

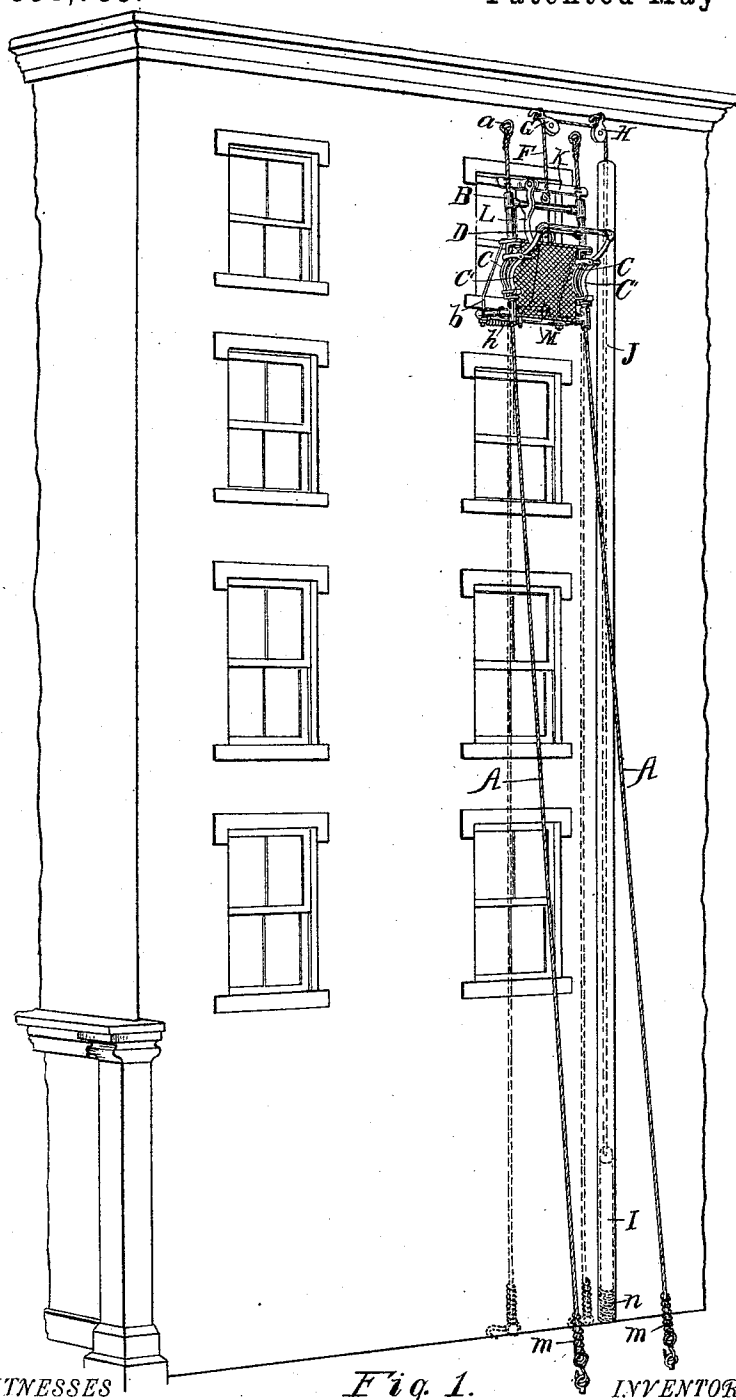
(No Model.)

2 Sheets—Sheet 1.

L. L. LEWIS.
FIRE ESCAPE.

No. 538,735.

Patented May 7, 1895.



WITNESSES

H. E. Wheeler
J. C. Drake.

Fig. 1.

INVENTOR

Lloyd L. Lewis,

By R. B. Wheeler & Co.,

Attorneys.

