

(No Model.)

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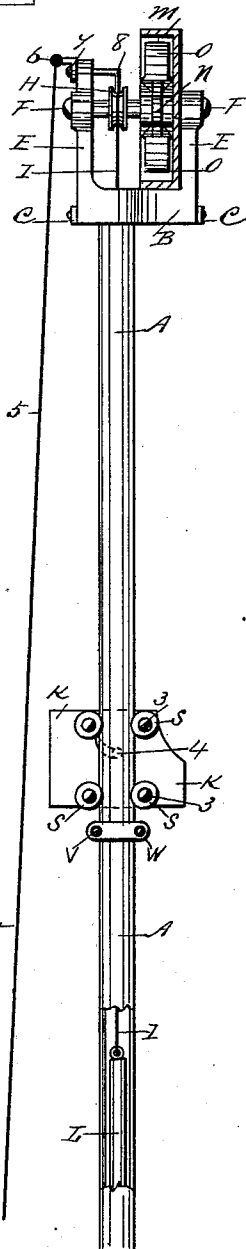
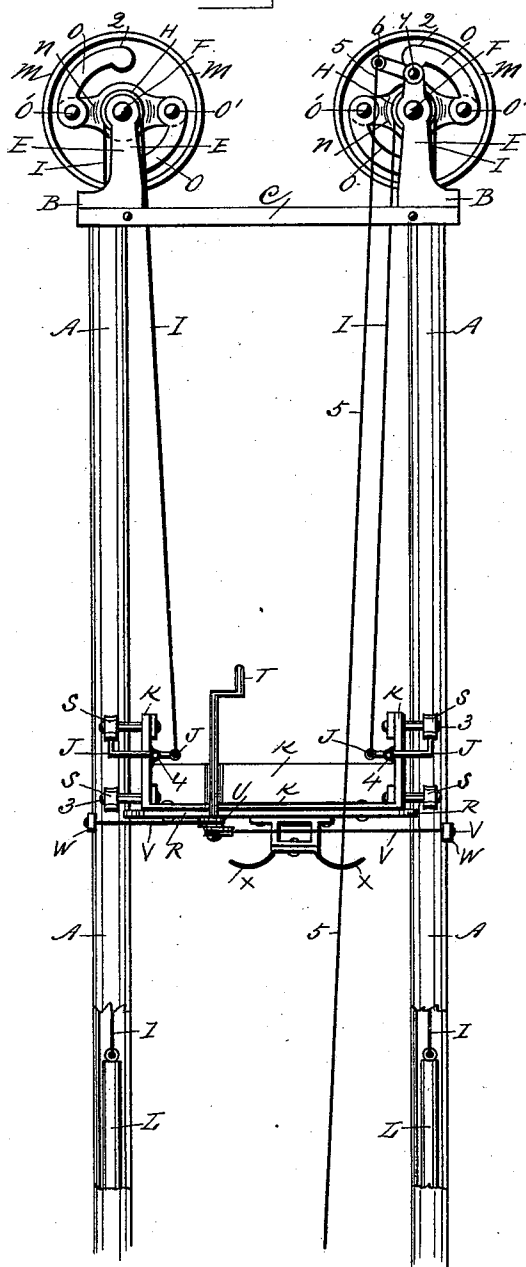
I. MILLS & J. YOUNGSON.
AUTOMATIC FIRE ESCAPE.

No. 527,180.

Patented Oct. 9, 1894.

Fig. I.

Fig. II.



Witnesses:

G. M. Cameron.
Alfred R. Howe

Inventors:

Isaac Mills and John Youngson
By their Atty. John H. Hendry.

(No Model.)

2 Sheets—Sheet 2.

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AUTOMATIC FIRE ESCAPE.

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Fig. III.

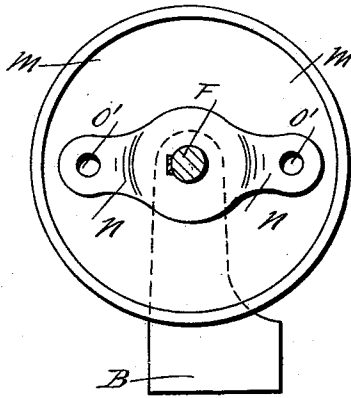


Fig. IV.

