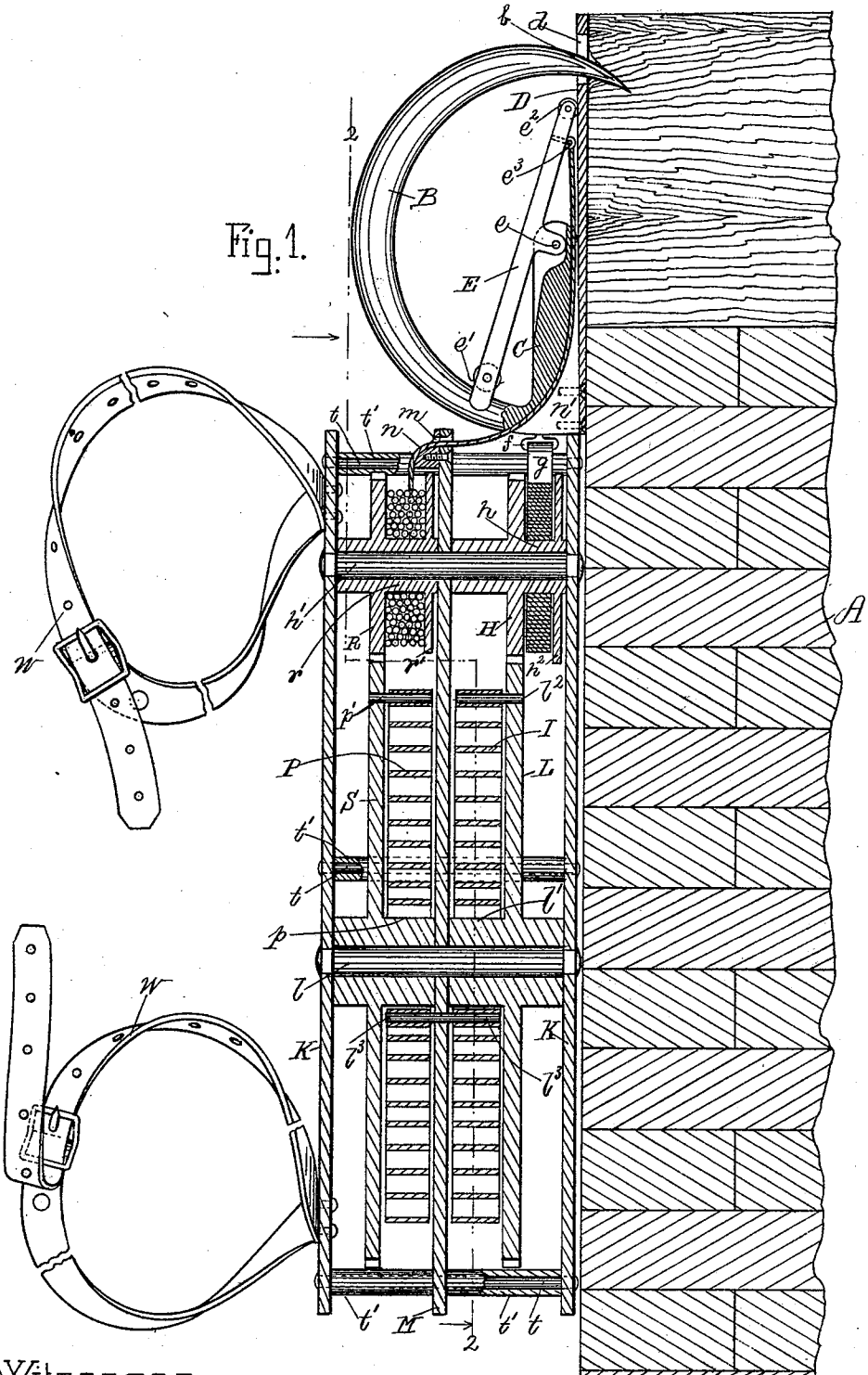
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E. LAWTON.

