

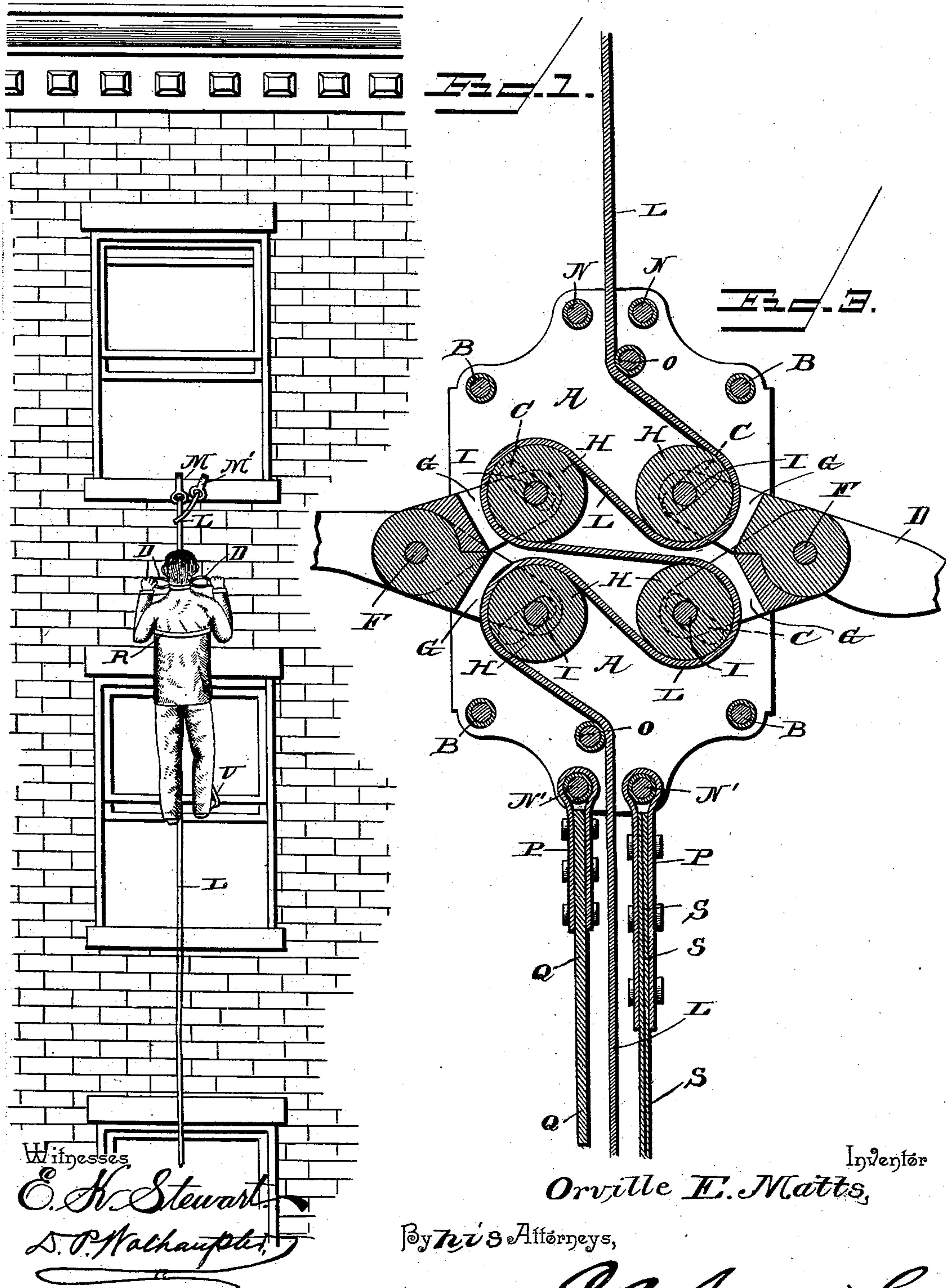
(No Model.)

