

(No Model.)

A. T. BROWN.

FIRE ESCAPE.

No. 272,642.

Patented Feb. 20, 1883.

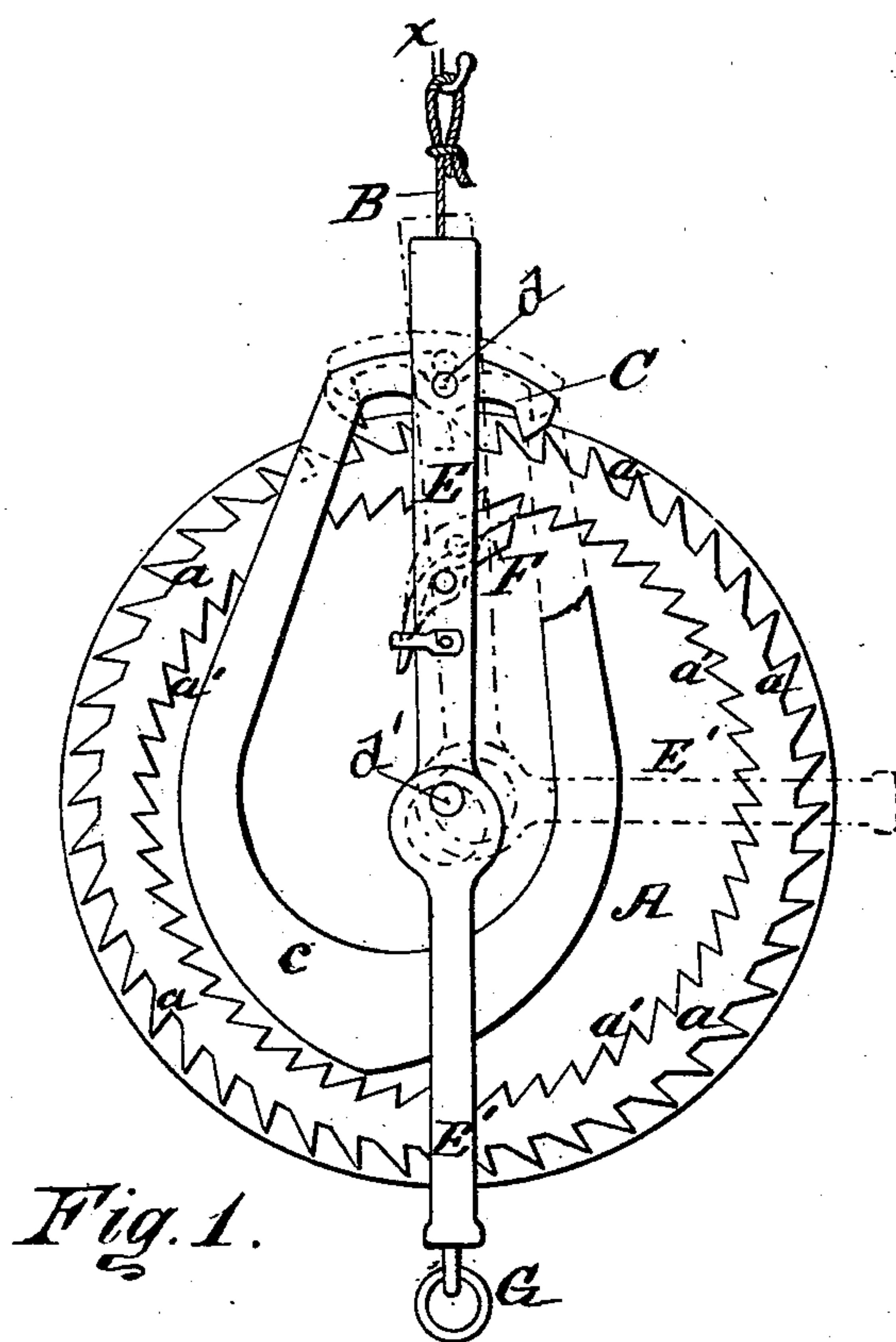


Fig. 1.

