(No Model.)

J. B. SMITH.

FIRE ESCAPE.

No. 288,131. Patented Nov. 6, 1883.

Fig. 1

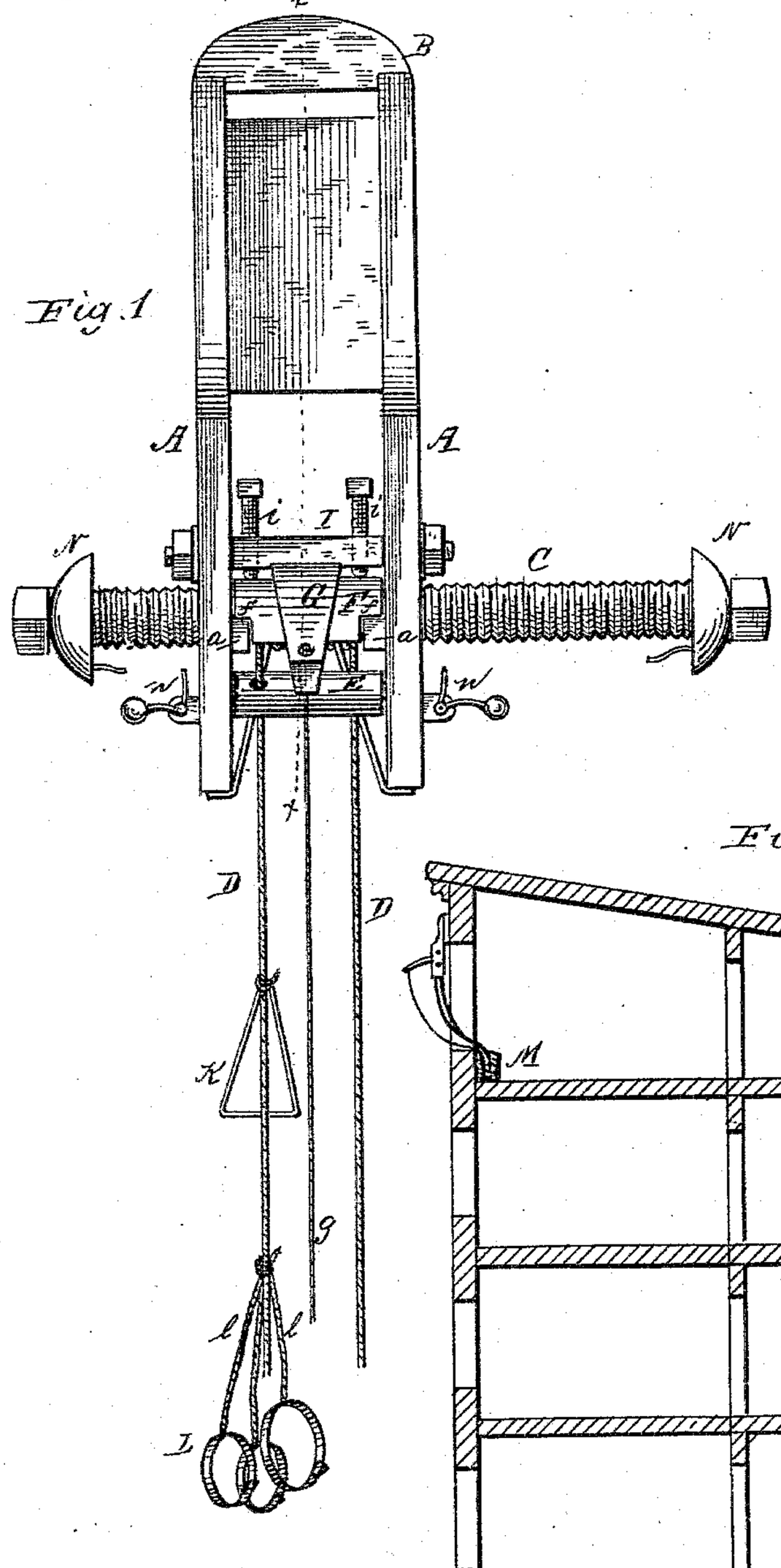


Fig. 2.

