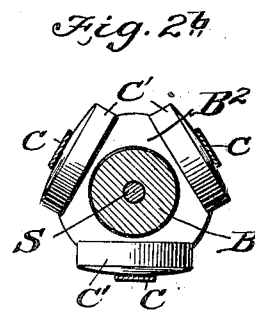
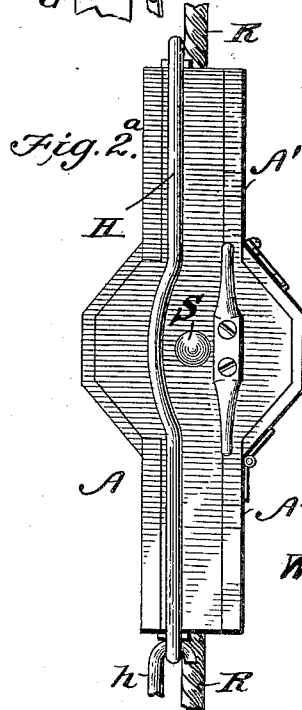
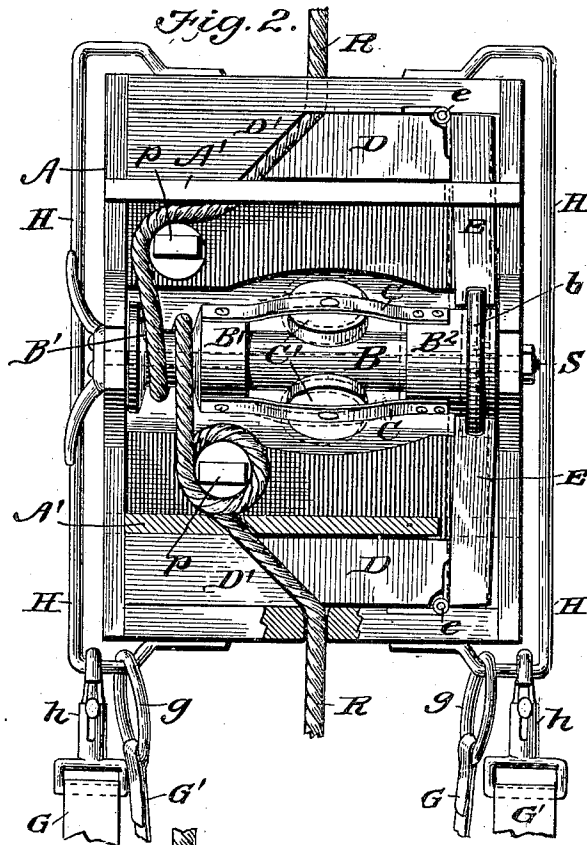
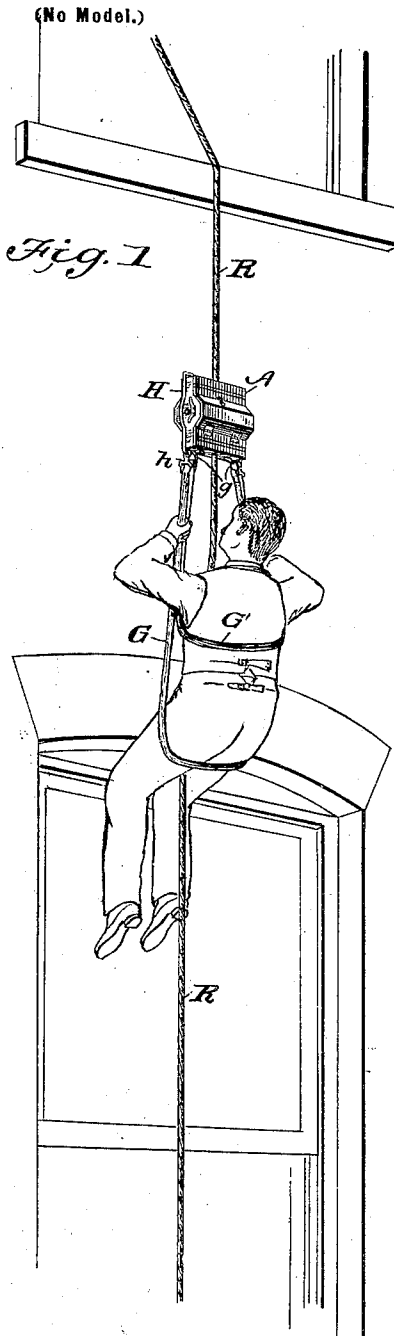


No. 688,767.

Patented Dec. 10, 1901.

W. B. WOOD.
FIRE ESCAPE.

(Application filed Feb. 11, 1901.)



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UNITED STATES PATENT OFFICE.

WILL B. WOOD, OF SHAMOKIN, PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 688,767, dated December 10, 1901.

Application filed February 11, 1901. Serial No. 46,822. (No model.)

To all whom it may concern:

Be it known that I, WILL B. WOOD, of Shamokin, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

My invention is in the nature of an improved fire-escape designed to enable persons to lower themselves in safety from a burning building and which device is in some of its features applicable for use as a safety device for elevators or for the cars of an inclined railway. It belongs to that class of devices in which the movement of the casing of the device over the rope or the rope through the casing is retarded and regulated by a centrifugal governor and brake; and it consists in the peculiar construction and arrangement of such devices which I will now proceed to describe with reference to the drawings, in which—

Figure 1 is a general view showing the mode of using the device. Fig. 2 is an enlarged side view of the case containing the working mechanism, the side plates being removed to show the interior construction. Fig. 2^a is an edge view of the case, and Fig. 2^b a cross-sectional detail.

