

No. 835,985.

PATENTED NOV. 13, 1906.

J. C. SHARP.
FIRE ESCAPE.

APPLICATION FILED JULY 13, 1904.



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JUDSON C. SHARP, OF SALT SPRINGVILLE, NEW YORK.

FIRE-ESCAPE.

No. 835,985.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed July 13, 1904. Serial No. 216,431.

To all whom it may concern:

Be it known that I, JUDSON C. SHARP, a citizen of the United States, residing at Salt Springville, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Fire-Escapes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in fire-escapes; and the object of the invention is to generally improve upon and render more efficient and simple this class of inventions, and in the present invention it has been my aim to improve upon my invention covered by Letters Patent in the United States No. 695,001.

My invention consists in a fire-escape having various details of construction, combinations, and arrangements of parts, as will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is a sectional view through the fire-escape, showing various parts of the invention. Fig. 2 is a vertical section through the fire-escape and casing therefor, and Fig. 3 is a detail perspective view of part of the apparatus.

Reference now being had to the details of the drawings by letter, A designates a casing, which is made, preferably, of cylindrical shape and may be made of any suitable material, preferably metal, and is provided with an elongated slot A', through which the cable passing about the spring-actuated reel is adapted to have a play. Mounted within the casing is a metallic spider-frame made up of two parts B and B', and said part or section B of the frame has a gear-wheel B², having teeth upon the inner circumference of its rim and may be integral with or attached to the inner angled ends of the section B'. Arms b, made, preferably, integral with the wheel B², have their free ends chambered, the walls of which chambered portions are

threaded to receive screws b', passing through the section B', whereby parts of the frame may be securely held together. The operative parts of the fire-escape are contained between the two sections of the frame, as shown.

A shaft C passes through and is fixed centrally to the part B of said frame. A reel D is journaled upon said shaft and has a cable E anchored at one end of said reel and adapted to wind about the same, and said cable passing through the slot A' in the casing has a ring E' securely fastened to the end thereof and to which a strap or any other suitable apparatus adapted for attachment to a person using the fire-escape is connected. A coiled spring F is anchored at one end of said shaft and at its other end is securely fastened to the flange of the reel which surrounds the spring, thereby providing means whereby as the cable is paid out the spring will be wound up for the purpose of winding up the cable after a person using the fire-escape has been relieved therefrom, thus rendering the apparatus in readiness for use by succeeding people.

A collar K is loosely journaled upon said shaft and has a series of ratchet-teeth K' upon one face thereof, which teeth are adapted to be engaged by a spring-actuated pawl N, mounted in an aperture in one face of said reel, whereby as the cable is unreeled said collar, provided with ratchet-teeth in the face thereof, will be caused to rotate with the reel for a purpose which will presently appear. An integral arm K² of said collar carries a crank-pin K³, upon which a pinion-wheel J is journaled, which is in mesh with the teeth upon the inner circumference of the rim of the gear-wheel B², which is held to the section B' of said frame. A pinion-wheel O is loosely journaled upon the shaft and is in mesh with the pinion-wheel J; whereby as the arm K of said collar is swung about the shaft and carrying with it the rotating wheel J a rotary movement will be imparted to said pinion-wheel O, which operates the governor mechanism.

Fixed to the arms of the section B' of the frame is a ring I with a flange I' at one edge thereof, and M M designate two frictional shoes which are of semicircular shape and are adapted to be expanded against the inner circumference of said ring in order to afford a frictional brake to the apparatus. Corresponding ends of said shoes are notched, as at

M', and are adapted to receive one end of an arm O', which projects from the hub portion of the pinion-wheel O, as shown clearly in Fig. 1 of the drawings. The opposite ends of said friction brake-shoes M have recesses *m*, the bottom walls of said recesses being inclined and tapering inward toward each other. Said slotted ends of the brake-shoes are spaced apart slightly, and a brake-throwing lever Q, having a curved shank portion, is provided, one end of which has a triangular-shaped end, the opposite inclined edges of which are adapted to engage with the inclined bottoms of said slots as the lever is tilted, whereby said shoes may be thrown in opposite directions frictionally against the inner circumference of said ring to regulate the movement of the reel in unwinding.

A plate R is provided, one end of which, R', is weighted and projects over the circumference of said ring and is longitudinally slotted, as at R², the walls of said slot having a play in the oppositely-disposed parallel recesses O², formed in the hub portion of the pinion-wheel O. By the provision of said plate having a weighted end it will be observed that as the pinion-wheel O is rotated said plate will be given a rotary movement, and the faster the pinion rotates the greater the tendency of the weighted plate to be thrown outward by centrifugal force. A projection R³ upon one face of the plate R is adapted to contact and bear against the outer end of the shoe-throwing lever as the plate rotates, and it will be readily understood that the faster the plate rotates the greater the centrifugal force will be upon said plate and the greater will be the pressure which is applied to said shoe-throwing lever for the purpose of expanding the friction brake-shoes, causing the same to brake and reduce the speed of the rotating parts.

