No. 649,073. Patented May 8, 1900.

H. W. RACEY.

FIRE ESCAPE.

(Application filed July 27, 1899.)

(No Model.)

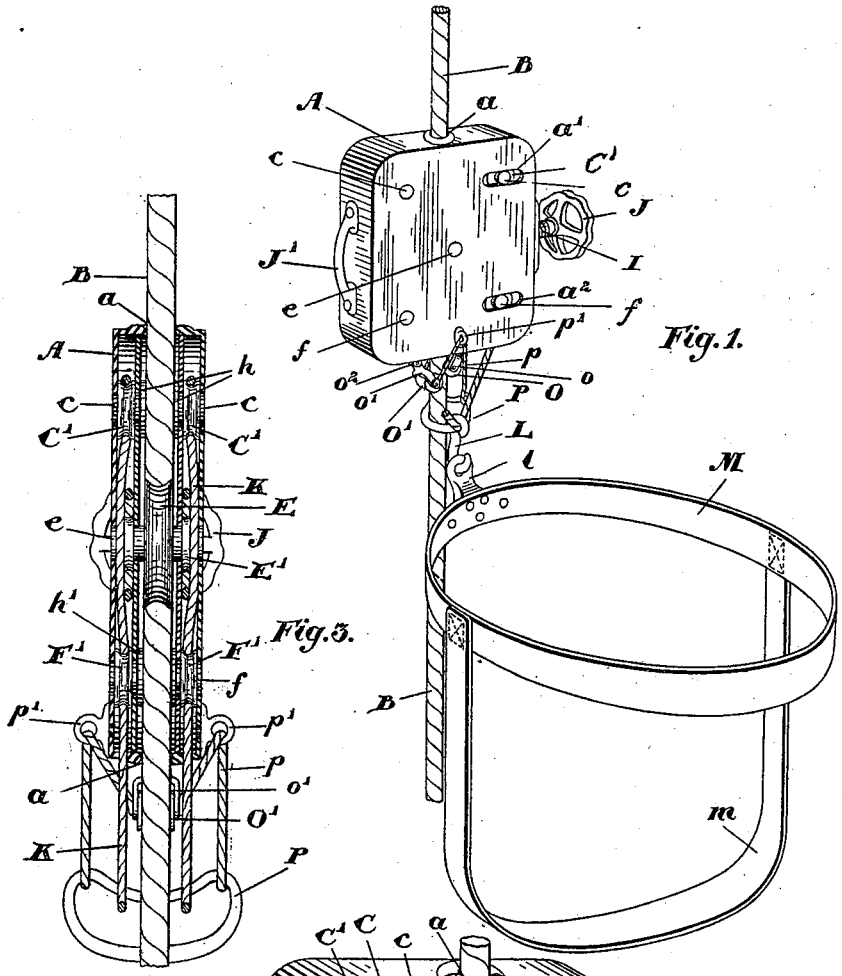

Fig. 1.

Fig. 3.

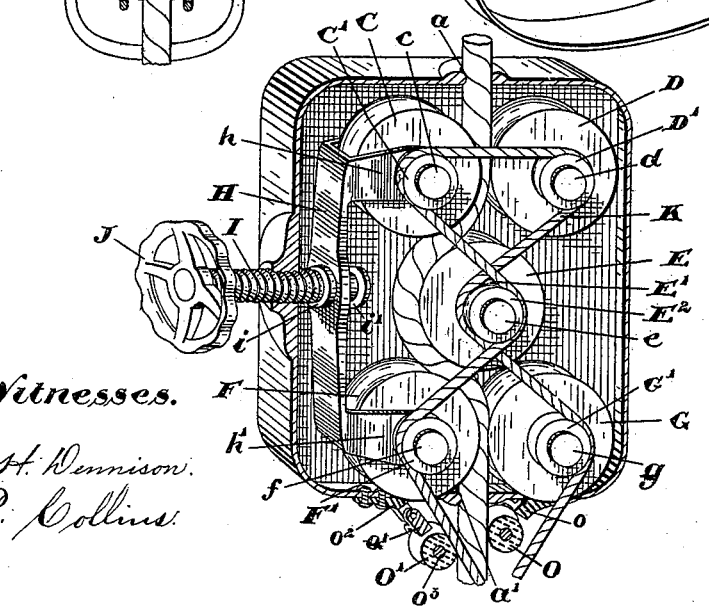

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

HERBERT WILLIAM RACEY, OF ETCHEMIN, CANADA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 649,073, dated May 8, 1900.