2 Sheets—Sheet 1.

O. E. MATTS.
PORTABLE FRICTION FIRE ESCAPE.

No. 506,707.

Patented Oct. 17, 1893.



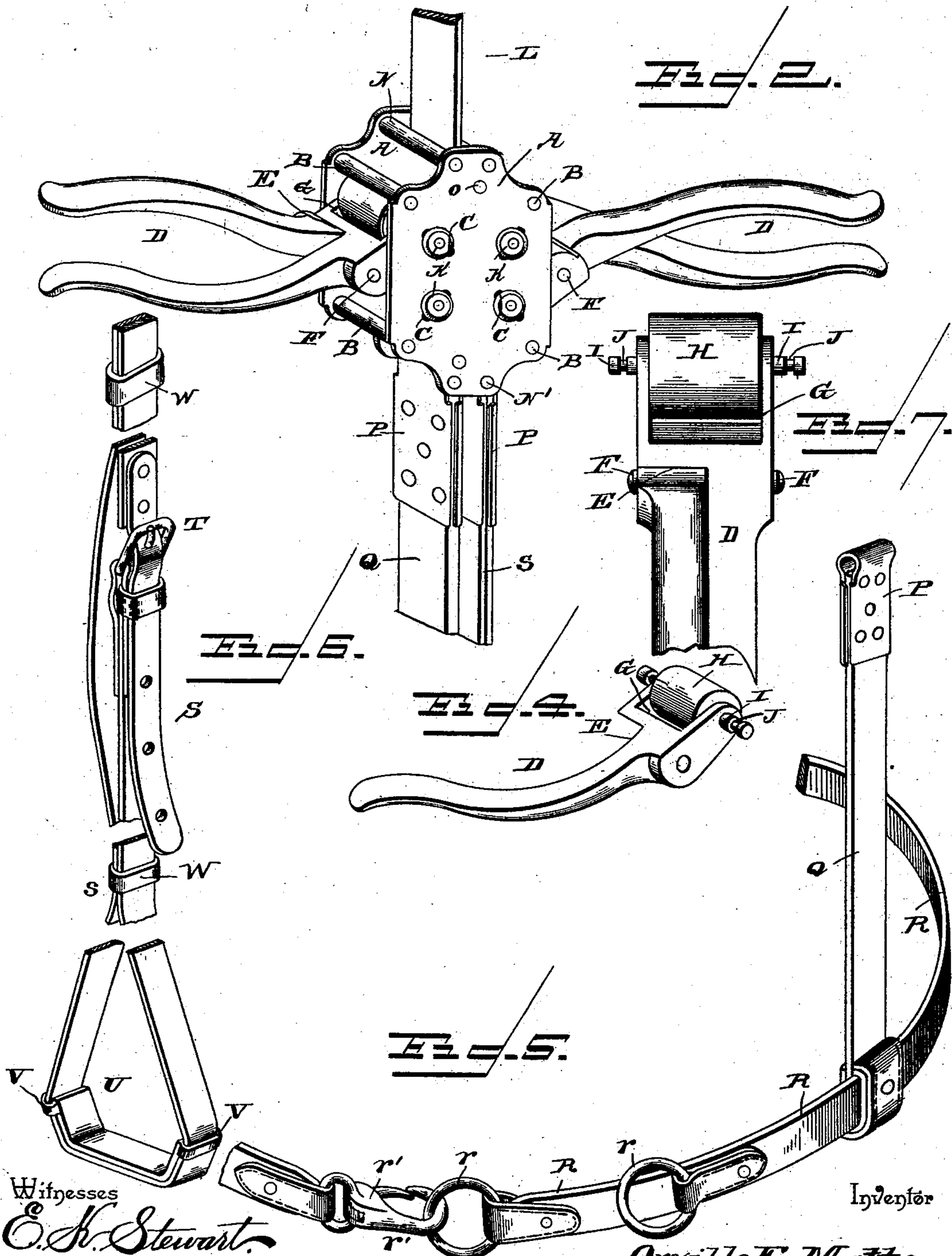
(No Model.)

