

2 Sheets - Sheet 1.

C. C. MILTON.
Fire-Escapes.

No. 138,513.

Fig. 1.

Patented May 6, 1873.

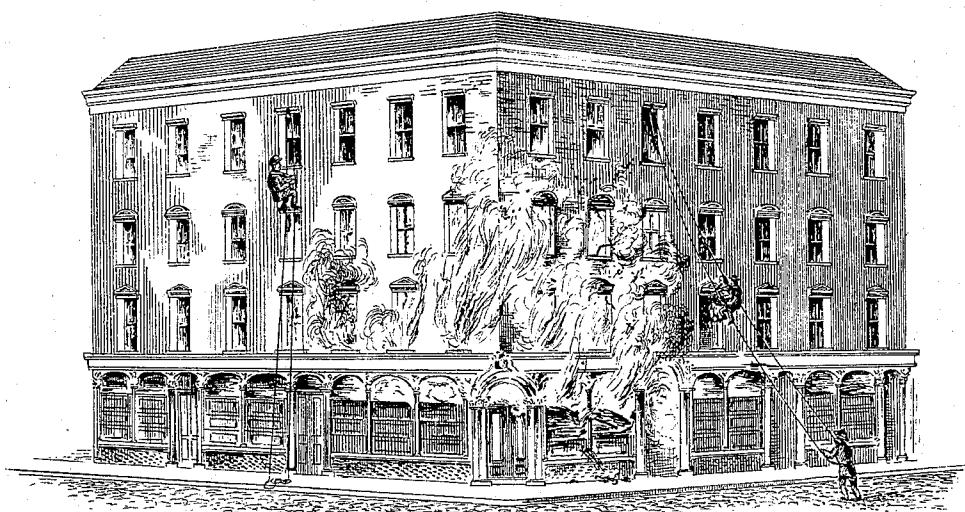


Fig. 2.

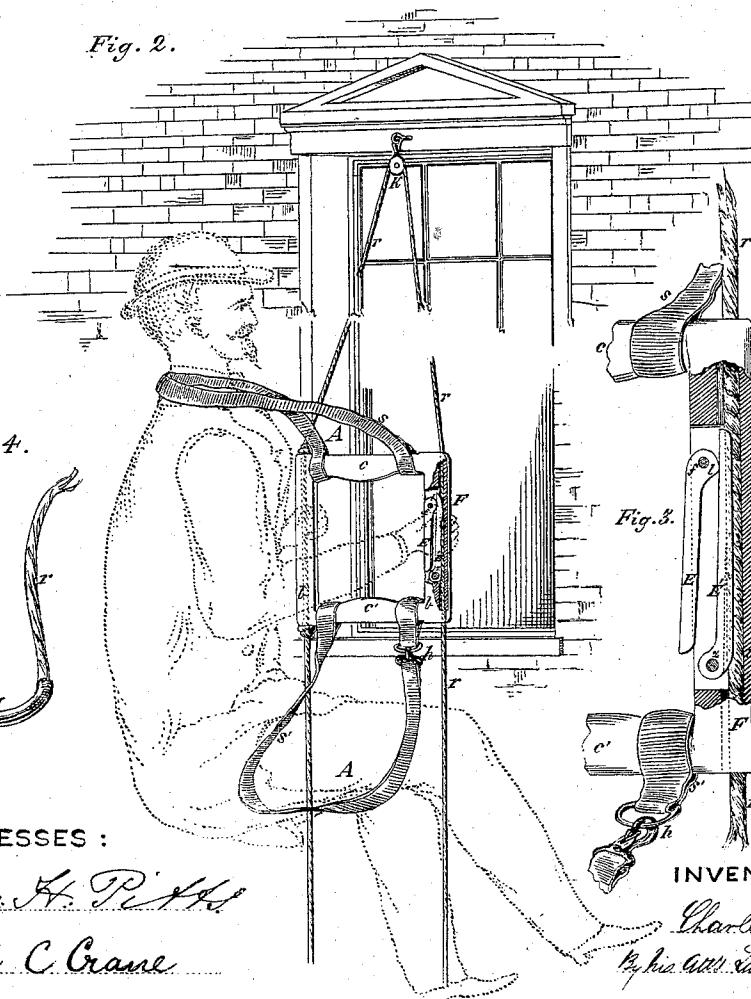
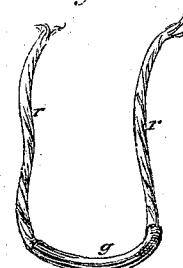