FIRE ESCAPE.

No. 517,872. Patented Apr. 10, 1894.

Fig. 1.



Witnesses.

Laurits N. Koller.

Annah B. Hammerich

Inventor.

Edward Lawton
by W. A. Copeland
his atty.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

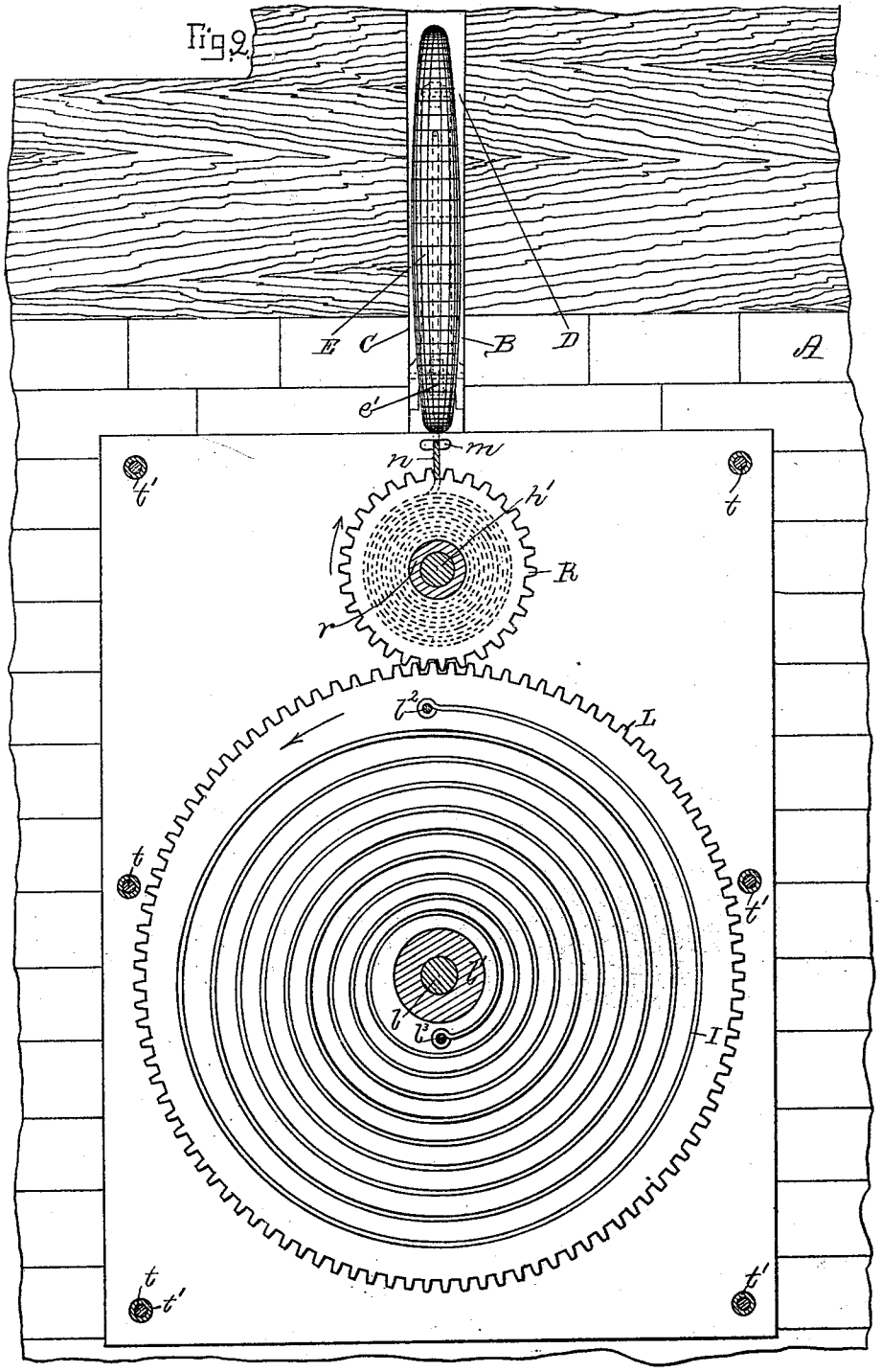
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E. LAWTON.

