in which, and the circumstances under which, it is designed to be used. The side-pieces *b'* are made with a flange, *b''*, formed upon or attached to their upper edges and projecting inward, as shown in the drawing.

C is the upper or extension part of the ladder, which is made of such a breadth as to fit between the side-pieces *b'*, of the section B, above the rounds. *c'* is a flange formed upon or attached to the lower edges of the side-pieces *c'*, of the section C, so as to fit beneath the flanges *b''*, of the section B, and thus form guides and guards to the said section C as it slides up and down.

D are arms firmly and securely attached to the lower parts of the sides of the lower section B, between the ends of which is pivoted the crank-shaft E.

F is a rope, the lower end of which is secured to the shaft E, and which passes thence over the pulley G suspended from the cross-bar *h'*, of the frame H, and its other end is attached to the bail I, the ends of which are pivoted to the upper part of the side-pieces *b'*, of the section B, so that by operating the crank J, of the crank-shaft E, the upper end of the ladder may be raised or lowered, as desired.

The shaft E is held in the position to which it has been revolved by the pawl K, which takes hold of the teeth of a ratchet-wheel formed upon or attached to said shaft E.

The lower ends of the side-pieces of the frame H are pivoted to the forward ends of the truck-frame A. The upper end of the frame H is supported at any desired elevation by the braces L, the upper ends of which are pivoted to the upper end of said frame, and their lower ends rest upon the ground, or in sockets formed in or attached to the truck-frame A.

M is a crank-shaft pivoted between the inner ends of the arms D, which is operated by the crank N, and held in position by the pawl O taking hold of the teeth of a ratchet-wheel formed upon or attached to the said shaft.

P is a rope which is passed once or twice around the shaft N, which then passes up above and below the rounds of the ladder, and around the roller or pulley R, pivoted to the upper end of the section B, and the ends of which are attached to the lower end of the section C, either by being secured to one of its rounds, or in some other convenient and substantial manner; so that by revolving the shaft M in one direction the section C will be raised or extended, and by revolving it in the other direction, the said section will be lowered.

When raised the ladder receives additional support from the braces S, the upper ends of which are pivoted to the upper end of the section B, and their lower ends rest upon the ground, or in sockets formed in the truck-frame A, according to the elevation of the ladder.

The ends of the plates T, that strengthen the points at which the braces S are pivoted to the section B, are bent over the edges of the side-pieces of said section, as shown in the drawing, so as to strengthen the flanges *b''* where exposed to the strain of supporting the weight of the section C when extended.

U is the life-car, which is formed with as many sets of flanges or guides upon its lower side as there are sections to the ladder, so that it may slide up and down the entire length of the ladder, passing from one section to another without difficulty.

The car U is raised and lowered by the rope V attached to the said car, and which passes over the pulley or roller W pivoted to the upper end of the section C. The ladder is represented as being made of two sections, but more than two may be used if desired.

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

1. The combination and arrangement of the frame H, supporting-braces L, extension parts B and C of the ladder and supporting-braces S, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination and arrangement of the crank-shafts E and M, ropes F and P, pulleys G and R, and bail I, with the supporting-frame H, and with the lower section B of the ladder, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the life-car U, constructed as described, the rope V, and roller or pulley W, with the extension parts B and C of the ladder, substantially as and for the purpose herein set forth.

H. T. HARTMAN.

Witnesses:

AJAX M. STRATTON,
WM. H. BOYD.