

(No Model.)

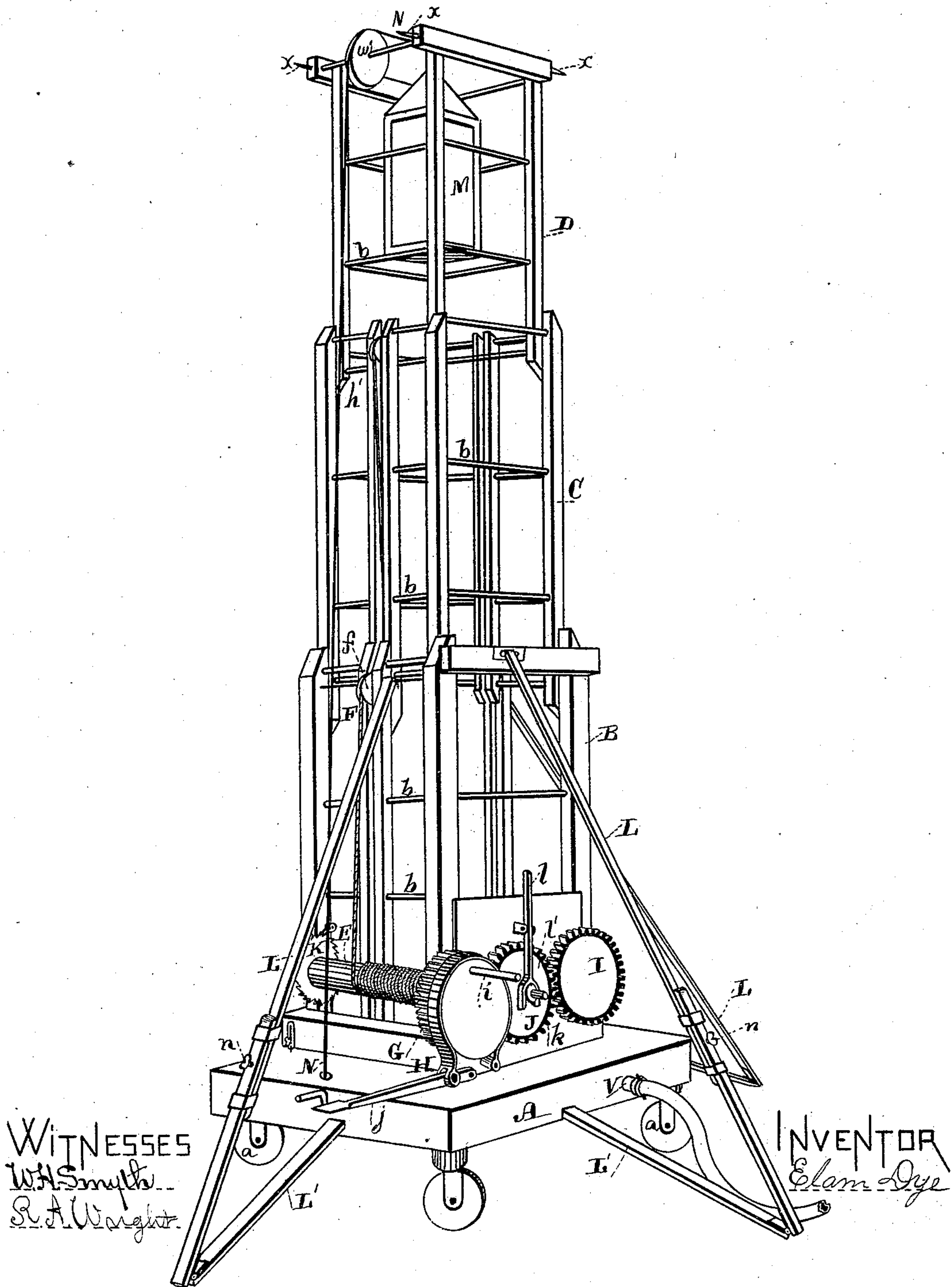
3 Sheets—Sheet 1.

E. DYE.
FIRE ESCAPE.

No. 294,860.

Patented Mar. 11, 1884.

Fig. 1.



