

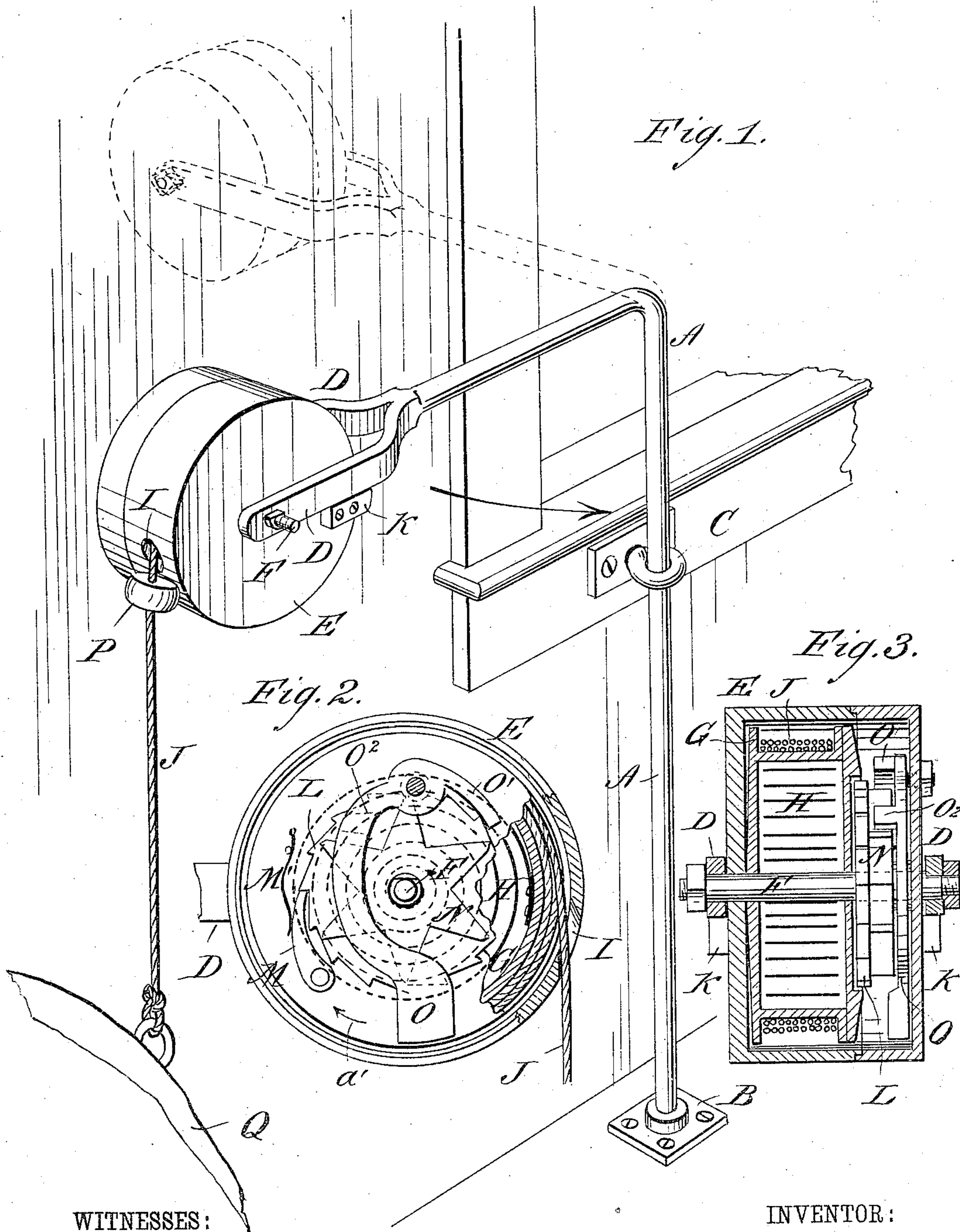
(No Model.)

L. B. McDONALD.

FIRE ESCAPE.

No. 310,603.

Patented Jan. 13, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 310,603, dated January 13, 1885.

Application filed April 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, LEWIS B. McDONALD, of Little Rock, in the county of Pulaski and State of Arkansas, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

This invention pertains to improvements in fire-escapes, having for its object to effect the ready and convenient adjustment of the device for use, to enable the safe descent of the escaping person, and to control the speed of descent while causing the automatic recoiling of the safety rope or cable after the descent of one person to permit the escape or descent of another; and the invention consists of the combination of parts and their construction, substantially as hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my improved fire-escape, showing the manner in which it is fastened to the wall of the room. Fig. 2 is a side view of the hollow drum, parts being broken out and others shown in section. Fig. 3 is a cross-sectional elevation of the drum.