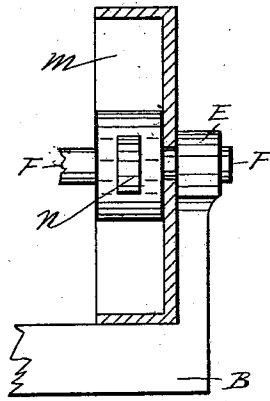


Fig. V.

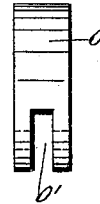


Fig. VI.

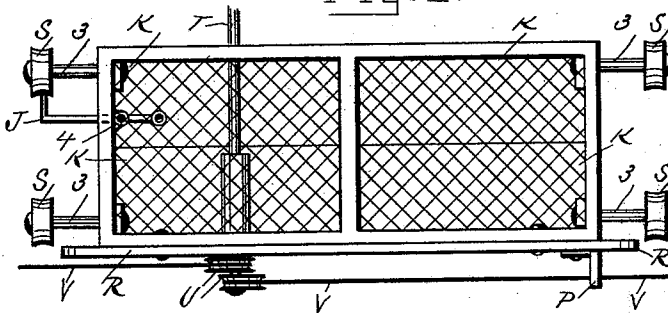


Fig. VII.

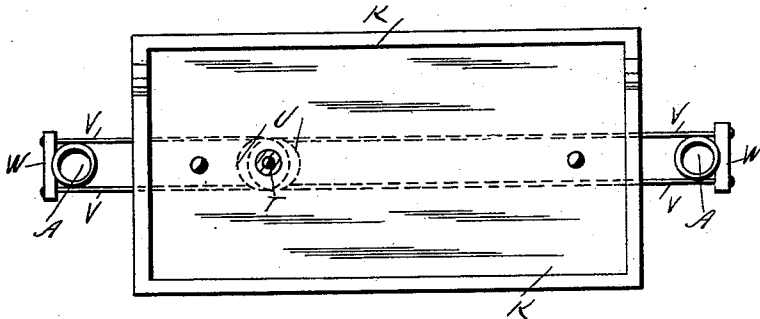
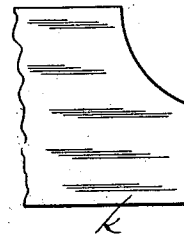


Fig. VIII.

Witnesses:

G. M. Cameron.
Attest

Inventors:

Isaac Mills and John Youngson
By their Atty. John H. Hendry.

UNITED STATES PATENT OFFICE.

ISAAC MILLS AND JOHN YOUNGSON, OF HAMILTON, CANADA.

AUTOMATIC FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 527,180, dated October 9, 1894.

Application filed January 5, 1894. Serial No. 495,841. (No model.)

To all whom it may concern:

Be it known that we, ISAAC MILLS and JOHN YOUNGSON, citizens of Canada, residing at Hamilton, in the county of Wentworth, in the Province of Ontario, in the Dominion of Canada, have invented a certain new and useful Automatic Fire-Escape, of which the following is a specification.

Our invention relates to improvements in "automatic fire escapes," in which two vertical parallel tubes, erected at each side of the windows of a building, in close proximity thereto, are parallel with and securely fixed rigidly to the wall, and also secured to the ground. These tubes are provided with a sliding escape receptacle, or cage, so arranged and devised, that the said receptacle shall be capable of sliding down at the same speed when containing one, or more, say twelve people; and also, of being stopped at any window by means of brakes. The receptacle or cage is so arranged as to ascend automatically.

The objects of our invention are, to provide a fire escape that is safe and substantial, to avoid accidents, and to afford facilities for the proper adjustment of the mechanism pertaining thereto.

We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure I, is a front elevation of our improved fire escape, the front part of the sliding receptacle removed to show the interior, and the lower parts of the vertical guide tubes broken in order to show the balance weights. Fig. II, is a side elevation of the same, the stationary circular casing containing the friction governors being in section. Fig. III, is an enlarged front elevation of the rotary arms, keyed onto shaft in casing showing holes in ends of said arms to which the governors are pivoted. Fig. IV, is a side elevation of the same with casing in section. Fig. V, is a side view of a friction governor. Fig. VI, is a front elevation of the sliding receptacle with guide rollers, lever brake, inner stay guides, and double eccentric with their rods in position. Fig. VII, is a broken end elevation of the receptacle showing the rear side lower than the front side of same, and Fig. VIII, is a plan of the receptacle showing eccentric rods with clips in position against

the vertical tubes, these several figures beginning with Fig. 3 being enlarged.

