

(No Model.)

H. L. BOYLE.

FIRE ESCAPE.

No. 381,982.

Patented May 1, 1888.

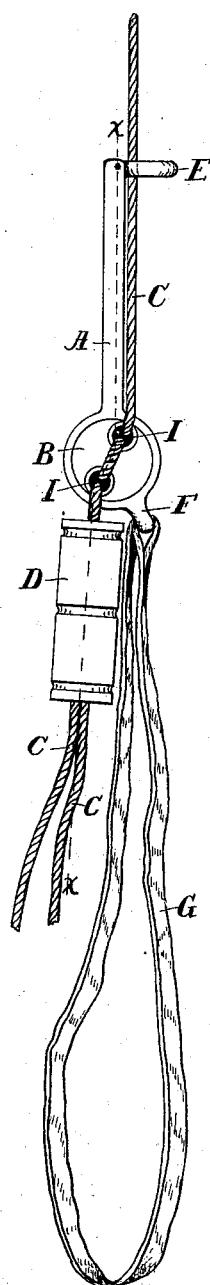


Fig. 1.

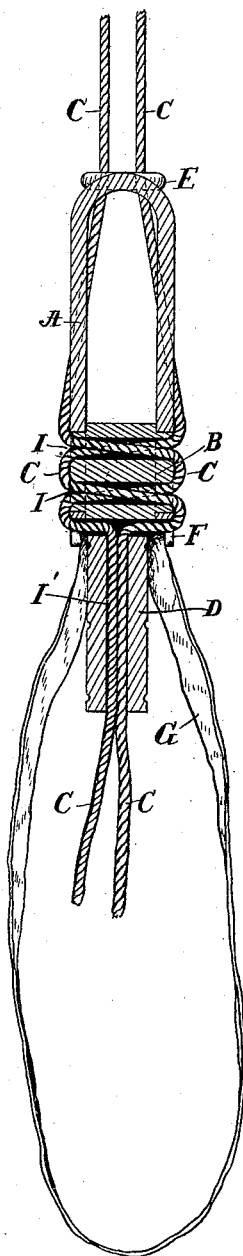


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 381,982, dated May 1, 1888.

Application filed August 23, 1887. Serial No. 247,697. (No model.)

*To all whom it may concern:*

Be it known that I, HOMER L. BOYLE, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Fire-Escape, of which the following is a specification.

My invention relates to a fire-escape in which the user is enabled to lower himself from the upper story of a building by means of ropes so adjusted that he can control his downward movement by means of increased and decreased friction; and the object of my invention is to construct a simple, cheap, and safe fire-escape which can be packed into a valise or similar receptacle, and which is always in readiness for use. This object I accomplish by means of mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my newly-invented fire-escape, showing an end view of the upper friction-block and a side view of the lower friction check-block. Fig. 2 is a vertical sectional view of the same on line *xx* of Fig. 1.

Similar letters refer to similar parts throughout the drawings.

B represents the upper friction-block provided with a suitable bail or handle, A, attached to said block in a suitable manner.

D represents a perpendicular check-block supported by means of the cords alone.

E is a loop forming a guide for the cords C C.

F is a loop upon the friction-block B, to which the supporting-strap G is attached.

I I are holes through the friction-block B, and I' is the opening or hole through the check-block D. The cords C C pass through the loop E and downward, one at either end of the block B. These cords are passed through the openings I I, crossing each other, as fully shown in Fig. 2, and are brought together below the block B, and pass through opening I' in check-block D. By placing the friction-block B in a horizontal position and the friction check-block D at right angles to said friction-block B the block D can readily be grasped by the hand as the person descends. The friction is caused principally by the contact of the cords with the upper horizontal block, while the lower block acts as a check upon the movement of the upper block upon the cords.

When the check-block D is drawn down away from the horizontal block, such block will slide downward; but when the horizontal block reaches the lower block the cords are drawn tight around the ends of B, thereby increasing the friction to such an extent that the person supported by the strap G will be held stationary.

I have shown the blocks B and D as cylindrical in form, which form I prefer; but it is obvious that the form of the blocks is not material to the practical working of my invention.

The size of the friction-blocks will depend upon the size of the cords used. I have found by experiment that blocks as small as one inch in diameter and five inches long will work successfully; but I prefer to use blocks of somewhat larger size.

By using two cords instead of one I am enabled to obtain the required amount of friction by means of a single friction-block, and with much less wear upon the cords than would be produced if a single cord were used.

By using very stiff cords a sufficient amount of friction may be obtained by passing the cords through a single hole in the friction-block B, and if more friction is required a block with more than two holes may be used; but I deem a block constructed as above described preferable. The user first attaches the upper ends of the cords C C to any suitable support in the room. He then places himself in the supporting-strap G, taking hold at the same time of the friction check-block D. By pulling down on the check-block D the friction-block B and all parts attached to it will gradually slide downward on the cords C C. The friction of the cords crossing each other within the block B is sufficient to prevent the user from dropping downward too rapidly. If the user desires to check himself at any time, he has only to allow the upper slide-block, B, to come in contact with or near to the check-block D, when his downward movement will be instantly checked, the adjustment of the cords being such that it is necessary for the operator to keep the check-block D away from the friction-block B in order to allow him to descend. The movement, therefore, of the user is continually under his control. He can move fast or slowly, or can stop himself at any point

required. The holes I pass through the friction-block B from end to end thereof, and the cords C are permanently held therein and prevented from becoming disengaged from the said block, as is the case with blocks which have notches in their sides or edges through which its cords are passed.

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

1. In a fire-escape, the combination of a friction-block having transverse cord-holes I passing through it and a guide loop or eye at its upper side, cords passing through said loop or eye and transverse cord-holes from opposite sides, and a strap or support attached to the block, substantially as described.

2. In a fire-escape, the friction-block B, having transverse cord-holes passing there-through, the bail A, and loop E, in combination with the cords C, passing through said loop, and also through the transverse cord-holes, substantially as described.

3. The combination of the friction-block B, provided with the support A and loop E, the

cords C C, adapted to pass through the openings in said block, the block D, and the supporting-strap G, all constructed as described.

4. In a fire-escape, a friction-block provided with one or more openings for the cords, in combination with two cords, one cord passing through the opening in one direction and the other cord passing through from the opposite direction, and said block adapted to be retarded in its sliding motion by means of the friction between the cords and the friction-block, as set forth.

5. The combination of the friction-block B, having transverse cord-holes I, and the cords C, passing through said holes from the opposite sides of said friction-block, with the check-block D, arranged upon the cords below said friction-block and adapted to be moved up or down upon said cords for increasing or decreasing the frictional resistance thereon, substantially as described.

HOMER L. BOYLE.

Witnesses:

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