An L-shaped rod, A, has its lower end passed into a socket formed in a plate, B, secured on the floor adjoining the wall and below the window-sill, and the upright part of the said rod passes through an eye, C, secured on the bottom piece of the window-casing, the said rod thus being held in such a manner that it can turn on the axis of the vertical part of the rod. On the end of the horizontal part of the rod a horizontal fork, D, is formed, between the prongs of which a circular casing, E, is held, the ends of the transverse axle or shaft F of the casing being held rigidly in the sides of the prongs of the fork. Within the hollow drum or circular casing a hollow flanged pulley, G, is mounted loosely on the shaft, and in the hollow pulley G is held a spiral spring, H, one end of which is secured to the shaft F and the other end is secured to the inner surface of the rim of the hollow pulley G. On the outer surface of the rim of the hollow pulley one end of a rope, J, is secured, which rope is wound on the pulley and passes through an opening, I, in the circular casing E. Blocks

K, secured on the sides of the casing E, rest against the bottom edges of the prongs of the fork D, thus preventing the casing E from revolving. In a recess in one of the outer sides of the pulley G a ratchet-wheel, L, is loosely mounted on the shaft F, and with the teeth of the said ratchet-wheel a pawl, M, pivoted on the pulley G, engages, which is pressed against the teeth by a spring, M', the pawl being pivoted to the outer side of the pulley G. A star-wheel, N, is secured to or made integral with the outer surface of the ratchet-wheel L. A weighted or pendulous pawl, O, is pivoted to the inner surface of one of the sides of the casing E at the top, which pawl is provided with teeth O' and O'', adapted to engage with the ends of the teeth of the star-wheel. A rubber bumper, P, is secured on the rope J a short distance from its free end. A belt, Q, or like device is held in the free end of the rope. In place of the rope a wire or fine cable can be used.

The operation is as follows: The rope is wound on the pulley G, and the casing E is swung against the inner surface of the wall at the side of the window, as shown in Fig. 1. If the fire-escape is to be used, the horizontal part of the rod A is swung out of the window, as shown in dotted lines. The strap or belt Q is passed around the body of the person to be rescued, and if the person steps out of the window he will descend, the rope J uncoiling from the pulley G and revolving the same in the direction of the arrow a'. The pawl M causes the ratchet-wheel L and star-wheel N to revolve with the pulley, and, as the ends of the teeth of the star-wheel N strike against the teeth O' and O'' of the pawl O, the pulley is prevented from revolving too rapidly. The spring H is coiled by the unwinding of the rope. When the person arrives at the ground, he unfastens the belt and releases the rope. The spring H uncoils and revolves the pulley G in the inverse direction of the arrow a', and the pawl M slides over the teeth of the ratchet-wheel L, which is held by the pawl O. The rope is thus wound on the pulley, and the fire-escape can be used by another person.

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

1. In a fire-escape, the combination, with the bifurcated L-shaped rod pivoted to the floor and the window-sill, of a rope pulley or

drum pivoted between and in the prongs or arms of the said rod, substantially as herein shown and described.

2. In a fire-escape, the combination, with
5 the pivoted rod A, having a fork, D, formed on its end, of the casing E, held between the prongs of the fork, a spring-pulley contained in the casing, a rope secured on the spring-pulley, and of the blocks K, secured to the
10 sides of the casing, substantially as herein shown and described.

3. In a fire-escape, the combination, with
the casing E, having a fixed shaft, F, of the
hollow pulley G, mounted on the shaft F, the
15 spring H, contained in the pulley G, and having one end secured to the pulley and the other on the shaft, and the ratchet-wheel L, mounted loosely on the shaft, the pawl M, engaging with the teeth of the ratchet-wheel and pivoted on
20 the pulley, and of means for holding the ratchet-wheel and preventing it from revol-

ing too fast when the rope is being unwound from the pulley, substantially as herein shown and described.

4. In a fire-escape, the combination, with 25
the casing E, having a fixed shaft, F, of the hollow pulley G, mounted loosely on the shaft, the spring H, contained in the pulley G, and having one end secured to the pulley and the other to the shaft, the ratchet-wheel L, mounted 30
loosely on the shaft F, the pawl M, the star-wheel N, united with or made integral with the ratchet-wheel L, and of the pendulous pawl O, pivoted to the casing E, and provided with teeth O' and O², for engaging with the teeth of 35
the star-wheel N, substantially as herein shown and described.

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Witnesses:

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