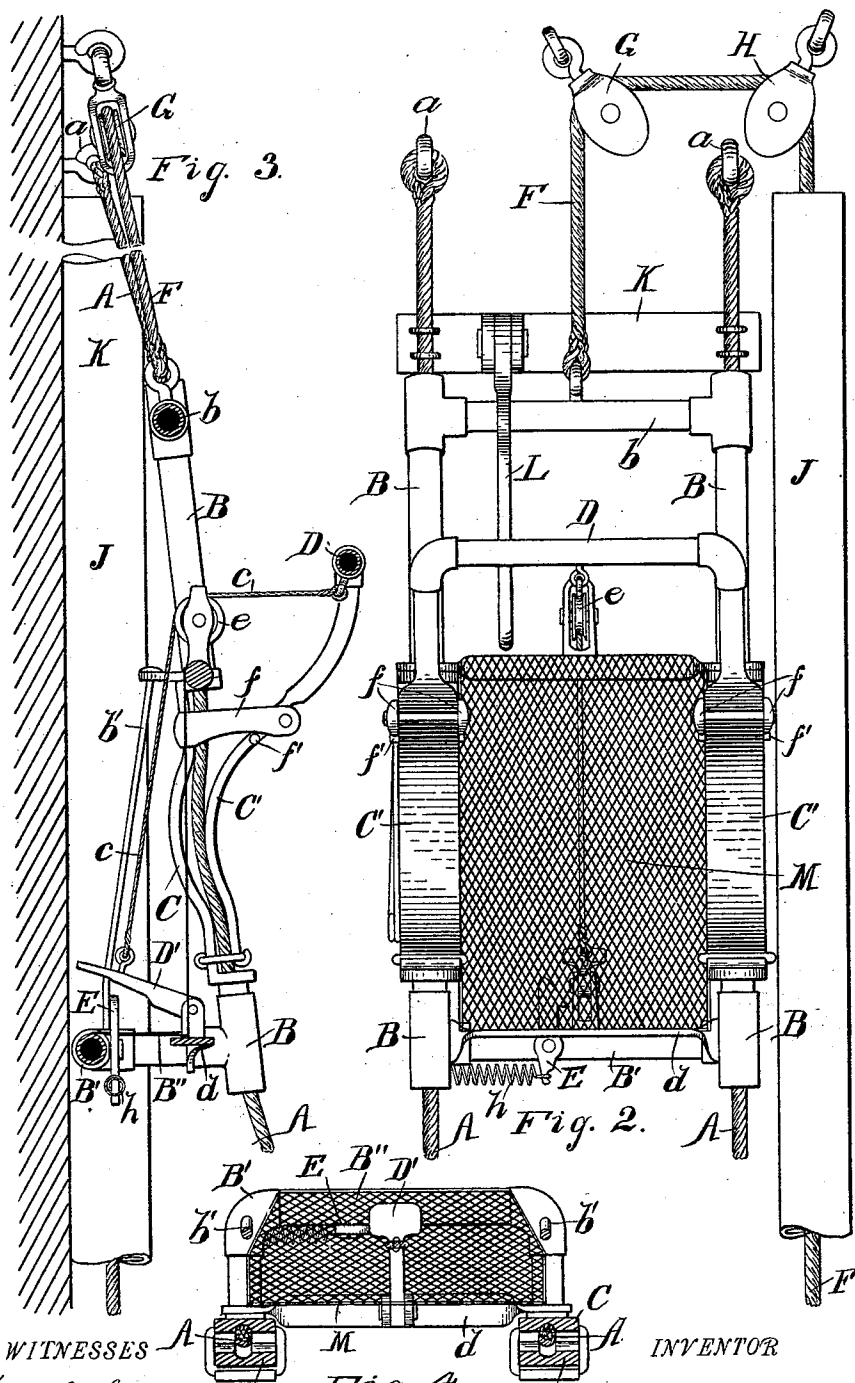
(No Model.)

2 Sheets—Sheet 2.

L. L. LEWIS.
FIRE ESCAPE.

No. 538,735.

Patented May 7, 1895.



WITNESSES
H. B. Wheeler,
J. C. Drake.

Fig. 4

INVENTOR
Lloyd L. Lewis,
By R. B. Wheeler & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

LLOYD L. LEWIS, OF PLYMOUTH, MICHIGAN.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 538,735, dated May 7, 1895.

Application filed July 7, 1894. Serial No. 516,877. (No model.)

To all whom it may concern:

Be it known that I, LLOYD L. LEWIS, a citizen of the United States, residing at Plymouth, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Fire-Escapes; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in fire-escapes and consists in a certain construction and arrangement of parts as fully hereinafter set forth, the essential features being pointed out particularly in the claims.

The object of this invention is to provide a simple, safe and effective vehicle of escape from a burning building affording a rapid means of descent but controllable at will and in which the arrangement is such as to return the vehicle or car to its point of starting after having discharged its passengers. This object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a general perspective view of a portion of a building, showing my improved fire-escape attached thereto. Fig. 2 is an enlarged elevation of the reciprocal car and its supporting-cables. Fig. 3 is a vertical section through Fig. 2. Fig. 4 is a central horizontal section through the car.

Referring to the letters of reference A designates the two main cables upon which the car is mounted to slide vertically and which guide said car in its vertical movements. These cables are made of steel wire and are secured at their upper ends to eye-bolts *a* anchored in the wall of the building and when in their normal position depend in front or on each side of a row of windows, as shown by dotted lines in Fig. 1.

