

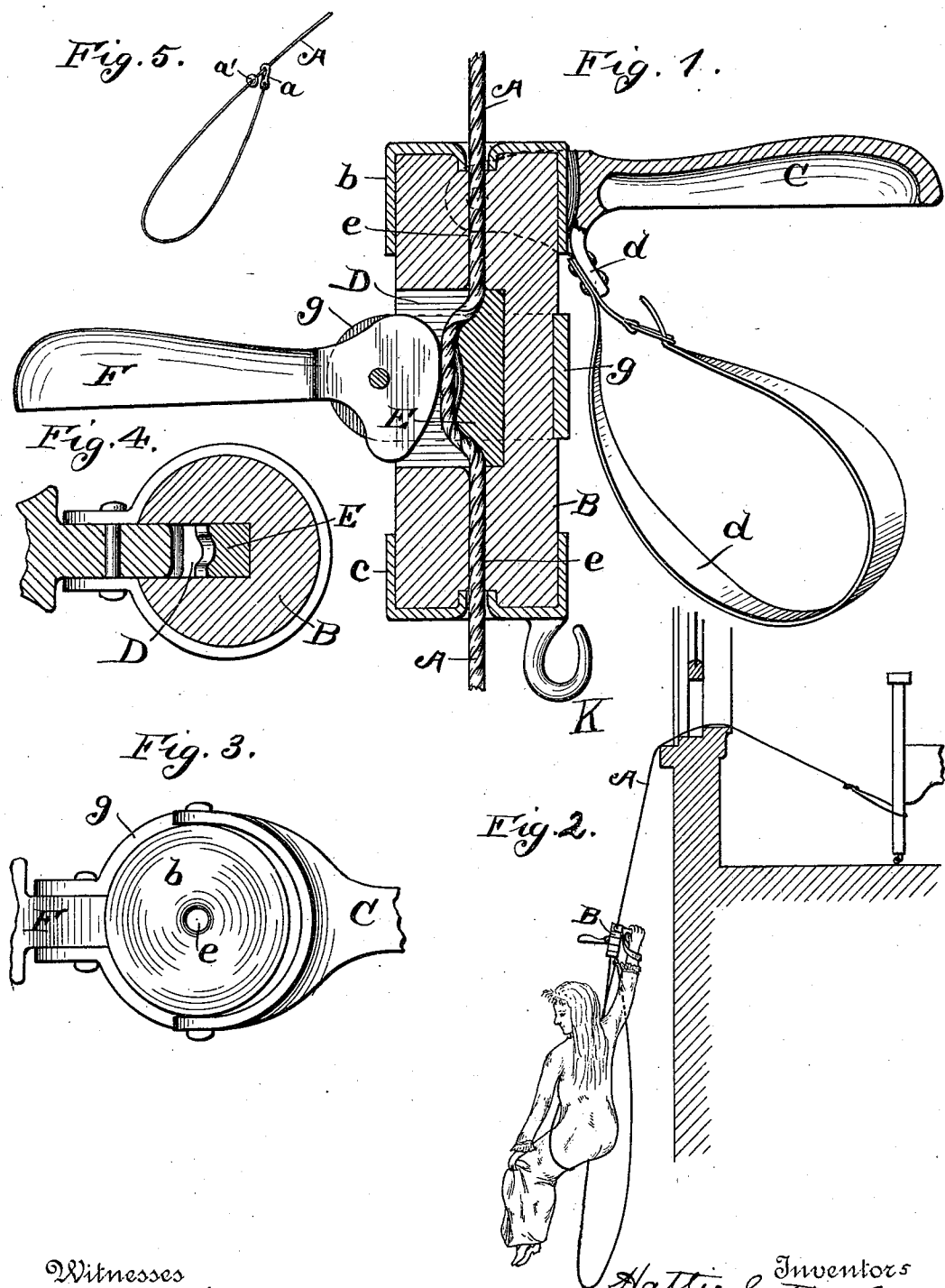
(No Model.)

2 Sheets—Sheet 1.

H. COTTON & C. M. MILLER.  
FIRE ESCAPE.

No. 544,724.

Patented Aug. 20, 1895.



Witnesses

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Inventors  
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(No Model.)

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Fig. 6.