Similar letters and figures refer to similar parts throughout the several views.

In the drawings the parallel vertical tubes are indicated by the letter A, and are securely fixed to the wall of a building and in close proximity thereto. The lower ends of these tubes may be inserted in the ground if required, and the upper ends provided with a substantial collar B, which fits securely on said tubes, the two collars being connected by means of cross straps C. The front and rear of these collars have vertical standards E, for the support of shafts F, with the cable pulley H, on each immediately over the center of each tube. The independent cable I, which passes over each of these pulleys, is attached to a brake J, pivoted to each end of the receptacle K, at 4, the other end of this cable being attached to the elongated weight L, in the interior of the tubes, as a balance to the receptacle. A circular rigid casing M, forms a part of each of said rear standards, and in the interior of each said casing are two rotary arms N, secured to the shafts F. To the ends of these rotary arms, the friction governors O, are pivoted at O', and revolve with said shafts, when the receptacle ascends and descends. When the receptacle is laden and liable to descend fast the said friction governors engage at 2, with the interior concave face of the said casings, thus causing great friction, and allowing the receptacle to descend slowly.

The brakes J, hereinbefore mentioned, when applied, engage with the inner part of front upper rollers S, which engage with the tubes, thus stopping the receptacle in case of accidental breakage of a cable. These rollers are pivoted at 3, which forms projecting arms at each end of receptacle as journals for said rollers on each side of said tubes. In place of these rollers, concave slides may be applied as equivalents, the attainment of these results being similar.

The guides R, secured to the under side of receptacle, the ends of which are concaved to slightly touch the tubes prevent the said tubes from possibly bulging inward, and binding the receptacle.

The vertical hand lever T, which is in po

sition in the interior of receptacle operates a double eccentric or cam, U, provided with rods, V, having outer clips W. These said clips prevent the possibility of tubes spreading, and permit the operator to press the clips against the tubes in order to stop the receptacle. The right hand end or rod V, is partially supported by the hangers P, attached to the under part of receptacle.

10 X is a spring attached to the under part of receptacle forming a cushion for the same when engaging with the ground.

The independent cable, 5, the upper end of which is attached to lever 6, of arm 8, when drawn down brings said arm, which is pivoted to upper part of standard E, at 7 down upon the inner part of cable pulley H, and cable I, thus causing friction and stopping the same. This cable 5, is operated from the ground or from the receptacle in order to stop said receptacle when ascending or descending. The balance weights in tubes, hereinbefore mentioned are sufficient to allow the receptacle to ascend.

25 Having delineated and specified the chief and important elements in our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the vertical tubes A, provided at their upper ends with rigid collars, B, having vertical standard bearings E, and cross braces C, the shafts F, cable pul-

leys H, cables I, with weights L, circular casings M, the cross arms N, secured to said shafts with friction governors O, pivoted at O', thereto, and the receptacle K, provided with guide rollers S, substantially as and for the purpose hereinbefore set forth. 35

2. The combination of the vertical tubes A, having upper collars B, with standards E, and casings M, the cross braces C, the through shafts F, with cable pulleys H, and cables I, the cross arms N secured to said shafts and the friction governors O, pivoted thereto, the receptacle K having guide rollers S, and inner guides R, the vertical lever T, applied to eccentrics U, rods V, and outer clips W and the independent cable 5, attached to lever of friction arm 6, substantially as and for the purpose hereinbefore set forth. 40 45 50

3. In an automatic fire escape, the sliding receptacle K, having guide rollers S, guides R, vertical tubes A, the brake lever T, supplied with the eccentrics U, rods V, and outer clips W, the ground cushion spring, X, in combination with the described rotary mechanism in casings M located on top of said tubes, substantially as and for the purpose hereinbefore set forth. 55

ISAAC MILLS.

JOHN YOUNGSON.

Witnesses:

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