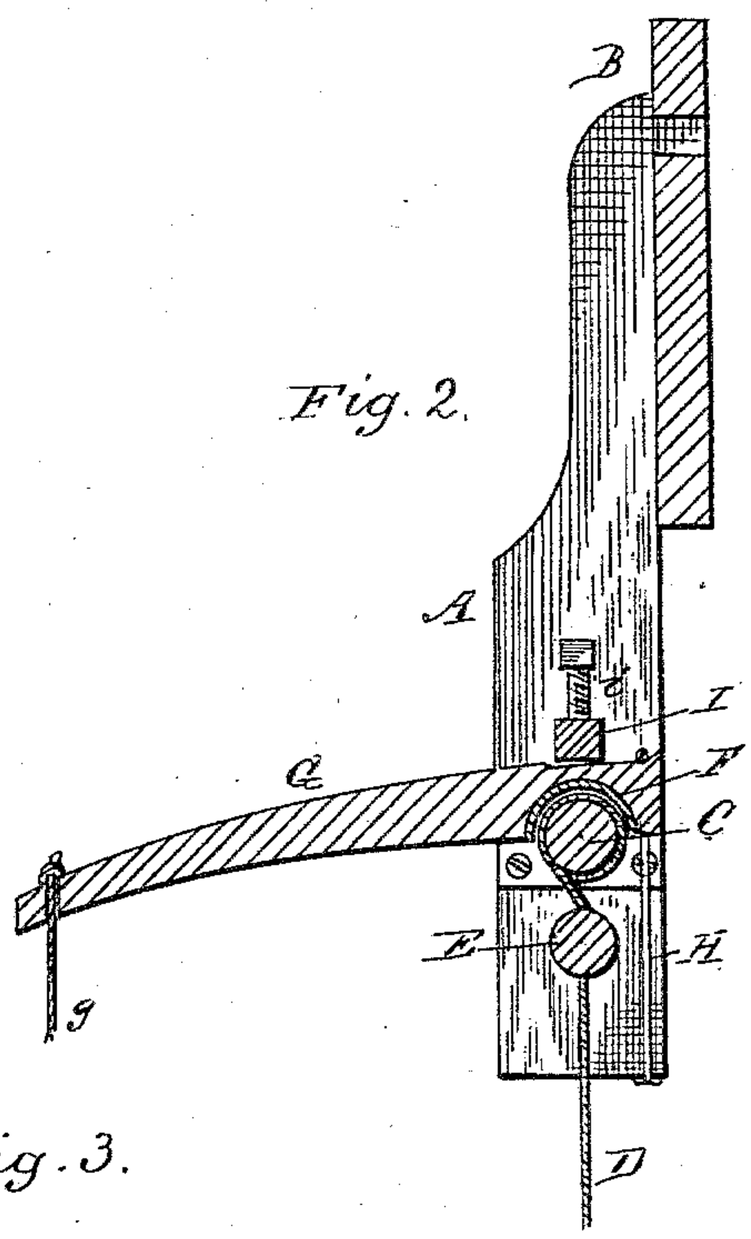
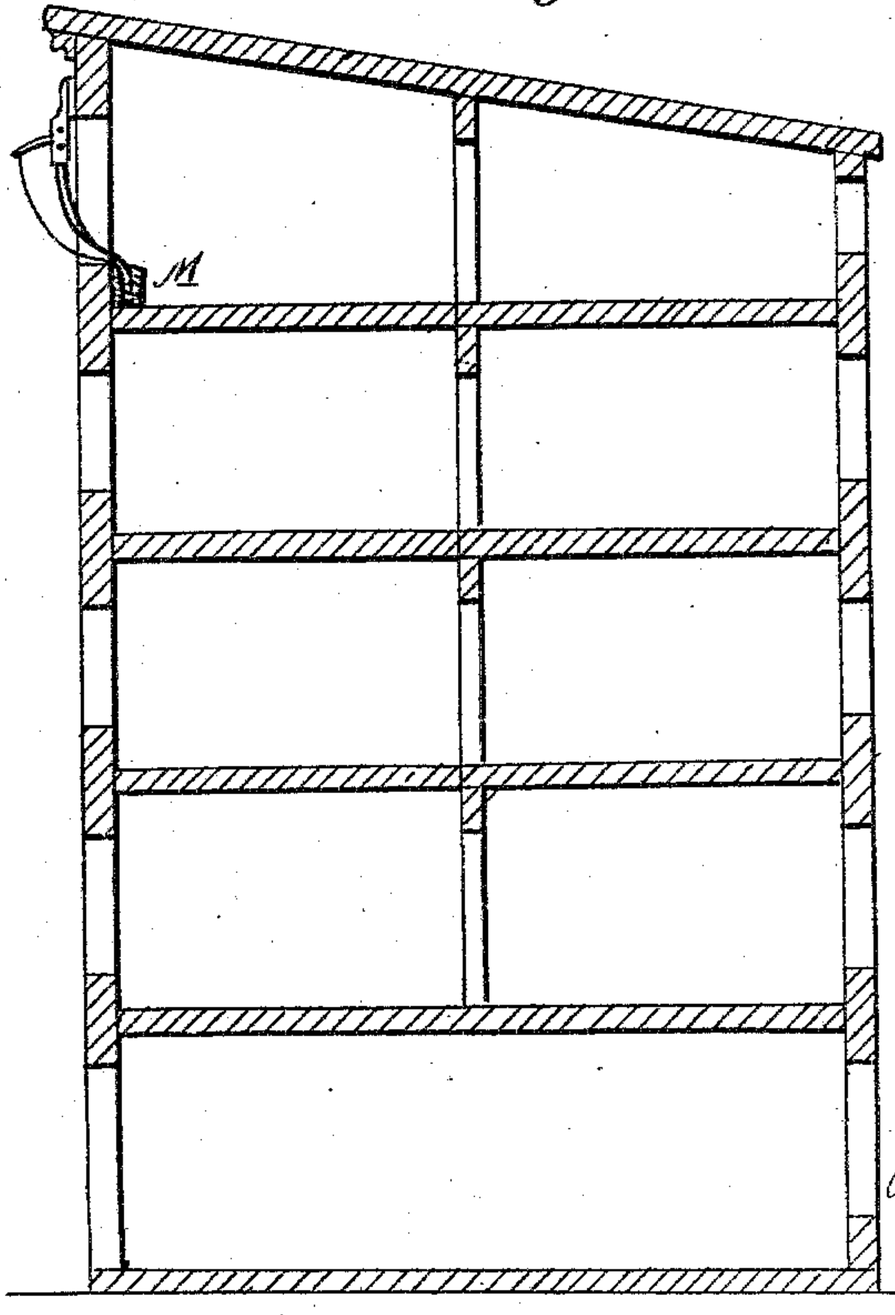