Fig. 4.



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INVENTOR :

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By his Atty. *Lincol. Varick*.

2 Sheets--Sheet 2.

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Fig. 5.

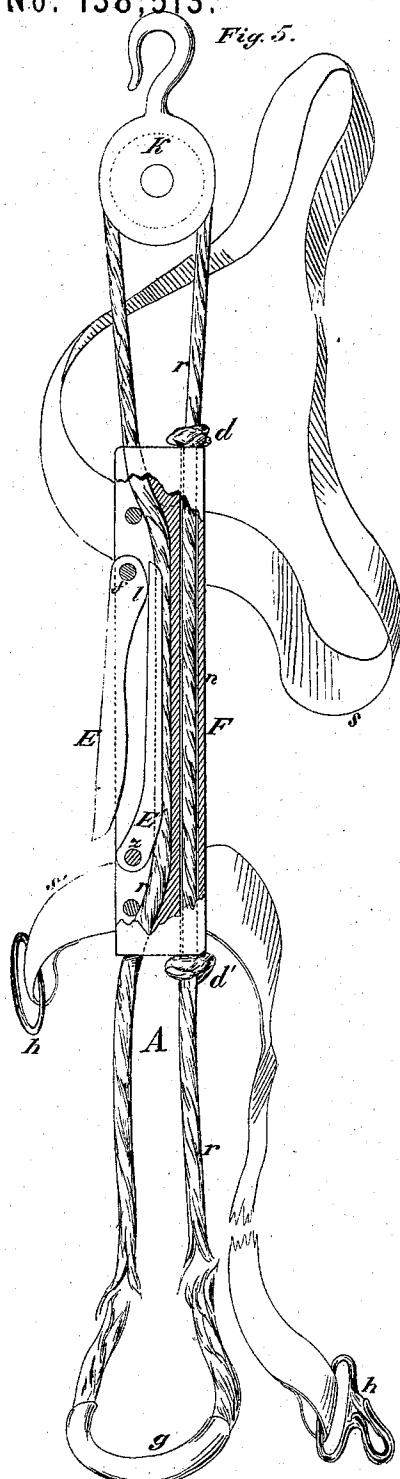
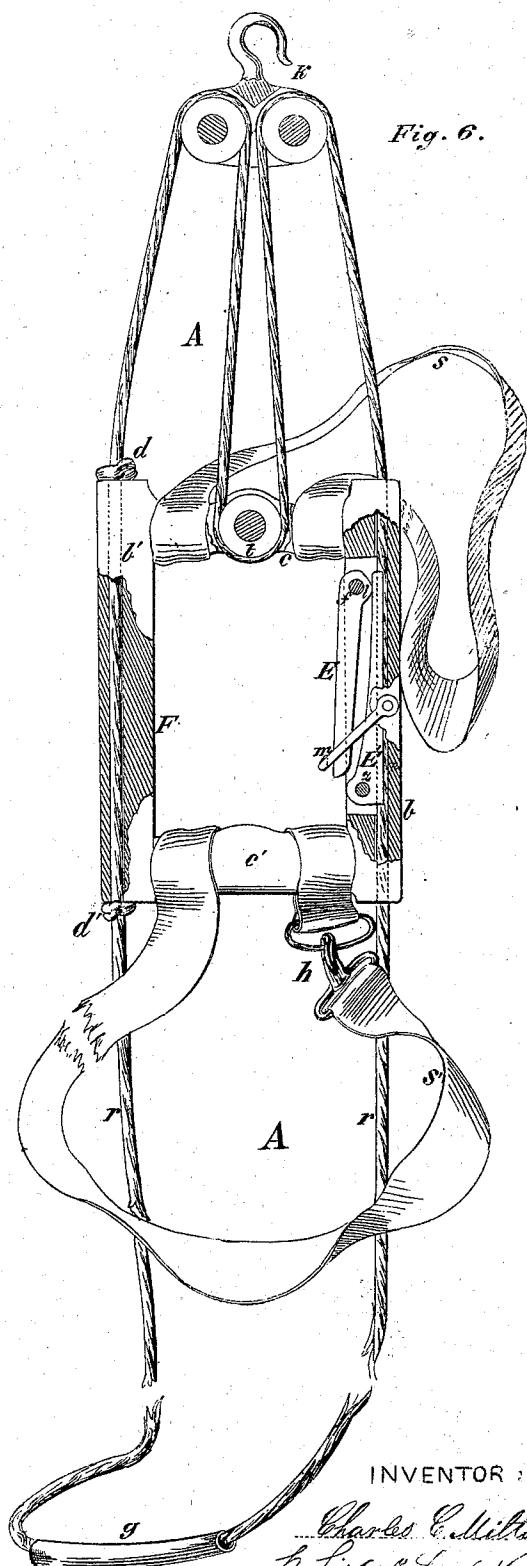