The car which serves as the vehicle of escape is composed of a metal frame which consists of vertical tubes B on each side, that are coupled at the top and bottom by the cross pieces *b* and *d* respectively, and of a right angled portion B' extending inward from said

vertical sides at their lower ends forming a ledge or platform upon which the person or persons in descent may stand, said platform being supported by the side rods *b'* extending from the upper portion of the frame and is covered with a wire grating B'' more clearly shown in Fig. 4. Interposed between the end portions of the vertical side tubes of the frame is a set of clamping jaws consisting of fixed curved jaws C, and hinged jaws C' which are curved concentric with said jaws C and are adapted to lie therein, the adjacent faces of the jaws being provided with registering concaves, as shown in Fig. 4, that receive the cables A which pass between said jaws. The upper ends of said hinged jaws curve outward and are coupled by a cross rod D, whereby they are caused to act in unison. Attached to said rod D is a wire rope *c* which passes over a small pulley *e* on the frame and extending downward is attached to a foot lever or treadle D' pivotally mounted on the platform B', by which means when said treadle is depressed, said rope *c* is drawn upon to actuate the jaws so as to clamp the cables A between them to regulate the descent of the car or stop it at any point in its descent, as desired, the hinged jaws in their movement working between the guide plates *f* that project from the fixed jaws and extend on each side of the movable jaws to keep said jaws in alignment. To prevent the hinged jaws from rising when the rope is clamped, and to take the strain off from its hinge, it is provided with laterally projecting pins *f'* which bear against the under edge of said guide plates.

To provide for retaining the jaws in a clamped position upon the cables A, a catch E is pivoted to the platform of the car, which is actuated by a spring *h* and which is adapted to engage and lock the treadle D' when fully depressed so as to hold the jaws firmly clamped upon the cables A and prevent a vertical movement of the car in either direction, the treadle being released by disengaging said catch.

The car is suspended by the cable F one end of which is attached to the upper cross bar *b* thereof, said cable passing through the pulley blocks G and H secured to the building and having the weight I attached to the opposite end thereof which depends within

the vertical tube or casing J in which said weight I is adapted to travel vertically. The weight I is sufficiently heavy to overbalance the car and normally retain it in an elevated position, as shown in Fig. 1, the car being arrested in its upward movement by a cross-head K', secured to the cables A and which is so located as to stop the car on a line with the upper window of a building. To this cross-head is pivoted a depending lever L having a catch *i* thereon that engages the cross bar *b* of the car and prevents the accidental descent of the car before the occupant is ready.

In case of fire, the car is entered from the window and the lever L is thrown to disengage the catch *i*, when the car will descend, which descent is regulated by depressing the treadle D' so as to cause the jaws to grip the cables A, as before described. If said cables have not been drawn out from the face of the building by some one upon the ground and secured at their lower ends as shown in Fig. 1, the first to descend in the car will do this, when the car will pass free from the building and will be returned by the weight I when relieved of its passenger into position for another descent.

In case there are a number of persons in the lower windows the cables A may be swung in to bring the car close to said windows, so that those below may be taken onto the car as it descends.

To prevent the car from striking with too much force when it reaches the bottom of the cables A said cables are provided with coiled springs *m* at their lower ends that break the force of the car in its descent. There is also employed a coiled spring *n* in the bottom of the tube or case J which eases the fall of the weight I, whereby the car is gently returned to its elevated position, shown in Figs. 1 and 2.

M designates a wire-screen which extends transversely between the sides of the car frame forming a back therefor and which serves to prevent the occupant of the car from falling therefrom.

It will now be understood that by means of this improved device, a safe and rapid descent may be made from a burning building and, that by reason of the car being self returnable after each descent it is automatically returned to a position for further service.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fire escape, the combination of the vertical cables depending free from the building, the car mounted to slide vertically thereon and having clamping jaws through which said cables pass, the supporting cable attached to the car so that said car is suspended therefrom, said cable passing through suitable pulleys within a vertical case, and the weight attached to the cable within said case to overbalance the weight of the car, substantially as set forth.

2. In a fire escape, the combination of the guiding cables attached to the building at the top and depending adjacent to the wall thereof, the lower ends of said cables being detachably engaged and adapted to be drawn outward from the face of the building, the car provided with the counterpoise and mounted to slide vertically on said cables, said car carrying the jaws through which the cables pass and means for actuating said jaws to grip said cables and arrest the motion of said car.

3. In a fire-escape, the combination of the guiding cables attached at their upper ends to the building and hanging free therefrom, their lower ends being unattached the car provided with a counter-poise mounted on said cables so as to slide vertically, the jaws carried by said car for clamping said cables, the treadle for actuating said jaws, and means for locking said treadle when depressed.

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

LLOYD L. LEWIS.

Witnesses:

E. S. WHEELER,
B. F. WHEELER.