2 Sheets—Sheet 2.

O. E. MATTS.
PORTABLE FRICTION FIRE ESCAPE.

No. 506,707.

Patented Oct. 17, 1893.



Witnesses
E. H. Stewart.
S. P. Wolhaupter,

By his Attorneys,

Orville E. Matts,

Chicago, Ill.

UNITED STATES PATENT OFFICE.

ORVILLE E. MATTS, OF PAOLI, WISCONSIN.

PORTABLE FRICTION FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 506,707, dated October 17, 1893.

Application filed February 24, 1893. Serial No. 463,572. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE E. MATTS, a citizen of the United States, residing at Paoli, in the county of Dane and State of Wisconsin, have invented a new and useful Portable Friction Fire-Escape, of which the following is a specification.

This invention relates to fire-escapes; and it has for its object to provide an improved portable fire escape which shall be simple in construction and efficient in operation.

To this end the main and primary object of the present invention is to provide a comparatively inexpensive fire escape, having the essential qualities of occupying but a small space, capable of being carried readily in a satchel or as a part of a traveler's outfit, and, principally, one which can be easily suspended from any part of a building so that a person can quickly descend to the ground in the case of fire, with perfect safety, and with the machine under perfect personal control.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a front view of an apparatus constructed in accordance with this invention, as applied for use. Fig. 2 is an enlarged detail in perspective of the fire escape, the attachments being separated therefrom. Fig. 3 is a central vertical longitudinal sectional view of the construction disclosed in Fig. 2. Fig. 4 is a detail in perspective of one of the handle levers carrying the friction rollers. Fig. 5 is a detail in perspective of the body belt. Fig. 6 is a similar view of the stirrup attachment. Fig. 7 is a detail plan view of a pair of the handle levers.

Referring to the accompanying drawings, A A represent opposite box plates firmly spaced from and connected with each other by the intermediate spacing bars B, and each of said plates A, is provided in the body thereof with the opposite pairs of inclined slots C.

Arranged to work between the spaced box plates A, at their inner ends, are the opposite pairs of handle grip levers D. The handle grip levers D, of each pair, are halved onto each other near their inner ends at E,

and are pivotally connected at such point on the pivot pins F, and beyond their point of pivot the levers of each opposite pair are provided with inner U-shaped yoke ends G, which accommodate the friction rollers H. The friction rollers H, are journaled on the spindles I, having their opposite ends mounted in opposite sides of the U-shaped yokes G, and provided beyond said sides with extended pin portions J, which project through and work in the slots C, of the plates A, and said pin portions J, have connected to their extremities the rivet heads K, sliding upon the outer faces of the plates A, and serving to hold the parts in a working position. Now by reference to the drawings, it will be clear that the friction rollers of one pair of grip levers are directly opposite and in the same plane with the corresponding friction rollers carried by the opposite pairs of levers, so that as the opposite pairs of handles are grasped simultaneously, by a person, the movement of the opposite pairs of rollers is also necessarily simultaneous.

The gripping devices and the box therefor, as just described are designed to slide over the escape web or tape L. The escape web L, is of a material having sufficient strength to sustain the weight of reasonably heavy persons, and has connected to the upper end thereof the main grapple hook M, while moving on the upper portion thereof is the auxiliary movable grapple hook M', which, together with the main hook provides means whereby the escape web can be suspended from any convenient point. The auxiliary hook M', is entirely independent of the main hook M, and being movably connected to the escape web or tape L, can be adjusted to an engaging position independently of the main grapple hook, so as to be brought into engagement with any other suitable point of attachment, other than illustrated, thereby materially adding to the security of the connection of the web with the building. The escape web L, enters between the upper ends of the box plates A, through the space between the upper pair of guide bars N, connecting the plates A, at their upper ends, and said tape passes out of the inclosing space between the frame plates, through the space between the corresponding lower guide bars N', connecting the lower ends of the box plates A. Intermediate of the upper and lower ends