WITNESSES
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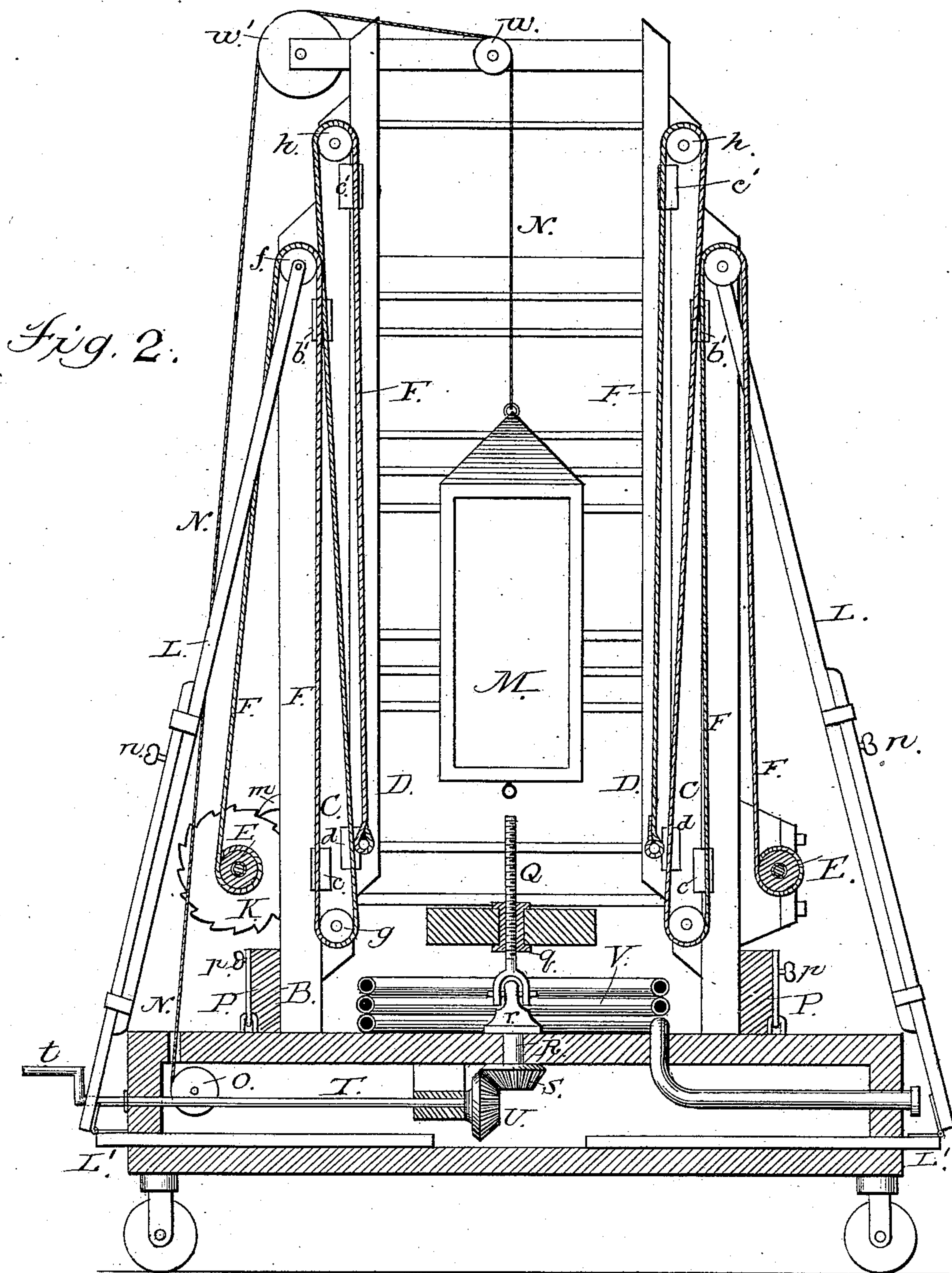
(No Model.)

3 Sheets—Sheet 2.

E. DYE.
FIRE ESCAPE.

No. 294,860.

Patented Mar. 11, 1884.



Witnesses;
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(No Model.)

