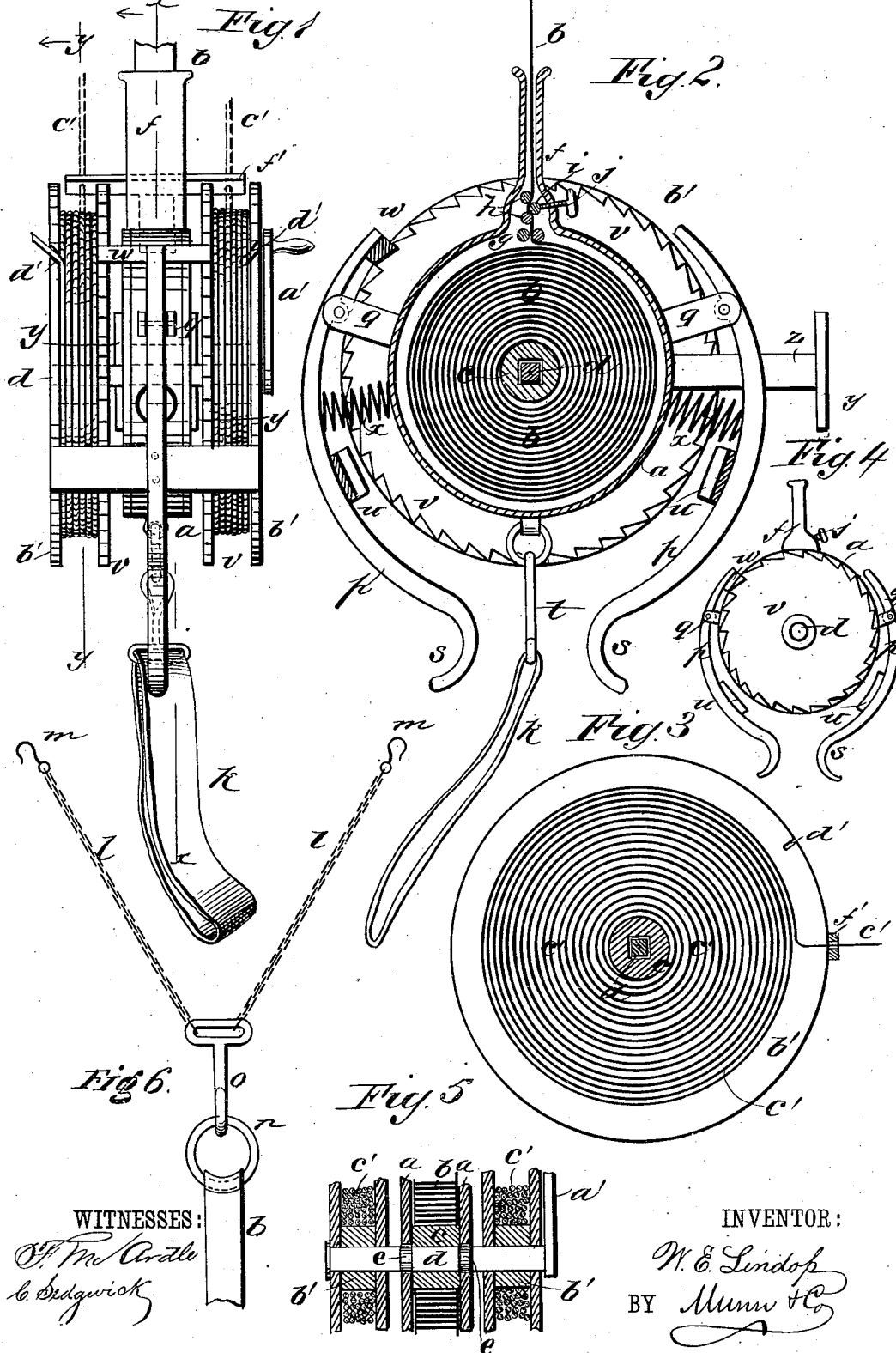


(No Model.)

W. E. LINDOP.
FIRE ESCAPE.

No. 306,843.

Patented Oct. 21, 1884.



WITNESSES:

O. F. McCrell
C. Sedgwick

INVENTOR:

W. E. Lindop
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM EVANS LINDOP, OF ST. THOMAS, ONTARIO, CANADA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 306,843, dated October 21, 1884.

Application filed May 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. LINDOP, of St. Thomas, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

My invention consists in the combination and arrangement of parts, as will be herein after fully described and claimed.

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

Figure 1 is a front elevation of my improved fire-escape. Fig. 2 is a sectional elevation on line *x x* of Fig. 1. Fig. 3 is a sectional elevation of Fig. 1 on the line *y y*. Fig. 4 is a side elevation on a smaller scale than the rest of the figures. Fig. 5 is a detail in section along the axis of the coil of the ribbon and the reels, and Fig. 6 is a detail of the device for suspending the apparatus from the window of a building.

I make a suitable sheet-metal case, *a*, of small size and coil a steel or other metal ribbon, *b*, in it on a small drum, *c*, attached to a shaft, *d*, fitted with journals *e*, arranged to revolve in bearings in the axis of the case, constructing said case with a radial guide-extension, *f*, from the periphery, out of which the ribbon is to run, when in use, through a pair of guide-rollers, *g*, to prevent friction of the ribbon against the case; and when I make the escape in the smallest and simplest form for being carried about in the pocket, and for one service only at a fire, I make a brake consisting of two rollers, *h*, arranged in fixed bearings within guide *f*, and an adjustable roller, *i*, having an adjusting-screw, *j*, by which the operator may control his descent when slung from the case by a strap, *k*, by turning the screw one way or the other, to cause the rollers to bind the ribbon with more or less friction, the tape being suspended from the window sill, frame, or other suitable part of the building or object inside of the window to which the strap may be hitched by the chains *l* and hooks *m*, which are attached to the ring *n* in the end of the ribbon by a snap-hook, *o*.