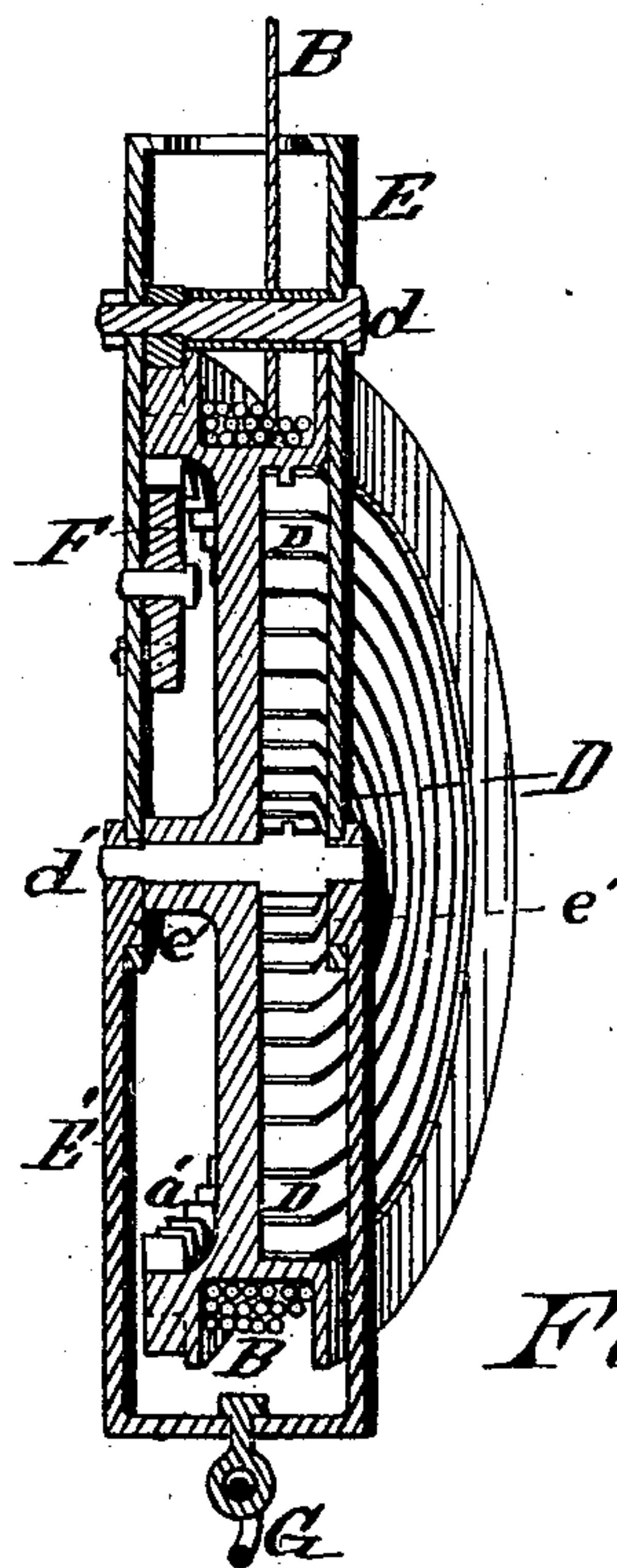


Fig. 2.

Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

ALEXANDER T. BROWN, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF TO HOWARD H. LINCOLN, OF SAME PLACE.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 272,642, dated February 20, 1883.

Application filed August 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER T. BROWN, of the city of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Fire-Escapes; 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 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.

The object of my invention is to provide a safe and effective means of escape to persons in the upper stories of burning buildings; and it consists in the construction and arrangement of parts hereinafter more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a plan elevation of my invention. Fig. 2 is a sectional perspective.

It consists of a reel, A, cable B, pawl C, coiled spring D, upper and lower reel-frames, E E', and safety-dog F, with such attachments and connections as are hereinafter mentioned.

One of the flanges of the reel is provided with outer and inner ratchet-teeth, *a a* and *a' a'*. The drum of the reel is constructed with lateral concavities about its axle to afford ample room on either side for the pendulum, return-spring, and safety-dog, hereinafter described.

