(No Model.)

H. B. CALKINS.

FIRE ESCAPE.

No. 383,211. Patented May 22, 1888.

Fig. 1.

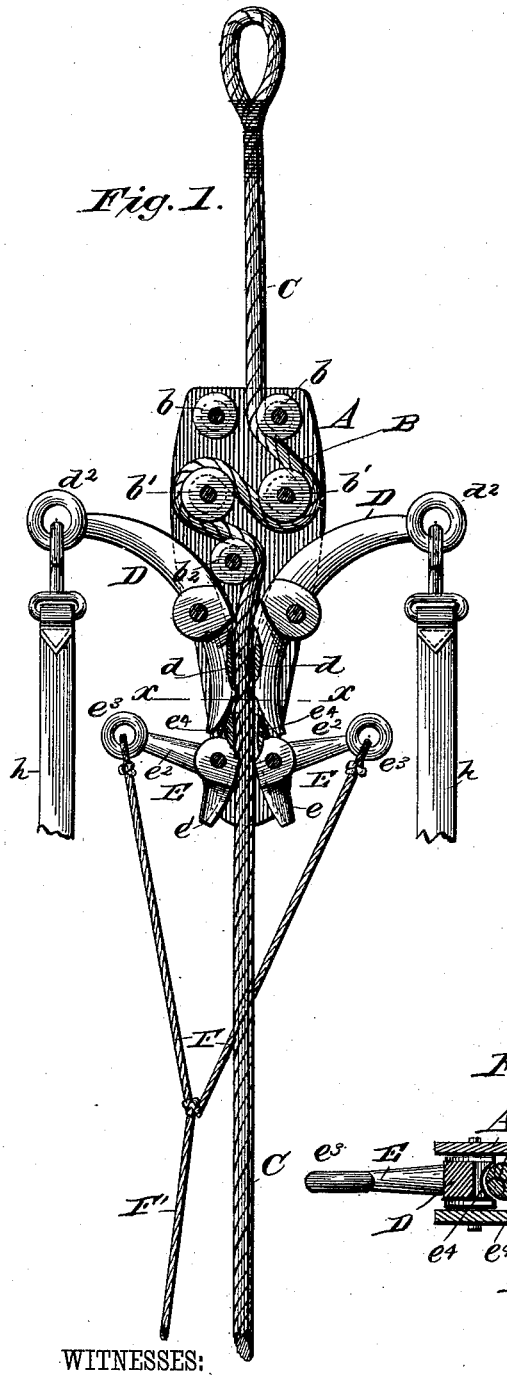


Fig. 2.

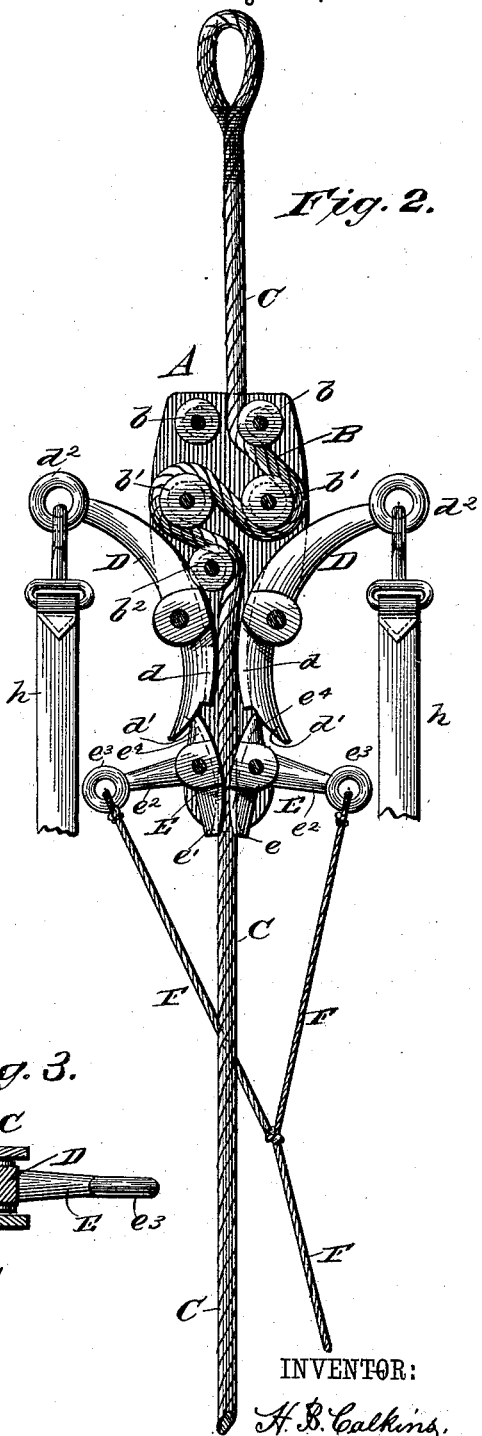
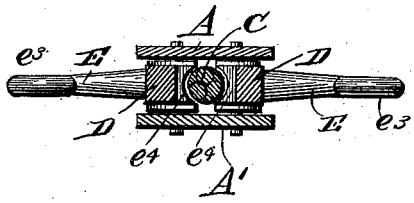


Fig. 3.



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HENRY B. CALKINS, OF HYNDSVILLE, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 383,211, dated May 22, 1888.