When it is not required to make the apparatus small for carrying in the pocket, and for a better form of brake, also for a means of positively holding the ribbon while adjusting the apparatus, and also for enabling a person remaining in the building to control the descent of others, I will employ a couple of brake-levers, *p*, pivoted to supporting-arms *q*, attached to the periphery of the case, so that the handles *s* range with the suspending-hook *t* suitably for being manipulated by one slung by the strap *k*, or standing in the window when the case is inverted and hung therefrom by the hook *t*, said levers having friction brake-shoes *u* to bear on disks *v*, fitted to the shaft *d*, for revolving with it; and I also make ratchet-notches in the edges of these disks, and provide one of the levers with a pawl-bar, *w*, crossing the case *a* from one to the other of these notched disks and forming a stop to hold the ribbon whenever the brakes are not pressed on the disks. The pawl *w* is to be made to engage the ratchets automatically by a spring, *x*, which will instantly cause the stoppage of the ribbon in case the operator should at any time accidentally let go his hold of the brake-levers. Both levers may be fitted with a pawl-bar, *w*, and spring *x*, if desired.

When the disks are notched for the purpose of using the stop-pawls, the brake-shoes will be wide enough to overlap a number of the ratchet-notches, so that they may bear directly on the points of the teeth without injurious effect. It will be seen that this form will enable the descent to be controlled either by the person descending when the ribbon is attached to the building and the case descends or by a person remaining in the house when the case is reversed and suspended by the hook *t*, and the person descending is slung from the ribbon. To facilitate this latter operation I attach a foot-rest, *y*, to one side of the case by a standard, *z*, to hold the case out away from the side of the building for preventing obstruction of one of the levers by bearing against the side of the building. The ribbon is ordinarily to be wound up by a crank, *a'*, attached to the shaft *d*, by the person remaining in the house, to readjust the apparatus for repeated use; but to enable the

case to be raised up to the window again by one on the ground when the ribbon is attached to the window and the apparatus is adjusted to descend, I mount a wire-reel, *b'*, on the shaft *d* each side of the case *a*, preferably using the disks *v* for the inner disks of the same, and coil a wire, *c'*, on each reel in reverse of the coil of the ribbon *b*, fastening the outer ends of the wires, as by pressing them into nicks *d'* of the edges of the reel, or by any other approved means, to keep the coils intact while the case is descending, said coils to be employed for revolving the drum *c* to wind up the ribbon, and thereby cause the case to run up the ribbon by uncoiling the wires from the reels, which I do by detaching the ends of the wires from the nicks *d'*, passing them through the eyes of a guide-bar, *f'*, twisting the ends together, and then running along the ground away from the building, by which it will be seen that the case will be easily and quickly run up the ribbon again, the ribbon winding on the drum as the wires unwind from the reels. In practice the reels will be made larger than the drum of the ribbon, to facilitate the work by greater leverage of the reels; but the wires will have to be longer. Two reels of wire are employed to balance the pull of the wires on the case and prevent the case from turning and fouling the wire, as would be the case with one wire only.

It is to be understood that this improved fire-escape may be made in various sizes, according to the nature of the case, and I propose to construct it in any desired large size for hotels and other large buildings.

If preferred, a sack may be employed instead of the sling, for more securely holding persons requiring it, and, if desired, two or more of the devices may be used side by side and a little distance apart, with one sack or crib suspended from both, and a windlass may be employed for working the reel-wires to cause the ascent of the cases.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The combination of the case *a*, revolving drum *c*, steel ribbon *b*, friction-disks *v*, brake-levers *p*, and a pawl-bar, *w*, said friction-disks having ratchet-notches, and the ribbon and case having attaching devices, substantially as described.

2. The combination of the case *a*, revolving drum *c*, steel ribbon *b*, friction-disks *v*, brake-levers *p*, pawl-bar *w*, and a bracing-foot, *y*, said disks having ratchet-notches for the pawl-bar, and said ribbon and case having attaching devices, substantially as described.

3. In a fire-escape, the combination of the case *a*, provided with the vertical guide-tube *f*, guide-rollers *g*, friction-rollers *h*, in vertical alignment with each other, intermediate roller, *i*, a set-screw, *j*, bearing against the roller *i*, and the shaft *d*, provided with the ribbon *b*, said ribbon *b* passing between the rollers *g*, and between the two rollers *h* and roller *i* and guide-tube *f*, substantially as set forth.

4. The combination, with the casing *a*, shaft *d*, drum *c*, ribbon *b*, and friction-disks *v* on opposite sides of the ribbon, of the levers *p*, pivoted to the arms *q* on the case, and friction brake-blocks *u* on said levers *p* below the arms *q*, said levers being curved to correspond to the case, substantially as set forth.

5. In a fire-escape of the character described, the combination of the portable case *a*, ribbon *b*, and shaft *d* with the drums *b'* *b'*, fixed to the shaft *d*, and provided with wires *c'* *c'*, coiled thereon in a direction opposite to the coil of the ribbon, whereby when the ribbon has become unwound by the descent of an article or person it may be wound again by pulling on the wires, substantially as set forth.

WILLIAM EVANS LINDOP.

Witnesses:

JOHN BAIRD,
C. E. LINDOP.