Fig. 6.



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John H. Pitts

Alfred C. Crane

INVENTOR:

Charles C. Milton
By his son, John C. Milton

UNITED STATES PATENT OFFICE.

CHARLES C. MILTON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO EDWARD A. LEARNED, OF SAME PLACE.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. 138,513, dated May 6, 1873; application filed February 27, 1873.

To all whom it may concern:

Be it known that I, CHARLES C. MILTON, of the city and county of San Francisco, State of California, have invented certain Improvements in Fire-Escapes, of which the following is a specification:

My invention relates to the combination of a rope and pulley and traveling car, provided with a compound-lever eccentric brake, to be used for the purposes of a fire-escape, in such manner that the pulley with rope and car attachments can be suspended from any fixed support on a building, and the lever-brake be so conveniently placed and arranged as to regulate the rate of the descent of the occupant of the car; the object of my invention being to produce a fire escape that can be used by either one or two persons at the same time, and can, without outside assistance, admit of their ascent or descent from a burning building, by reason of the efficiency and control to be had over the compound-lever brake, as well as from the superior construction of the car.

Figure 1 is a perspective view of a building supposed to be on fire, and from which escape by the door-way has been cut off. On the left-hand side my improved portable escape is represented in use by a person about to descend without further assistance, and on the right the double form of fire-escape embodying my invention, wherein two people are being rescued at the same time. Fig. 2 is a perspective view of the apparatus embodying my invention, with an outline of the mode of application. Fig. 3 is an enlarged view of a portion of the frame of the traveling car, with the compound-lever eccentric brake embodying my invention. Fig. 4 represents the leather tubing for grasping the endless rope while it slides easily through it. Fig. 5 represents a portable fire-escape embodying my invention, wherein the frame is simplified in construction and size reduced. Fig. 6 is a front view of my fire-escape, the same as shown in Figs. 2 and 3, with the addition of rope and pulley attachments and adjustable hook *m* for fixing the brake.