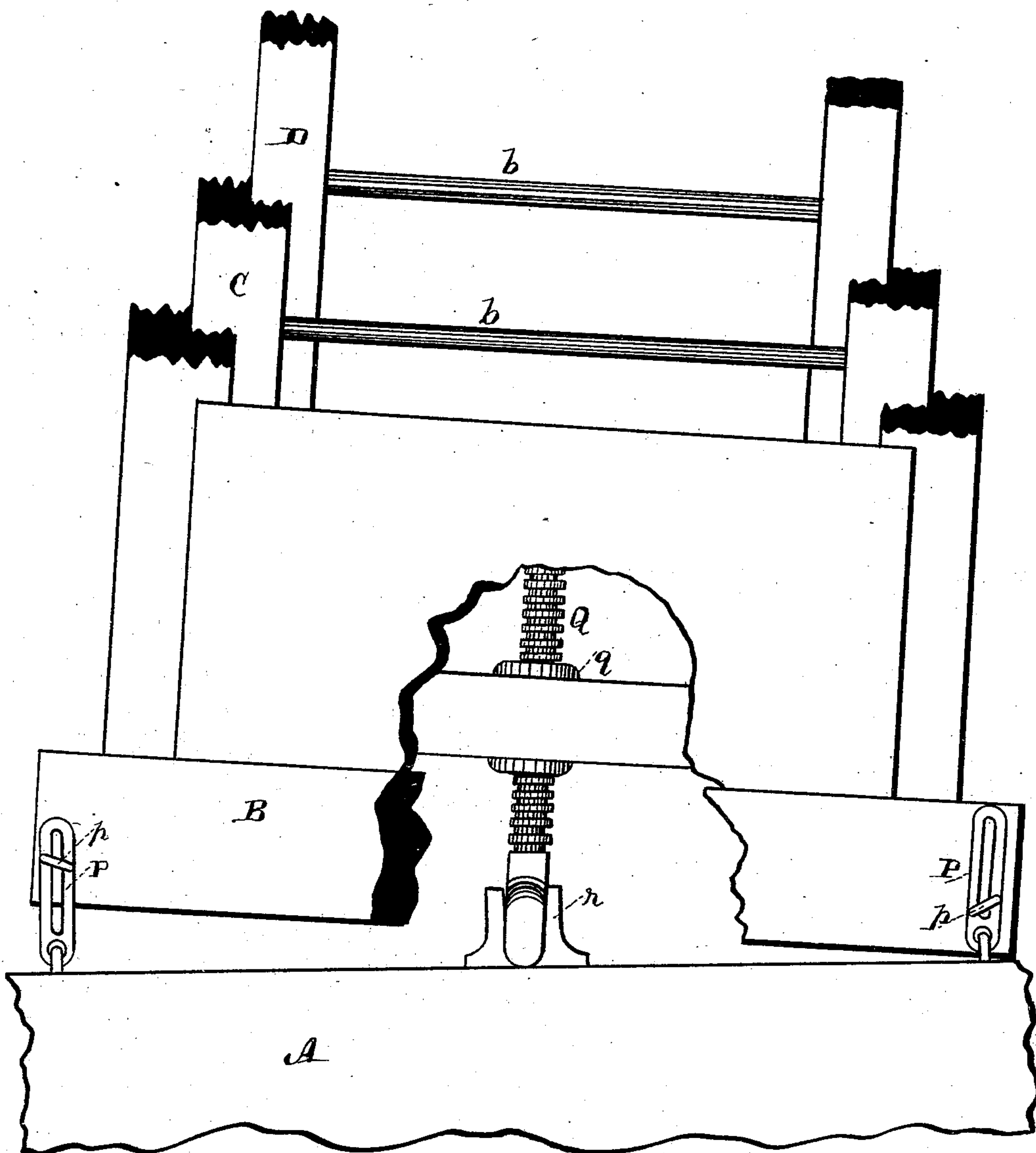
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E. DYE.
FIRE ESCAPE.

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Patented Mar. 11, 1884.

Fig. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ELAM DYE, OF SAN FRANCISCO, CALIFORNIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 294,860, dated March 11, 1884.

Application filed April 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELAM DYE, of the city and county of San Francisco, State of California, have invented an Improved Fire-Escape; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful fire-escape; and it consists in a peculiar extensible frame; in the means for operating it, and in certain details of construction, all of which will hereinafter fully appear.

The object of my invention is to provide a means for the escape of persons from the windows of a burning building, and for all similar purposes in which outside communication with the ground is rendered necessary.

Referring to the accompanying drawings, Figure 1, Sheet 1, is a perspective view of my device, showing it extended. Fig. 2, Sheet 2, is a vertical section of same, showing it closed. Fig. 3, Sheet 3, is a detail of the base, showing the means for inclining the frame.

A is a hollow base mounted on wheels *a* for convenience in setting it in proper position. Upon the base is a frame-section, B, consisting of posts braced by rods *b*, which are placed at such distances apart as to form rounds of a ladder, whereby one may mount the frame.

C is a second frame-section, the posts of which are adapted to slide up and down within the posts of section B. Any form of suitable guides may be provided for this purpose—such, for example, as tongues and grooves.

D is a third section, here shown as the top one. It is adapted to slide within section C in a manner similar to the way in which said section moves in section B. Both sections C and D are provided with cross bars or rounds *b*, whereby the whole device may be used as a ladder, as will be hereinafter explained. Across the bars of the lowest section, B, is mounted a drum, E, and a similar one, E', is mounted opposite. The running-gear or ropes by which the device is operated may be seen in Fig. 2.

Ropes F are attached to the drums E E', and thence pass up to and over pulleys *f* in the top of the central side posts of section B; thence down to and around pulleys *g* in the base of section C; thence up to and over pulleys *h* in the top of said section, and down to the bottom of section D, where they are secured, as shown. By

winding up these ropes on drums E E' the sections C and D rise together to the limit of section C, when section D continues to rise to its limit. These limits of movement are defined by blocks *c* near the bottom of section C, which come in contact with block *b'* near the top of section B, and by similar blocks *d* at the base of section D, which strike blocks *c'* at the top of section C.