In the drawings (see Fig. 2^a) the case A is made of a larger central portion of a polygonal or cylindrical form, with elongated narrower extensions at top and bottom of rectangular form and of symmetrical construction. These rectangular extensions at top and bottom have fixed partitions A' A', which separate the end portions from the middle and main chamber. In the end sections of the case there is fixed a central shaft S, on which turns a sleeve B, which has at one end an enlarged windlass portion B' and at the other end has a freely-sliding collar B², adapted to move lengthwise on the sleeve. Extending from the windlass B' to the collar B² and connected to them both in substantially parallel position are a series of three, more or less, flat springs C, which bear on their middle portions weights C', which are disposed on the inner sides of the springs, so as to lie between the windlass B' and collar B² and take up the least possible room and permit the case to be made as small as possible. In the spaces between the partitions A' A' and

the top and bottom edges of the case there are two blocks D D', whose abutting faces are inclined. One of these, D', is fixed and stationary, and the other, D, is movable to and from the first named, so as to pinch and cramp a rope passing between the inclined faces. At the ends of the movable blocks D there are right-angularly arranged arms E, which are hinged at *e* to the extreme outer edge of the case and bear against the movable blocks D a little inside this hinge and then extend to the sliding collar B². This collar has on its periphery a flange *b*, and this flange plays in a notch in the end of each arm E.

When the sleeve B rotates at a more or less high rate of speed, the weights C' are thrown outwardly from centrifugal action, and in causing the springs to bend outwardly these springs pull the collar B² toward the center of the sleeve, and the flange of the collar acting on the arms E tilts them on their hinges and forces the movable blocks D against the stationary blocks D'.

In the middle of the top and bottom portions of the case there is a hole giving entrance to a rope R, over which the entire case moves. This rope passes into the case at one side and enters the space between the inclined faces of the blocks D D', thence passes through the partition and is wrapped around a retarding-pin *p*, fixed in the case, and passes thence around the windlass B', thence around the other retarding-pin *p* and through the space between the other pair of blocks D D', and out through the case. With this construction when the upper end of the rope is attached to the upper part of the building and the person is attached to the case the latter in moving down with the person causes the rope to slip through the case. As it slips through it rotates the windlass and throws the weights outwardly, drawing the collar B² inwardly and causing the arms E to act on movable blocks D and force them against the rope, both at the top and bottom, with a variable pressure dependent upon the speed of the descent. If the descent is too rapid, the high revolution of the weights brings a harder pressure on the rope, which causes the speed to be slackened, and vice versa, so that when the device is adjusted to the proper rate of descent the friction devices are made self-

regulating. The object of the retarding-pins *p* is to bring the rope to the plane of the windlass and to afford an increased frictional retardation. If desired, there may be two or
5 more of these fixed retarding-pins.

In order to insure the safe descent of the passage, the body is supported in a sling formed of two straps *G G'*, connected by rings *g* to metal rails *H H* and having snap-hooks
10 *h* in their opposite ends for quickly attaching them to the opposite rail in forming the sling. These rails *H* are attached to the top and bottom of the case and extend around the ends of the same, forming a symmetrical
15 arrangement at both top and bottom. The object of this is as follows: After one person has descended on the fire-escape the case remains at the bottom of the rope. If now a
20 second person wishes to descend, he pulls the rope up, with the case hanging to its lower end, and having seized the case reverses and attaches the other end of the rope (which was formerly at the bottom) to the fixed anchorage at the top. The rings of the sling-straps
25 drop down along the side rails of the case to what is now the lower side of the case in proper position to permit the sling to be formed. It will thus be seen that there is a special object in making the case and its op-
30 erating devices entirely symmetrical, which permits each side to be alternately used as top or bottom, besides giving a double-brake action and a greater security.

In making use of my invention the case, with its self-regulating devices, may be used
35 as a safety appliance for an elevator or inclined-railway car—that is to say, it may be organized therewith in such relation as to arrest or retard the descent of the car in case
40 its lifting mechanism breaks.

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

1. A self-regulating rope-brake, comprising
45 a case, a windlass, a collar arranged concentric with the windlass and sliding in line with the axis of the windlass, a series of centrifugal weights arranged between the collar and

windlass, and a set of springing connections attached at one end to the windlass and at
50 the other end to the sliding collar, said connections being arranged longitudinally to the axis of the windlass and having the centrifugal weights mounted thereon substantially
55 as described, and a rope-clamp connected with and acted upon by the movement of said collar in response to the centrifugally-acting weights substantially as described.

2. A self-regulating rope-brake comprising a case, a centrally-located centrifugal governor having a collar sliding on the axis of
60 the governor, a rope-clamp arranged at one side of the case and composed of a stationary block and a movable block sliding parallel to the axis of the centrifugal governor, and
65 an arm at right angles to the said axis, operated upon by the said collar and operating upon the movable member of the rope-clamp substantially as described.

3. A self-regulating rope-brake, comprising
70 a case, a centrally-located centrifugal governor, having a collar sliding on the axis of the governor, and double and symmetrically-arranged rope-clamps consisting of an arm
75 on each side of the said axis at right angles thereto, and connected to and operated by the sliding collar, and a clamping-slide arranged at right angles to each of said arms
80 and operated upon thereby to bear against the rope substantially as described.

4. A self-regulating rope-brake comprising a case, a centrally-located centrifugal governor, consisting of an axis, a sleeve having
85 a rigidly-attached windlass at one end and a sliding collar at the other, spring-bars connecting the two and provided with weights, right-angularly-arranged arms operated upon by the collar, and rope-clamps arranged upon
90 oppositesides of the centrifugal governor and acted upon by said arms substantially as described.

WILL B. WOOD.

Witnesses:

EDWD. W. BYRN,
R. I. FOLLMER.