With reference to Figs. 1, 2, 3, and 4, Sheet 1, *A A* is the car, consisting of a metallic frame *F*, to which are fastened the top and

bottom straps *s* and *s'*, respectively, the top strap being placed around the neck and the bottom strap forming a seat for the occupant. The metallic frame *F* is constructed so as to have the side bars *b b'* hollow for receiving the compound-lever eccentric brake *E E'*, and the endless rope *r* which passes over a pulley-block *K*, and is attached to the car itself by the top and bottom knots *d d'* on the bar *b'*, through which it is fixed to the frame *F*. The straps *s s'* are secured to the transverse bars *c c'*, the bottom strap buckling, by means of a hook and eye attachment, *h*, so as to be readily adjusted around the legs for forming a seat. The compound brake *E E'* consists of two levers, *E* and *E'*. The lever *E* is pivoted at *f* inside of, and at the upper portion of, the right-hand bar *b* of the frame *F*, and when closed or pressed within the bar *b* acts directly on the long arm of the lever *E'*, pivoted beneath at *z*, by means of the project-lump *l* near its fulcrum *f*. The lever *E'* is grooved on the inner face so as to admit of the endless rope *r* sliding along, the space between this groove and the interior wall *n* of the bar *b* being sufficient to allow of this rope passing freely when the lever *E* has been pulled out; and since, by reason of the form of the projection *l*, the more it is closed the more will this grooved lever *E'* be forced to squeeze the rope *r* between itself and the wall of the bar *b*, the resultant friction thus insures a decrease or stoppage of the rate of descent of the car as may be required. Another form of this portable fire-escape on the same principle is represented in Sheet 2, Fig. 5, wherein the frame *F* has been reduced to a single piece with the straps *s* and *s'* attached top and bottom to suitable handles provided. In this case the rope *r* passes twice through the frame *F*, once for making it a part of the car, by securing it through the tubing in the casting by the top and bottom knots *d d'*, and again in sliding through for compression and adjustment by the compound eccentric brake *E E'*, which is of the same construction and acts in a similar manner to that already described.

In Fig. 6, Sheet 2, the frame *F* is supplied with a centrally-fixed pulley within the transverse bar *c*, and the block *k* also has two

sheaves, so that the endless rope *r*, on being fixed to the bar *b'*, is passed over the first sheave, then round the pulley *t* in the frame *F*, then over the second sheave, and lastly, through the bar *b* for adjustment by the compound-lever brake *E E'*, which is also the same in construction and mode of action as that already described. By this means the endless rope *r* has been four times attached and consequently a fourfold power or control is obtained over the movements of the car.

When the fire-escape, as described in Figs. 2, 3 and 5, is required for use, the pulley-block *k* is hung onto an eye provided in the building and the car adjusted to the person by placing the top strap *s* around the neck and hooking the bottom one *s* around the legs so as to form a seat; the spare rope is then taken in the left hand, the bar *b* of the frame *F* grasped with the right so as to regulate the brake *E E'* and the bar *b'* with the left. The descent can now be easily accomplished at a gentle rate by the proper compression on the lever *E*.

Two persons can also descend at the same time by having double straps *s s'*, top and bottom, such arrangement being very useful in the case of a rescue of a helpless man, woman, and child, one of the two passengers being re-

quired for the management of the apparatus; also, in the case of such rescue, if no one is near the burning building at the time to assist in pulling the person up from below, by means of the rope *r* the rescuer can raise himself by this rope and rest at will from his exertions, by employing the brake *E E'*, and thus singly attain his object.

In the case of the fire-escape represented in Fig. 5, the occupant of the car will be required to grasp the frame *F*, with both hands, and in all descriptions of this fire-escape a tubing of leather, *g*, is provided for the rope *r*.

I claim as my invention—

1. The compound-lever eccentric brake *E E'* provided within the right-hand bar *b* of the frame *F*, part of the car *A A*, in combination with the endless rope *r* and pulley-block *K*, substantially as and for the purpose herein set forth.

2. The compound-lever brake *E E'* provided within the frame *F* of the car *A A*, in combination with the endless rope *r*, sheave *t*, and double pulley-block *k*, substantially as and for the purpose hereinbefore set forth.

CHARLES C. MILTON.

Witnesses:

LIONEL VARICAS,
ALFRED C. CRANE.