Upon one end of drum E is a gear, G, having a crank-handle, *i*, whereby said drum is revolved.

H is a strap-brake encircling a rim of the gear G, and operated by the foot-lever *j*.

Upon the end of drum E' is a gear, I, and a central gear, J, meshes with gears G and I. These gears are all of equal diameter, whereby equal rate of motion is transmitted to drum E' in order that the ropes F may be wound up equally; but in case one rope should be wound tighter than the other, and thus throw the sections out of plumb, or make them bind, I have placed the central gear, J, upon a feather on shaft, *k*. A small hand-lever, *l*, with a clutch, *l'*, is used to throw said gear J out of engagement for a moment, in order to stop the motion of one side until the sections right themselves.

K is a ratchet upon the other end of shaft E. A pawl, *m*, engages with it to prevent the drum from turning back.

L are extensible braces formed of two pieces, one sliding in sockets upon the other and set by screws *n*. The upper ends of these braces are hinged to the top of the section B, and their lower ends are hinged to strips L', which lie within the hollow base A. These strips are adapted to slide in suitable guides within the base and extend out through holes therein.

When the device is not in use these strips are withdrawn into the base, and the braces are therefore drawn close into the base, as in Fig. 2; but when in use they are extended and the braces thrown out, as in Fig. 1.

M is a cage. This is suspended within the frame-sections by a rope, N, which passes up over pulleys *w w'* in the top of the upper section, D, and down to and through one edge of the base A to a drum, O, upon which it is adapted to be wound. This drum is operated by a crank (not here shown) which extends through the base to the outside. By means

of this rope N the cage M may be hoisted to receive a load and then lowered.

In cases where the device cannot be adjusted close enough to the building to allow it to be perpendicular and yet accessible from the windows it should be inclined in the same manner as a ladder would be. The means I employ to accomplish this will be seen in Fig. 3.

The lowest section, B, is secured to the base A by means of links P, secured to the base at its four corners. Set-screws *p* pass through the links into the base of the section B and bind it firmly.

Q is a screw, which passes through a stationary nut, *q*, in a cross-beam of the section B. The lower end of this screw is pivoted to a bearing, *r*, upon the upper end of a shaft, R, which passes down through the top of the base A, and carries a bevel-pinion, S, upon its lower end, Fig. 2.

T is a shaft having a crank, *t*, on its outer end, and a bevel-pinion, U, upon its inner end, which meshes with pinion S. By loosening the set-screws *p* of the links P upon one side of the device and tightening them upon the other the whole frame may be inclined by operating the crank *t*. The pivoted screw will permit this inclination. In the top of section D, I drive spikes *x*, to rest against the wall when the device is inclined.

V is a hose coiled around upon base A, one end passing down through the base and out one side, where it is adapted to have another piece coupled to it. This hose may be attached to the cage and drawn up, or it may be carried up by a man mounting the device by its rounds as a ladder.

It is obvious that I may have as many sections to this device as necessary.

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

1. The telescoping frame-sections B C D and their operating-ropes F, in combination

with the winding-drums E E', one on each side, the gears G I on said drums, and the intermediate gear, J, feathered on its shaft, and the lever *l*, with its clutch *l'*, for throwing said gear out of engagement with gears G I, substantially as and for the purpose herein described.

2. The hollow base A and the telescoping frame-sections B C D, in combination with the cage M, smaller than the interior of said sections, the rope N, pulleys *w w'*, and winding-drum O, in said hollow base, substantially as and for the purpose herein described.

3. The hollow base A and frame-section B, in combination with the extensible braces L and strips L', hinged to their lower ends and sliding in the hollow base A, substantially as herein described.

4. The base A, telescoping frame-sections B C D, and the corner-links P, with set-screws *p*, securing section B to base A, in combination with the means for inclining said section, consisting of the pivoted screw Q, nut *q*, and means for rotating said screw, substantially as herein described.

5. The hollow base A, telescoping frame-sections B C D, and the corner-links P, with set-screws *p*, securing section B to base A, in combination with the means for inclining said sections, consisting of the pivoted screw Q and nut *q*, the bearing *r*, shafts R T, pinions S U, and crank *t*, all arranged and operating substantially as herein described.

6. The hollow base A and telescoping frame-sections B C D, in combination with the hose V, lying on the base A, and having its end extending into it and through its side, substantially as herein described.

In witness whereof I hereunto set my hand.

ELAM DYE.

Witnesses:

S. H. NOURSE,
J. H. BLOOD.