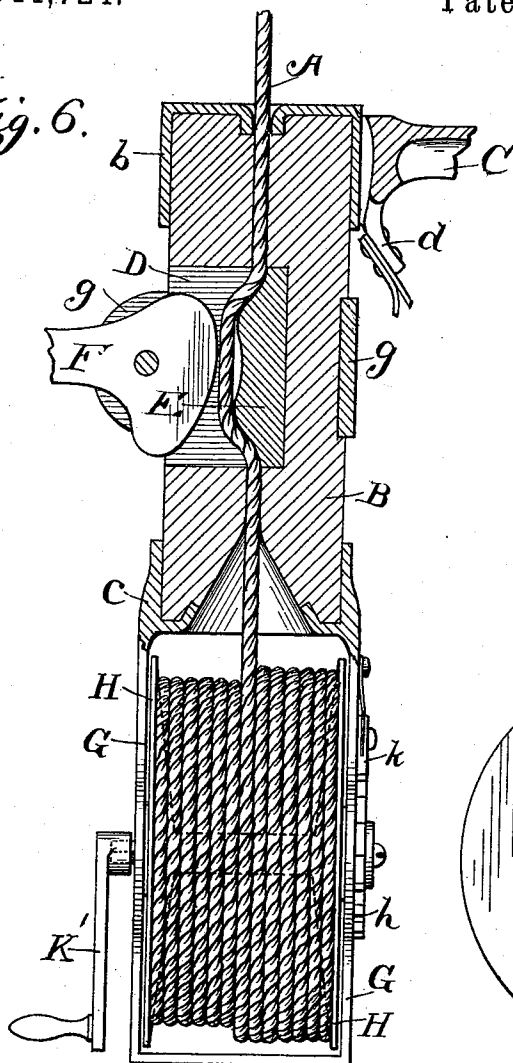
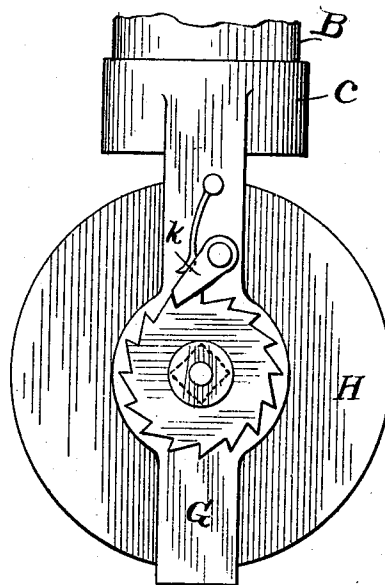


Fig. 7.



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# UNITED STATES PATENT OFFICE.

HATTIE COTTON AND CHARLES M. MILLER, OF EVANSTON, ILLINOIS.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 544,724, dated August 20, 1895.

Application filed November 13, 1893. Serial No. 490,756. (No model.)

*To all whom it may concern:*

Be it known that we, HATTIE COTTON and CHARLES M. MILLER, of Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of our invention is to provide a compact, light, and perfect-operating fire-escape, which can be conveniently carried from place to place in a suitable case, in a grip-sack along with other luggage, or in a satchel, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a vertical sectional view of the carrier or principal part of our invention, taken on a larger scale than Fig. 2. Fig. 2 is a vertical sectional view of a portion of a bed-room, showing the manner of use of our improved fire-escape. Fig. 3 is a plan view of the same, showing the outer portions of the handles broken away. Fig. 4 is a horizontal transverse section through said carrier. Fig. 5 shows the construction of the ends of the wire, rope, or cable used in connection with our improved fire-escape; and Figs. 6 and 7 show, respectively, a vertical transverse section and a side view of the lower portion of our improved fire-escape, showing a reel attachment.

Referring to the drawings, A represents a wire cable or a rope made of wire or other suitable material, which is about one hundred feet in length, more or less, and which is provided, preferably, at both ends with loops. We prefer to make these loops by attaching a snap-hook *a* to the very ends of the rope A and securing on the same a suitable length from each end a spherical button *a'*. The loop on the end of the rope A, which is secured in the room from the window of which the operator desires to lower himself, need not be as large as the loop on the lower end of the same. This is because the latter loop is intended to support the operator, who may either sit in it, as shown in Fig. 1 of the drawings, or pass the same under the arms.