When the reel has been unwound, the spring having been wound up by the unwinding of the reel, the cable will be rewound by the action of the spring, the spring-actuated dog, which is actuated by the reel, turning idly over the ratchet-teeth upon the collar K, and the governor mechanism will be at rest during the winding up of the reel. It will thus be seen that by the provision of the apparatus shown and described a simple and efficient fire-escape contained in a compact space is provided whereby the speed of the unwinding of the cable will be automatically regulated, and when the weight is relieved from the cable the latter will be wound up and the apparatus will be ready for use by succeeding parties. In arranging the apparatus for use the frame is securely anchored adjacent to any suitable opening where it will be ever ready for immediate use.

While I have shown a particular detailed construction of fire-escape embodying the features of my apparatus, it will be under-

stood that I may vary the details of the same if found desirable without in any way departing from the spirit of the invention.

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

1. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon the shaft, a cable secured to and winding about the reel, a fixed ring positioned about said shaft, semicircular brake-shoes having corresponding ends recessed, the bottoms of said recesses being inclined, a lever having inclined portions engaging said recesses, a centrifugally-movable weighted member, and means intermediate the same and said reel whereby said member may be rotated and thrown against said lever for the purpose of expanding the brake-shoes against said ring, as set forth.

2. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon said shaft, a cable secured to and winding about said reel, a stationary ring positioned about said shaft, semicircular brake-shoes, the corresponding ends of which are slotted, the bottoms of said slots being inclined, a lever having an end provided with oppositely-inclined portions adapted for engagement with the inclined bottoms of said slots, a centrifugally-movable weighted member, and means intermediate the same and said reel whereby said member and brake-sections may be rotated together, and said lever actuated, whereby the brake-sections may be expanded against said ring, as set forth.

3. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon said shaft, a cable secured to and winding about said reel, a stationary ring about said shaft, a centrifugally-movable weighted member, semicircular brake-shoes with slotted ends, a lever adapted to engage the slotted ends of said shoes to expand the same, a rotatable collar, gear connections between the same and said reel, and means carried by said weighted member for contact with said lever, whereby the brake-shoes may be expanded as the latter are rotated, as set forth.

4. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon said shaft, a cable secured to and winding about said reel, a stationary ring positioned about said shaft, semicircular brake-shoes, a lever for expanding said shoes against said ring, a centrifugally-movable weighted member, a projection thereon adapted to contact with said lever, a sleeve having ratchet-and-pawl connections with said reel, a pinion rotating upon said shaft and adapted to actuate said weighted member, and gear mechanism for actuating said pinion-wheel, as set forth.

5. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon said shaft, a cable secured to and winding about the reel, a stationary ring about said shaft, friction-shoes, a lever for expanding the same against said ring, a ratchet-wheel journaled upon said shaft, a spring-pressed pawl carried by the reel and engaging said ratchet-wheel, a fixed gear-wheel having teeth upon its inner circumference, a pinion-wheel carried by said ratchet-wheel and in mesh with said fixed gear-wheel, a pinion-wheel journaled upon the shaft and in mesh with said pinion-wheel carried by the ratchet-wheel, a longitudinally-movable weighted member carried and rotated by the hub portion of said pinion which is journaled upon said shaft, a projection upon said weighted member adapted to actuate said lever, a projection of said hub portion engaging and adapted to rotate said brake-shoes, as set forth.

6. A fire-escape comprising a frame, a shaft carried thereby, a spring-actuated reel journaled upon the shaft, a cable secured to and winding about the shaft, a stationary ring positioned about the shaft, brake-shoes, a lever for expanding the same against said ring, a ratchet-wheel journaled upon the shaft, a spring-pressed pawl carried by the reel and designed to engage said ratchet-wheel, a stationary gear-wheel having teeth upon its inner circumference, an arm projecting from said ratchet-wheel, a pinion-wheel journaled

upon said arm, and in mesh with said fixed gear-wheel, a pinion with slotted portion journaled upon the shaft and in engagement with said pinion carried by said arm, a projecting arm upon the hub portion of the pinion which is journaled upon the shaft, engaging and adapted to rotate said shoes, a weighted member having a slot therein, the marginal edges of which are adapted to have a play in the slots in the hub portion of the pinion-wheel upon said shaft, and a projection upon said weighted member adapted to contact with and tilt the brake-shoe-throwing lever, as set forth.

7. A fire-escape comprising a frame, a shaft carried thereby, a reel journaled upon said shaft, a cable around said reel, a stationary ring about said shaft, a centrifugally-movable weighted member, semicircular brake-shoes with slotted ends, a lever adapted to engage the slotted ends of said shoes to expand the same, a rotatable collar, gear connections between the same and said reel, and means carried by said weighted member for contact with said lever, whereby the brake-shoes may be expanded as the latter are rotated, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JUDSON C. SHARP.

Witnesses:

ALMOND CRAMER,
LESTER J. SNYDER.