FIRE ESCAPE.

No. 517,872. Patented Apr. 10, 1894.

Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD LAWTON, OF QUINCY, MASSACHUSETTS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 517,872, dated April 10, 1894.

Application filed November 17, 1893. Serial No. 491,204. (No model.)

To all whom it may concern:

Be it known that I, EDWARD LAWTON, a citizen of the United States, residing at Quincy, in the county of Norfolk and Commonwealth of Massachusetts, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to a portable fire escape suitable for individual use by occupants of rooms in high buildings, but more especially intended for use by firemen while engaged at a fire, so that they may have them attached to their person and ready for immediate use in case their other means of escape are cut off.

My invention consists in a spring-coiled tape or cord wound upon a reel, and mounted in a suitable frame, a hook formed on the arc of a circle attached to the outer end of the tape, said hook having a stanchion extending as a radius to the circle, a spring-steel plate attached to the stanchion, an opening through which the point of the hook passes, a movable lever pivoted intermediate of its ends to the stanchion and having one end adapted to slide on the hook, and the other end adapted to move on the spring-plate, a releasing cord attached to said lever and spring-coiled around a reel mounted in the frame, and a saddle or belt attached to the frame and adapted to be secured to the body whereby when the hook is fastened to a support, the person to whom the device is strapped may lower himself to the ground, the spring operating to ease the descent, and the second cord uncoiling at the same time with his descent and affording a means of releasing the hook from its grip as will be more particularly described and claimed.

In the drawings, Figure 1 is a vertical section showing my device with the hook stuck into the wall of a building as it would appear if a man were about to descend by it, with the representation of the man omitted for simplicity of drawing. Fig. 2 is a vertical section on line 2 2 of Fig. 1.

A represents the wall of a building or part of the frame of a window with the point of the hook B thrust into it as it would be by a blow when about to be used. This hook is made on a curve very nearly or quite the arc of a circle. At the butt of the hook there is an upright extension or stanchion C in form of a radius to the circle on which the hook is formed. This stanchion is integral with or rigidly attached to the butt of the hook. A spring plate D made tapering in thickness from the top to the bottom is bolted to the outer face of the lower part of the stanchion, and near its upper end has an opening d through which the point b of the hook B projects. A lever E is pivoted intermediate of its ends to the upper end of the stanchion C at e. The lower arm of this lever has a forked end embracing the hook B as a guard and has a friction roller e' pivoted within the fork to travel along the inner periphery of the hook. The upper arm of the lever is a little shorter than the lower arm and does not extend quite up to the hook. It has a friction roller e^2 which when the lever is turned on its pivot rolls along the plate D. Attached to the lower end of the stanchion or to the butt of the hook is a ring f to which is secured the end of a strong tape g which is of sufficient strength to sustain the weight of a man, and of sufficient length to reach to the ground from the highest point at which it is likely to be used. This tape is coiled around the hub h of a pinion wheel H which revolves on the axle h' fixed in the supporting frame K. A flat tape is preferable to a rope for this purpose because it will coil better and in less space. A guard h^2 keeps the tape from slipping sidewise and getting tangled. This pinion H gears with a larger wheel L which revolves on the axle l fixed in the frame K K and which has a coiled spring I on its face around the hub l' with its outer end fastened to a pin l^2 projecting from the face of the wheel, and with its inner end fastened to a pin l^3 projecting from the plate M. The spring is wound up by the uncoiling of the tape.