Application filed July 27, 1899. Serial No. 725,303. (No model.)

To all whom it may concern:

Be it known that I, HERBERT WILLIAM RACEY, a subject of the Queen of Great Britain, residing at Etchemin, in the county of Levis, in the Province of Quebec, Canada, have invented a new and useful Fire-Escape, of which the following is a specification.

My invention relates to improvements in fire-escapes; and the object of the invention is to provide a simple, compact, and easily-portable device whereby in case of fire any one descending from a window in a hotel or other building can regulate the speed and insure a safe descent; and it consists, essentially, of a suitable casing, preferably substantially rectangular and provided with a system of five pulleys, two of which form the brake for the rope, which passes between the opposite pulleys and partially around a central third pulley, the brake-pulleys being provided with a suitable operating device designed to be regulated by the hand of the person descending, two friction-rollers being also secured to the bottom of the box on each side of the rope and the parts being otherwise constructed and arranged in detail as hereinafter explained.

Figure 1 is a perspective view of my fire-escape complete, showing it in position on the guide-rope. Fig. 2 is an enlarged perspective detail of the speed-regulating casing with the casing in section and the operative parts in full. Fig. 3 is a section of the speed-regulating casing.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the speed-regulating casing, and B the rope which passes through holes *a a* in the top and bottom thereof.

C, D, E, F, and G are grooved pulleys located within the casing and having their spindles *c*, *d*, *e*, *f*, and *g* journaled in the sides of the casing. The spindles of the pulleys D, E, and G are journaled in the ordinary way in the sides of the casing, and the pulley E is situated centrally in the casing between the top pulleys C and D and the bottom pulleys F and G. The pulleys C and F are located opposite the pulleys D and G, respectively, and the spindles *c* and *f* of these pulleys are journaled in slots a' and a^2, respectively, at each side of the casing, so as to permit of these pulleys having movement to and from the pulleys D and G. The spindles *c* and *f* of the pulleys C and F also extend through the forked ends *h* and h' of the bar H, which is located in the interior of the casing, as indicated.

I is a screw-spindle, the inner end of which is plain and extends through the bar H, being secured in position therein by the collars *i* and i', which permit of rotation of the spindle and yet prevent the longitudinal displacement of the spindle in reference to the bar. The spindle I extends through one of the sides of the casing and is provided with a suitable hand-wheel J.

It will be noticed that the rope B passes in a somewhat-serpentine course between the pulleys C and D, partially around the pulley E, and between the pulleys F and G. By operating the hand-wheel J the pulleys C and F may be brought nearer to or farther from the pulleys D and G, respectively, so as to exert a greater or less frictional pressure upon the rope, as desired.

C′, D′, F′, and G′ are the minor grooved pulleys, which are journaled on the the spindles *c*, *d*, *f*, and *g*, respectively, and E′ and E^2 are grooved pulleys journaled on the central spindle *e*.

K is an endless rope passing over the pulleys C′, D′, F′, and G′, such rope being crossed to pass over the pulleys E′ and E^2, as indicated.

L is a hook suitably secured at the bottom looped end of the rope K and supporting by means of the metal loop *l* the belt or band M, having a U-shaped saddle-strap *m*. This belt or band M and saddle-strap is designed to support the weight of the person who is escaping from the burning building. Such person may grasp the hand-wheel J at one side of the casing A and the handle J′, secured to the opposite side of the casing. By manipulating the hand-wheel J the person descending may brake his descent on the rope by bringing the pulleys C and F closer to the pulleys D and G, respectively, so as to exert a more or less frictional grip upon the rope and thus serve as an effectual brake to check the too-rapid descent of the person, and the weight of the person also being exerted upon the rope K will on account of the course the

rope follows around the minor pulleys serve to bring the pulleys C and F more closely to the pulleys D and G, thus automatically effectuating the same purpose as the manipulation of the hand-wheel J.

