(No Model.)

M. K. LEWIS & E. SANDERS.

FIRE ESCAPE.

No. 290,076. Patented Dec. 11, 1883.

Fig. 1.

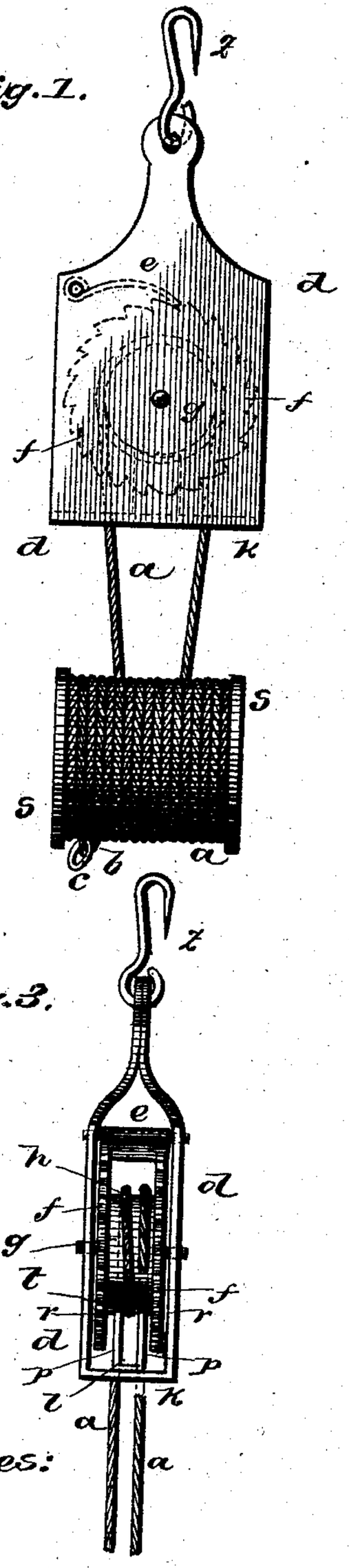


Fig. 2.

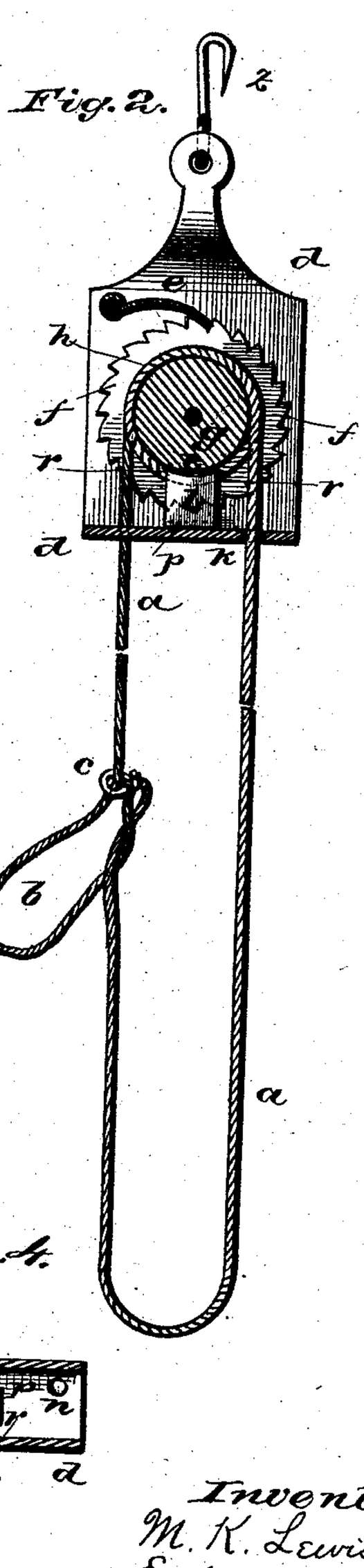
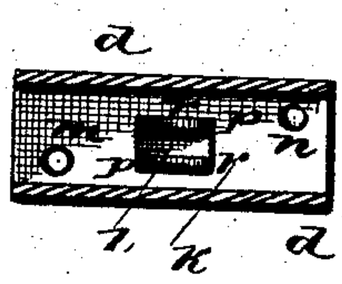


Fig. 3.

Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

MILES K. LEWIS AND EUCLID SANDERS, OF HASTINGS, NEBRASKA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 290,076, dated December 11, 1883.

Application filed June 30, 1883. (No model.)

To all whom it may concern:

Be it known that we, M. K. LEWIS and EUCLID SANDERS, citizens of the United States, residing at Hastings, in the county of Adams and State of Nebraska, have invented certain new and useful Improvements in Fire-Escapes; and we do declare the following to be a full, clear, and exact description of the invention, such as 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 letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a front view of our escape. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an edge view, and Fig. 4 is a cross-section.

This invention has relation to rope fire-escapes; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and particularly pointed out in the appended claims.

In the accompanying drawings, the rope used is indicated at *a*. This rope is designed to be twice as long as the distance to be descended, and the ends of the rope are preferably fastened together in endless form. A slip-noose, *b*, is provided on the rope, the loop working through a ring, *c*, connected to the rope.

The letter *d* indicates the pulley-block, which carries in its upper portion the transverse gravitating-pawl *e*, of sufficient breadth to extend between the walls of the block and engage both of the ratchet-flanges *f* of the pulley *g*. The groove or gutter *h* of this pulley is rectangular in cross-section, as indicated in the drawings. The bottom *k* of the block connecting the lower portions of its side walls is perforated at *m* and *n*, these perforations being somewhat obliquely arranged with reference to each other, to serve as guides for the rope *a* and prevent it from winding upon the pulley in an irregular manner.

On the inside and near the middle of the bottom *k* of the block is rigidly attached an upwardly-projecting fork, *l*, or partition-guide, extending upward into the groove of the pulley, the upper concave edges, *r*, of its prongs *p* just clearing the cylindrical base *t* of the groove. The prongs are located far enough apart to provide for the passage of a turn of the rope *a* between them, said rope passing around the pulley, as shown. The object of the fork-guide is to hold the turn of the rope in the middle of the pulley-groove, and thereby to obviate the tendency of the rope to pass over against the flange nearest the ascending rope, and causing the ascending rope to cross or ride upon itself. A spool, *s*, is also used, in connection with this device, to carry the rope in convenient and compact form, the rope being wound double upon the spool from its lower end, or end farthest from the pulley-block. The spool also serves as a carrier to convey the rope, when thrown out of a window, downward to the ground, causing the rope to become uncoiled gradually as it falls, and preventing it from tangling or becoming complicated with window-caps or other projections below.

The operation of the device is as follows: The block is suspended by means of the hook *z* at its upper end, or by a flexible cord or chain, to the upper portion or any convenient part of the inside of the window-frame. The loop *b* of the rope hangs just below the block, and below this is the spool *s*, having the remainder of the rope coiled thereon. The block should be arranged to hang just below the bottom of the upper sash.

When it is desired to use the escape, the lower sash is raised or broken out, and the spool, being thrown out of the window, descends to the ground. The loop *b* is adjusted around under the arms of a person desiring to descend, who, grasping the other branch of the rope, swings himself out of the window and descends to the ground, the speed of descent being regulated by manipulating the ascending branch of the rope. At the instant the descent is begun, the pawl of the block drops into notches of the ratchet-flanges of the pulley, so that the latter is held rigidly, and the friction of the rope on the base of the groove in the pulley renders the descent easy, very little counterbalancing-pressure being required on the ascending branch of the rope.

In lowering children or persons unable to regulate the speed of descent for themselves, this should be done by some one below, or in

the room from which the person is being lowered.

In hoisting a person from the ground to the window, the person is connected to the rope by means of the loop, and may pull himself up by means of the opposite branch; or he may be pulled up by an assistant on the ground. In this case, the motion of the rope upon the pulley being reversed in direction, the pawl does not act and the pulley turns freely in the block.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

1. The pulley-block having a gravitating pawl and obliquely-arranged guide-perforations in its base, and within said block a pulley having ratchet-flanges, substantially as specified.

2. The combination, with the rope and the pulley-block having guide-perforations in its bottom, of the rectangularly-grooved pulley, its ratchet-flanges, the pawl, and the fork-guide rising from the bottom of the block into the groove of the pulley, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

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EUCLID SANDERS.

Witnesses:
J. H. FLEMING,
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