The principal part of our invention consists in the carrier, which is shown in Figs. 2, 3,

and 4. This consists of a cylindrical block, made preferably of some hard wood—as, for instance, lignum-vitæ. The ends of this block B are protected and strengthened by the ferrules *b* and *c*, which may be made of any sufficiently-strong metal. The former *b* has a handle C pivotally connected thereto and normally projecting laterally therefrom. The pivotal lugs of this handle C span the said ferrule *b*, so that suitable studs, projecting from the ferrule with reference thereto, may pass through the ends of said lugs. Extending downward from said handle C, midway between said lugs, is another lug *d*, and to this lug *d* is suitably attached a wrist-loop *d'*, made preferably of leather. The hand of the operator is first slipped upward through this loop *d'* and then the handle is grasped, substantially as shown in Fig. 1. Thus, if from any accident the operator should lose his grasp on the handle C the loop *d'* would still hold him.

Originally, in constructing the carrier the block B is provided with a longitudinal bore extending its entire length. It is also, about its center of length, provided with a transverse recess D, which extends from the circumference past the center of the block such a distance that when the insert friction-block E is placed therein, as shown, its outer grooved end portions will register with the straight longitudinal passages *e e*, formed by boring the block B longitudinally, substantially as shown. The outer surface of the friction-block E curves out centrally, between its ends, so that the rope A diverges laterally from the straight course it otherwise would describe. This of itself creates sufficient friction on the rope to prevent the carrier from moving downward too rapidly when the weight of the operator is supported by it. To further diminish the speed of the carrier when in use and put it under the perfect control of said operator, we have provided a perfect brake for the carrier. This consists of a dog F, which is journaled between the ends of a suitable clip *g*, surrounding block B about its center of length. The engaging-head of this dog, which is cam-shaped, bites or bears hard against the rope A coming between it and the friction-block, when the hand of the op-

erator pulls down upon the handle *f* of said dog, which extends outward from the head thereof, as shown.

The operation of our improved fire-escape is as follows, to wit: The operator fastens one end of the rope A in the room from which it is desired to descend, after having first slipped the same through the carrier. He then throws the other or remaining part of the rope out of the window, all except the looped outer end of the same. Then he fastens the looped end around his person, either in the manner shown in the drawings or otherwise, and hooks the upper end of the same over the hook K, depending from the lower ferrule of the block, as shown. Lowering himself out of the window he lets his entire weight be supported by the carrier, grasping the handle C in the manner described, and controlling his descent with the other hand, either through the medium of the dog F or otherwise. It is apparent that an independent loop may be provided to secure the body to and support it from the carrier. In this case the loop on the lower end may be dispensed with. So, also, can the upper loop of rope A be dispensed with. All that is necessary is to fasten the rope securely in the building from which it is desired to escape. If this can be done without the said upper loop it undoubtedly can be dispensed with.

In Figs. 6 and 7 is shown a slight modification of our invention. This consists in journaling in a yoke-shaped hanger G, depending from the lower ferrule *e* at points located diametrically opposite each other, the reel H. The drum of this reel is of such diameter that a considerable length of rope A can be wound thereon and its journals extend through their respective bearings in the hanger, the one extension being made square in cross-section, so that a suitable removable crank K' may

be adjusted thereon, when desired, to enable the operator to wind up the rope A thereon, and the other extension being provided with a ratchet *h*, which is engaged by a spring-actuated pawl *k*. This pawl prevents the reel from independently revolving; but when it is desired to use the fire-escape it is disengaged from the pressure of the spring and its relative position reversed, so as to permit of the free unwinding of the rope to lower the person. When the reel H is used, we provide a loop to attach the body to the carrier, which is independent of the rope A.

What we claim as new is—

1. The combination with a suitable wire or rope, of a block B having the longitudinal passages *e, e*, therein and having a lateral recess as described, the ferrules or thimbles *b* and *c* on the ends of said block, the handle C projecting laterally from the uppermost ferrule, the friction-block having its outer surface curved outward and inserted in said recess, a dog pivoted to said block and engaging said rope as it passes over said friction-block, and a loop for securing the body to block B, as set forth.

2. The combination with a suitable wire or rope, of a block B having the longitudinal passages *e, e*, and having a lateral recess therein, as described, the ferrules or thimbles *b* and *c*, on the ends of the block B, the handle C, the wrist-loop, the friction-block E having its outer surface curved outward and inserted in said recess, a dog pivoted to said block and engaging said rope or wire as it passes over said friction-block and a loop for securing said body to said block B, as set forth.

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