A releasing cord n is attached to an eye e^3 on the short arm of the pivoted lever E near its upper end, the operation of which will be more fully explained hereinafter. This cord passes down through a groove n' in the stanchion C, thence through an eye m in the upper end of the partition M. The cord is then coiled around the hub r of a pinion R which revolves on the same axle h' as does the pinion H, the two pinions, however, being wholly

independent of each other in their rotation. A guard r' keeps the cord from slipping off. The pinion R gears with a larger wheel S which revolves on the same axle l as the wheel L. This wheel also has a coiled spring P around the hub p with its outer end secured to a pin p' projecting from the face of the wheel, and its inner end secured to a pin projecting from the plate M, and for convenience the pin l^2 may extend through the partition and serve for both springs. The cross rods t having sleeves t' are portions of the frame and connect the side plates K K.

The belts W serve to secure the device to the body. It can be strapped to the back or to the front of the body whichever is more convenient for the wearer, and can be made in such small compass that a fireman can easily wear it while at work so as to have it in readiness for use in any emergency. When occasion arises for its use he will thrust the hook into any convenient place in the wall or window frame, as shown in the drawings, and then stepping off, with the tape g grasped in his hands he will gradually descend as he allows the tape to unwind, slipping through his hands. The tension of the spring I should be so great that the weight of an ordinary sized person will be about sufficient to overcome it, or a little more than enough, so as to allow for under sized people, therefore the fireman will have to support with his hands only a small portion of his own weight. The wheel L on which is fastened the spring is made larger than the pinion H so that the tape can unwind several revolutions of the pinion while the large wheel is revolving once. At the same time that he is descending and the tape is unwinding, the releasing cord n is also unwinding. The partition plate M is for purpose of preventing any entangling between the two. When the fireman reaches the ground, the springs I and P are both wound up, and if there are others to follow in descent by the same means, they can either come down the tape hand over hand, or the whole device can be returned to the top again by simply releasing the detention at the bottom and the unwinding of the springs will wind up the tape and cord and the whole thing will be drawn to the top. If there are no others to descend and it is desired to pull down the hook, it will be done in the following manner: Hold the frame so it cannot wind up and pull down on the releasing cord n. This will pull down the upper end of the lever E and cause the other end of the lever to ride out on the hook. As the lever is pivoted at e this movement will tend to thrust the hook away from the wall and withdraw the point of the hook from its engagement and allow it to drop to the ground. The spring plate D makes the withdrawal easier than if it were rigid. The stanchion C and spring plate D also serve to steady the hook and render it less liable to sway and twist out of engagement during the descent than if the bare hook were used.

What I claim as my invention is—

1. In a portable fire-escape, the combination of a hook B formed substantially on the arc of a circle, a stanchion extending from the butt of the hook in the line of a radius to the curve of the hook toward the center, a spring-plate secured to the stanchion, its free end extending upward beyond the hook and formed with a slot through which the point of the hook passes, a tape attached to the butt of the hook and wound upon the hub of a pinion wheel mounted on an axle in a suitable frame, a second wheel mounted in said frame and geared with said pinion and having a coil spring which winds up with the unwinding of the tape, and suitable means for securing the device to the person, substantially as described.

2. In a portable fire escape, the combination of a hook B formed substantially on the arc of a circle, a stanchion extending from the butt of the hook in the line of a radius to the curve of the hook toward the center, a spring-plate secured to the stanchion, its free end extending upward beyond the hook and formed with a slot through which the point of the hook passes, a lever pivoted to the stanchion of the hook having one arm which slides on the inner periphery of the hook, its other and shorter arm sliding on the spring-plate, a releasing cord attached to said shorter arm and wound upon the hub of a pinion wheel mounted in a frame, another wheel mounted in said frame and geared with said pinion wheel, and having a coil spring which winds up with the unwinding of the cord, all combined so that the hook may be detached by pulling the cord, substantially as described.

EDWARD LAWTON.

Witnesses:
WM. A. COPELAND,
CHARLES P. SEARLE.