of the frame plates A, the escape tape L, is interwound around the several friction rollers carried by the opposite pairs of gripping levers, so that a sufficient friction can be secured on said tape, by gripping said levers, to allow for a safe descent. The winding of the tape can be seen more clearly by reference to Fig. 3 in which it shows the same passed transversely around the upper friction rollers of the opposite gripping levers, and thence and transversely around the lower friction rollers of the opposite friction levers. Guide pulleys O, are arranged at a point between and above the upper friction rollers and at a point between and below the lower friction rollers so as to give the end rollers, around which the tape passes, as much frictional contact as possible, as well as to guide the tape through the guides N and N'. The lower guide bars N', serve to receive the loop ends of the metallic clips or clasps P, between the jaws of one of which is firmly bound the belt strap Q, the lower end of which is attached to the body belt R, having at one end a series of attaching rings r, and at the other end a snap hook or clasp r', for engaging any one of said rings. This belt is designed to be placed around the body under the arm so as to give a strong support therefor. The other metallic clip or clasp P, is securely clamped onto the upper end of the stirrup strap S. The stirrup strap S, comprises a long loop portion s, which can be adjusted to any length desired by means of the strap and buckle connection T, and said stirrup strap hangs considerably lower than the body belt so as to receive one foot of a person, thereby leaving the other foot free. The lower end of the long loop s, receives the metallic stirrup plate U, approximately U-shaped in cross section, and having at its opposite ends the eyes or loops V, embracing the opposite portions of the loop s, so that the stirrup plate can be adjusted as the length of said loop may be adjusted. The loop of the strap S, may be prevented from spreading by the movable rings W, embracing both portions of the loop, and sliding thereon as clearly shown in the drawings. After suspending the apparatus from a window or other suitable convenient point in the emergency of a fire, a person snaps the body belt around his or her body under the arms and places the right foot in the stirrup, so as to leave the left foot free to keep him or her from the building. By grasping the opposite pairs of handle grip levers, the descent can be made as rapidly as desired and with perfect safety.

Changes in the form, proportion and the minor details of construction as embraced within the scope of the appended claims, may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a portable fire escape, the escape tape, a friction box sliding on the tape, and gripping devices arranged to work inside of said box and carrying separate friction rollers around which said tape is inter-wound, substantially as set forth.

2. In a portable fire escape, a sliding friction box, opposite pairs of handle levers carrying friction rollers at their inner ends moving inside of said box, and an escape web or tape passing through said box and inter-wound around the several friction rollers, substantially as set forth.

3. In a portable fire escape, a sliding friction box, having slots in opposite sides thereof, opposite pivoted pairs of handle grip levers carrying friction rollers at their inner ends, the journals of which project through and work in the box slots, and the escape web or tape adapted to be suspended from a convenient point and passing through the friction box and inter-wound around the several movable friction rollers therein, substantially as set forth.

4. In a portable fire escape, the combination of a sliding friction box having opposite pairs of slots in opposite sides thereof, roller journals arranged to move in said slots, friction rollers mounted on said journals, means for simultaneously moving the roller journals, and an escape web or tape passing through said box and transversely inter-wound around the movable rollers, substantially as set forth.

5. In a portable fire escape, opposite spaced box plates having slots therein, opposite pairs of handle grip levers halved onto and pivoted to each other and provided with inner U-shaped yoke ends working between said box plates, spindles mounted in said U-shaped end and projecting through and working in the plate slots, friction rollers journaled on said spindles within the yoke ends of said levers, an escape web or tape passing between the box plate and transversely inter-wound around the friction rollers of the opposite pairs of gripping levers, and upper and lower guides for the web or tape, substantially as set forth.

6. In a portable fire-escape, the combination with a sliding friction box; of the escape web or tape passing through said friction boxes, a main grapple hook securely attached to one end of the web or tape, and an independent auxiliary movable grapple hook loosely connected to the web or tape, and adapted to be adjusted to an engaging position independently of the main grapple hook substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ORVILLE E. MATTS.

Witnesses:

CHAS. W. DERRICKSON,
C. E. STEVENS.