Application filed November 18, 1887. Serial No. 255,506. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. CALKINS, of Hyndsville, in the county of Schoharie and State of New York, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention relates to an improved portable fire-escape, and has for its object to provide a device adapted for use with a rope, whereby a person may descend with safety from any height, and wherein the rapidity of the descent will be completely under the control of the operator, and wherein, also, in the event of the disability of the descending party, the device may be operated from below.

The invention consists in the construction and operation of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a plan view of the device with the face-plate removed, illustrating the carrying-arms as clamping the rope. Fig. 2 is a similar view to Fig. 1, illustrating the carrying-arms as held out of contact with the rope; and Fig. 3 is a transverse section on line *x x* of Fig. 1.

In carrying out the invention a series of friction-rollers, B, are journaled in two spaced plates, A A′, above the center of said plates, which rollers are preferably five in number and provided with a grooved periphery. Two of the rollers, *b*, are arranged in transverse alignment at the top of frame a sufficient distance apart to admit the passage of a stout rope, C, between them. Below the said rollers *b* two more larger rollers, *b′*, are located transversely the frame, and below the pair of rollers *b′*, at one side the center of the frame, a single roller, b^2, is journaled, of a diameter equal to the upper rollers.

The rope C is provided with an eye or an attached fastening or gripping device at the upper end, purposed for attachment to a suitable support, and after having been passed between the upper set of rollers, *b*, the rope is carried over one of the larger rollers, *b′*, and up and around the other transversely-aligning roller, and down in contact with the single roller b^2, and centrally and longitudinally the frame out therefrom. The rope C may be of any desired length and constructed of any suitable material.

At each side and between the plates A A′ aligning curved arms D are pivoted in such manner as that their convex surfaces are contiguous, the said convex surfaces being provided with a longitudinal groove, *d*, extending from the pivotal point downward, terminating near the lower end. The said lower ends of the arms D, which for convenience I designate "carrying-arms," are provided with a rabbet, *d′*, upon the inner face, as shown in Fig. 2, and the said arms D terminate at their upper outer ends in an eye, d^2.

As the arms D are pivoted below their center, the lower ends remain at all times within the frame, while the upper ends project quite a distance out beyond the frame, for a purpose hereinafter set forth.

At the lower end of the frame, between the side pieces, A and A′, angle trip-levers E are pivoted, the vertical members *e* of which oppose each other, a sufficient space being allowed between the said members to admit of the passage of the rope C. The contiguous edges of the said vertical members are provided with a longitudinal groove, *e′*.

The horizontal member e^2 of the angle-levers E is made to project out from the frame, terminating in an eye, e^3, and at the intersection of the vertical and horizontal members of the said angle-levers is a vertical boss, e^4, which boss is adapted to bear against the rabbeted ends of the arms D.

The groove *e′* in the vertical member *e* is continued upward in the boss, and the inner grooved face of the said vertical member and boss, the two being essentially integral, is made convex, as illustrated in Fig. 2.

To the eyes e^3 of the angle-levers ropes F are secured, which ropes are carried downward a distance and spliced to a single rope, F′, the said single rope being adapted to extend downward, substantially of even length and parallel with the rope C. In the eyes of the arms D the end straps, *h*, of any suitable harness are clipped.

In operation, the end of the rope C having

been made fast to a convenient support, the other end of the said rope and likewise the rope F′ are uncoiled to reach the ground. The operator thereupon secures himself or herself in the harness and attempts the descent. As soon as the weight of the person is brought to bear upon the carrying-arms, it causes the said arms to clamp the rope C at their inner or lower ends, and the device remains stationary. By grasping the ropes F or the rope F′, however, and pulling downward upon the same, the bosses upon the angle-levers are made to engage the lower end of the carrying-arms and force them from contact with the main rope C, as shown in Fig. 2, whereby the frame is permitted to slide down the rope with greater or less rapidity, according to the manipulation of the angle-levers, the friction-rollers tending to prevent a too-rapid descent.

In the event the person attempting the descent should be disabled and not able to manipulate the angle-levers, the descent may be controlled from below through the rope F′.

Having thus 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 frame having a series of friction-rollers pivoted therein near the upper end, of curved carrying-arms pivoted in said frame below the friction-rollers, with their convex edges inward, and angle trip-levers pivoted in said frame below the arms, each provided with a boss engaging the lower end of said arms, substantially as described.

2. In a fire-escape, the combination, with a frame having a series of friction-rollers pivoted near the upper end, of aligning curved carrying-arms pivoted below the friction-rollers, having their convex edges inward, and provided with a groove in said convex edges, and an eye at the outer ends, angle-levers pivoted below said arms, and a boss integral with the horizontal member, adapted to engage the lower end of the arms, substantially as described.

3. In a fire-escape, the combination, with a frame having a series of friction-rollers pivoted at the top, and a rope passing around said rollers and through the frame, of curved aligning carrying-arms pivoted at each side of the rope below the friction-rollers, having their convex sides inward, and provided with a groove in said edges adapted to receive the rope, and eyes at their outer extremities to receive the harness, angle-levers pivoted below said arms, a boss integral with the vertical members of said levers engaging the lower ends of the arms, said levers provided with an eye at the extremity of their horizontal members, and a rope secured to said eyes, substantially as and for the purpose herein set forth.

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Witnesses:
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