O is the grooved roller, journaled in a suitable forked bracket *o*, secured to the bottom of the casing at one side of the rope. O′ is a suitable roller journaled in the fork *o′*, forming part of the bracket o^2, situated at the opposite side of the hole *a′*. P is a ring of rope or other suitable material through which the rope B extends and which is fastened in the double hook L. *p* are cords fastened to the flexible ring P and extending through the rings *p′*, fastened to each side of the casing A and connected to the ends of the spindle o^3 of the grooved roller *o′*. It will be seen from the construction and arrangement of these rollers that the weight of a person in the belt M will pull on the cords *p* and thereby bring the pivotally-swung roller O′ toward the stationary roller O, thereby tending further to produce a frictional grip upon the rope simply by the weight of the person and without the exercise of any manipulating of the operating parts hereinbefore described. I do not contend that the frictional grip of these rollers will be sufficient, but it is a valuable auxiliary to the brake hereinbefore described, and by the combination I am enabled to produce an efficient and safe device whereby a person may be taken from a burning building with the greatest facility.

As the rope B may be stretched out any desired distance from the building, it will be seen that the parties descending in such a case will be in much less danger of being burned than in other devices previously used.

What I claim as my invention is—

1. In combination, the casing, a plurality of pairs of rollers journaled therein, the rope guided between the rollers, the belt and means independent of said rope controlled by the weight carried by said belt for controlling the relative position of the rollers of each pair for frictionally gripping the rope, substantially as described.

2. The combination with the supporting-belt and saddle-strap and the guiding-rope, of a casing, means for supporting the band from the same, the top and bottom fixed pulleys at one side of the rope passing through the casing, the centrally-arranged pulley at the same side, the upper and lower pulleys having the spindles supported in slots in the casing and means for adjusting such pulleys in relation to the fixed pulleys as and for the purpose specified.

3. The combination with the supporting-belt and saddle-strap and the guiding-rope, of a casing, means for supporting the band from the same, the top and bottom fixed pulleys at one side of the rope passing through the casing, the centrally-arranged pulley at the same side, the upper and lower pulleys having the spindles supported in slots in the casing, the bar provided with forked ends through which the spindles of the adjustable pulleys extend and means for manipulating such bar as and for the purpose specified.

4. The combination with the supporting-belt and saddle-strap and the guiding-rope, of a casing, means for supporting the band from the same, the top and bottom fixed pulleys at one side of the rope passing through the casing, the centrally-arranged pulley at the same side, the upper and lower pulleys having the spindles supported in slots in the casing, the bar provided with forked ends through which the spindles of the adjustable pulleys extend, the threaded spindle extending through the casing provided with a hand-wheel and suitably held in the bar as and for the purpose specified.

5. The combination with the supporting-belt and saddle-strap and the guiding-rope extending through the casing, of the five pulleys journaled as specified and through which the rope extends, the minor pulleys situated on the spindles of these pulleys and the endless rope passing over the same and the hook and loop connecting the endless rope to the band as and for the purpose specified.

6. The combination with the supporting-belt and saddle-strap and the guiding-rope extending through the casing, of the five pulleys journaled as specified and through which the rope extends, the minor pulleys situated on the spindles of these pulleys and the endless rope passing over the same, the connection between the endless rope and the band, the roller journaled in a stationary bracket at one side of the rope and the roller journaled in the pivoted forked portion of the bracket on the opposite side of the rope, the flexible ring connected to the band and through which the main rope extends and means connected to the pivotally-swung roller and the band to cause such roller to be brought against the rope when the weight of the person is upon the band as and for the purpose specified.

7. The combination with the supporting-belt and saddle-strap and the guiding-rope extending through the casing, of the five pulleys journaled as specified and through which the rope extends, the minor pulleys situated on the spindles of these pulleys and the endless rope passing over the same, the connection between the endless rope and the band, the roller journaled in a stationary bracket at one side of the rope and the roller journaled in the pivoted forked portion of the bracket on the opposite side of the rope, the flexible ring connected to the band and through which the main rope extends, and the cords connected at one end to the spindles of the pivotally-swung roller passing through eyes in the casing and connected at the opposite end to the flexible ring through which the rope extends as and for the purpose specified.

8. The combination with the supporting-

belt, the casing, and the guiding-rope extending therethrough, of the five pulleys journaled as specified and through which the rope extends, the minor pulleys situated on the axles of these pulleys, and the endless rope passing over the same and connected to the band as and for the purpose specified.

Signed at Etchemin, Canada, this 24th day of July, 1899.

HERBERT WILLIAM RACEY.

Witnesses:
JOSEPH ARTHUR DES ROCHES,
GUGY RYLAND.