Fig. 3.



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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 288,131, dated November 6, 1883.

Application filed June 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. SMITH, a citizen of the United States of America, residing at North Buffalo, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby 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.

This invention relates to fire-escapes which are adapted to lower the inmates of a burning building from the windows thereof, the object of the invention being to provide a means of escape which is simple in its construction and operation, not liable to be misunderstood or to become inoperative from the rough usage to which this class of devices are subjected during the excitement and confusion attending fires, and which may be readily controlled either by persons escaping or others upon the ground below.

The invention consists in certain novel constructions and combinations of devices, which will be readily understood from the following particular description in connection with the accompanying drawings, in which—

Figure 1 is a front elevation of the stationary portion of my improved fire-escape and a portion of the lowering-rope. Fig. 2 is a section on the line *x x* of Fig. 1. Fig. 3 is a vertical section of the front portion of a house, showing my improved fire-escape as applied to use.

The letters A A designate two side pieces of a supporting-frame, these side pieces being connected by a stout cross-piece, B, at their upper portions. In suitable threaded bearings formed in these side pieces, near their lower ends, is arranged a screw-pulley, C, around and in the grooves of which between the side pieces, is wound the lowering-rope D, said rope being wound around the screw a sufficient number of times to prevent its slipping without turning the screw, and sustaining an ordinary load. The lowering-rope, after leaving the screw at each end of the coil thereon, passes through guide-openings formed in a loosely-turning cylinder, E, journaled in the side pieces. Upon the top of the screw and over the coil of rope thereon is loosely arranged a curved clamping-shield, F, which is prevented from falling or sliding off the screw by suitable shoulders, *f*, projecting above cleats *a*, attached to the inner sides of the side pieces. Upon the top of the shield F is arranged the inner portion of a check-lever, G, which is notched to fit upon the upper surface of said shield, and the inner end of said lever passes under and is held by a fulcrum-loop, H, which is firmly secured to the side pieces. The outer end of the lever G is provided with a depending cord, *g*, by which the lever may be operated to force the shield firmly against the coil of rope upon the screw, and thus check the lowering of the rope or regulate its descent when loaded. Immediately above the lever and the shield is secured a cross-bar, I, through which pass clamping-screws *i*, the tips of which may be driven against the shield to normally limit its upward play.