The pawl C is provided with a pendulum, *c*, of suitable weight, firmly secured at one end, and oscillates upon an axis, *d*, by which it is centrally secured to the upper reel-frame, E.

When desired to be used the cable is secured to hook X, as shown in Fig. 1, and a suitable strap or harness, attached to the ring G, is secured to the body of the person to be lowered. His weight revolves the wheel, which pays out the cable, causing a descent, which is modulated by the action of the pawl C upon the ratchet-teeth *a a*.

An important feature of my invention consists in the means of automatically returning the device after each descent. This is accomplished by means of the coiled spring D and the peculiar mode of constructing and connect-

ing the central joint of the frames E E'. The joint ends of the upper frame have each a circular aperture much larger than the axle *d'*, which passes through them. The joint ends of frame E' are provided each with an inner boss, *e'*, (shown in Fig. 2,) which when connected substantially fills the aperture of frame E, loosely fitting therein. The axle *d'* is rigidly secured to the circular joint ends of frame E' at a point above their center and above the center of their embossed parts *e'*, thus forming an eccentric. The coiled spring is attached, its outer end to the reel, and its inner end to the axle *d'*, so that the revolutions of the reel in the descent, wind up the spring, and upon being relieved of the weight of the descending body the resistance of the compressed spring reverses the reel, winds up the cable, and carries the whole back to its place of departure. To permit such return, it is necessary to disengage the pawl C from the ratchet-teeth *a a*. To accomplish this the inner end of the coiled spring D is so attached to the axle *d'* that when not borne down by weight the lower end of frame E', by means of its rigid connection with said axle, is turned upward, as denoted by dotted lines in Fig. 1, which movement, by means of the eccentric-joint hereinbefore described, of said frames, raises the frame E, and consequently the ratchet C, to which it is attached, thus disengaging said pawl from the ratchet-teeth; but as often as weight is applied and the lower end of frame E' is borne down perpendicular with the upper frame the pawl C is brought back into connection with the ratchet-teeth *a a*.

To guard against the possible accident of a too rapid descent in case, for any reason, the pawl C should fail to come in contact with the teeth *a a* upon the application of the weight to the lower frame, I provide a safety-dog, F, secured to the upper frame at such a point that it comes in contact with the inner teeth, *a' a'*, of the reel whenever the pawl C is out of contact with the outer teeth, and prevents any downward or paying-out revolution of the reel.

It will be readily seen that my improved fire-escape can be conveniently carried in an ordinary traveling-bag, or it may be permanently and conveniently located in any room; and

one of its advantages consists in the fact that the device itself is carried down with the person descending, thus causing no downward movement of the rope or cable after it is paid
5 out from the reel, as is the case with other devices of like object, rendering the rope liable to be severed in the descent by sawing across sharp edges of masonry or iron with which it may come in contact. Its action being automatic both in descending and ascending, no
10 experience is required to operate it.

Having thus described my invention, I claim—

1. A fire-escape consisting in a frame composed of two sections—an upper and lower one—connected together by an eccentric-joint,
15 a coiled spring secured to the axle joined to the eccentric, a ratchet, and pawl, the whole so constructed and arranged that the coiled spring
20 will automatically cause the device to be returned after each descent, substantially as specified.

2. In a fire-escape, the combination, with a frame composed of an upper and lower section

connected by an eccentric-joint, and the axle 25 d' , of a reel provided with ratchet-teeth, the pawl and pendulum, and spring, substantially as specified.

3. In a fire-escape having a cable, the combination of the frame composed of an upper and 30 lower section connected by an eccentric-joint, the axles d' and d , with the reel provided with ratchet-teeth, the pawl and pendulum, and coiled spring, as specified.

4. A fire-escape consisting of the frame E 35 E', connected with the axle d' by the eccentric-joint, as described, and axle d , in combination with the reel A, provided with inner and outer ratchet-teeth, the pawl and pendulum, coiled spring D, safety-dog F, and cable B, as and 40 for the purpose set forth.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

ALEXANDER T. BROWN.

Witnesses:

B. A. BENEDICT,
A. H. DAY.