The lowering-rope D is an endless rope, and the length of its depending loop is so regulated that it will touch the ground when depending from the screw. When the stationary part of the apparatus is in its fixed position, a sufficient length of the rope to reach from one end of the coil to the ground is left entirely clear of knots or other obstructions to its smooth passage around the screw, and when such portion of the rope is fully extended the other depending portion will support its passenger-securing devices in proper position to receive passengers from the respective windows of the building. These passenger-supporting devices consist of stirrups K, firmly secured to the rope, and belts L, also firmly secured to splices or branch pieces *l* of the main rope at a proper distance above the stirrups, respectively, to be buckled around the bodies of the passengers below the arms. The stirrups may be of sufficient size to receive the feet of two or three passengers, and two or three of the splices with attached securing-belts may be arranged closely together, in order that as many persons may escape at the same time from one window. The splices or branches *l* should be of proper length to ex-

tend inside of a window to a room, so that the inmates may buckle on the belts while standing in the room.

When the apparatus is not in use, the lowering-rope is to be folded up carefully and placed in a box, (shown at M in Fig. 3,) and the stationary part of the apparatus is firmly secured by hooks or bolts directly over one of the windows, preferably in the top story of the house. At each end of the screw B is secured a gong, as shown at N, Fig. 1, and a striker or hammer for each gong is fixed upon the side pieces, as shown at *n*, so that, when the apparatus is in operation and the screw traversing back and forth, these gongs will be automatically sounded, and thus notify persons of the location of said apparatus and when to load on, and they will also give notice when the fire-escape is being used for improper purposes.

When a fire is discovered in a building, the person or persons who first reach the window where the stationary part of the apparatus is secured should open the window and throw out the box containing the rope, and then immediately sound one or both of the gongs by means of suitable hammers or hand-clappers, which should be kept in an accessible and conspicuous place near the apparatus. These gongs will notify the other inmates of the house of the location of the apparatus.

A person wishing to escape from a window will seize a belt, L, and buckle it around the chest under the arms, and then, placing one or both feet in a stirrup below, will take hold of the opposite clear portion of the rope and allow it to slip through the hands loosely as the rope descends on one side, under the weight of the passengers. As fast as the passengers reach the ground they will unbuckle their straps and step off the stirrups, and these straps and stirrups, as will be readily understood, will continue to travel, and thus ascend, so that the passenger-receiving portion of the rope will be elevated as fast as relieved of its passengers, and will be brought into position to receive a fresh load, the clear portion and passenger-receiving portion alternately changing position from side to side. As the rope descends with its load the friction of the coiled portion on the screw causes said screw to rotate and traverse its bearings longitudinally, the friction of the rope and of the bearings causing the screw to have a very smooth and steady motion, which pays off the rope freely, and at the same time under such control that there is no liability of slipping and precipitating the passengers to the ground.

The especial office of the check-lever G is to enable a person occupying a position near the stationary part of the apparatus to safely control the lowering of children, ladies, and other persons liable to become panic-stricken and helpless during the excitement of a fire. A cool person, having access to the check-lever or its operating-cord *g*, may strap helpless or confused persons to the lowering-rope, swing them clear of the windows, and by properly operating the lever can allow the loaded rope to descend gradually or stop it, as desired, to receive other passengers.

By placing suitable guide-pulleys on the wall of a building the path of the rope may be diverted from directly in front of the windows to the sides thereof, in order that the passengers may not be burned by flames protruding from the windows.

The apparatus is readily removable from its supports, in order to be moved from room to room, as found desirable.

The average size of the frame will be about ten inches deep, one foot wide and one and one-half foot high, though it may be made shorter or longer, if convenience requires.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fire-escape, the combination, with a suitably-supported longitudinal-traveling screw-pulley, of a lowering-rope coiled about said screw, and having depending portions which are respectively clear and provided with passenger-receiving devices, substantially as described.

2. The combination, with the side pieces, A A, firmly connected together and provided with threaded bearings, of the traversing screw-pulley arranged in said bearings, and the endless lowering rope provided with the passenger-receiving devices, and having a portion of its length coiled in the grooves of the screw-pulley, substantially as described.

3. In a fire-escape, the traversing screw-pulley arranged to operate a lowering-rope, and carrying one or more gongs, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH B. SMITH.

Witnesses:

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