No. 695,001. Patented Mar. 11, 1902.

J. C. SHARP.

FIRE ESCAPE.

(Application filed Nov. 9, 1901.)

(No Model.)

Fig. 1.

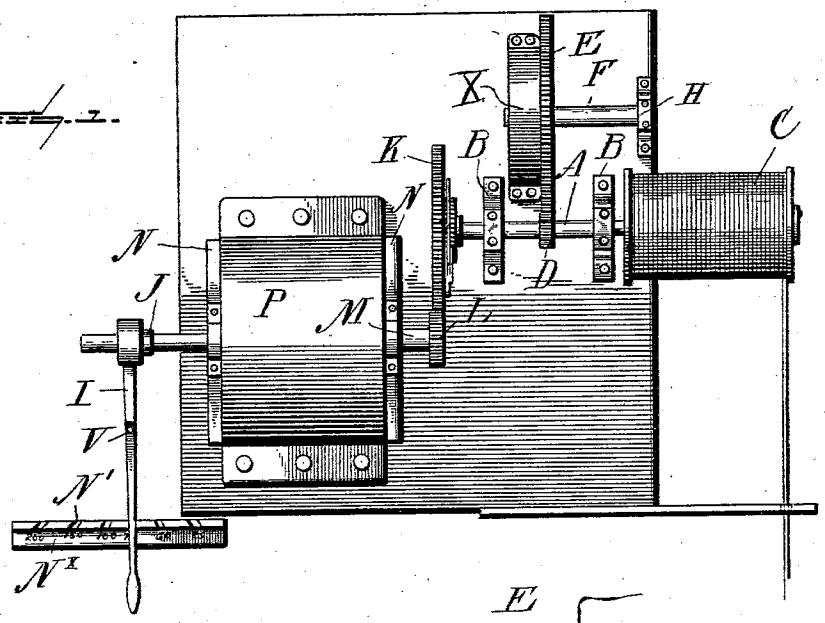


Fig. 2.

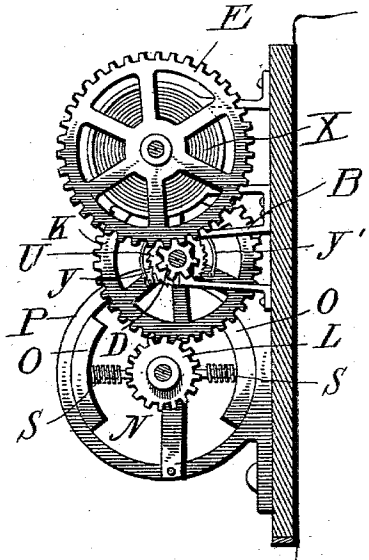
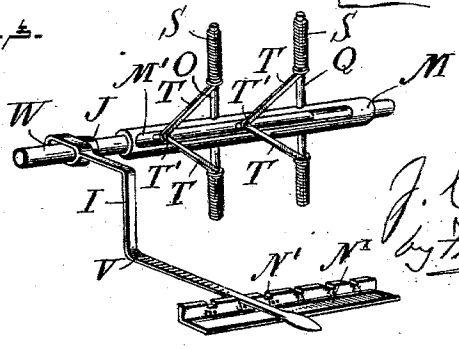


Fig. 3.



WITNESSES:

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

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 695,001, dated March 11, 1902.

Application filed November 9, 1901. Serial No. 81,725. (No model.)

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 improvements in fire-escapes, and comprises means for allowing persons of different weights to be gradually lowered to the ground and the rope reeled automatically after a descent has been accomplished, and means for regulating the tension of springs which bear against the friction-blocks.

The invention will be hereinafter more fully described and then specifically defined in the appended claims, and illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings—

Figure 1 is a top plan view of my improved fire-escape. Fig. 2 is a sectional view on line 2 2 of Fig. 1. Fig. 3 is a detail view of the mechanism for regulating the tension of the springs on the governor friction-blocks.

Reference now being had to the details of the drawings by letter, A designates a shaft mounted in suitable bearings on the brackets B, and fastened to the end of said shaft is a rope-reel C, about which the rope is wound, and keyed to said shaft at any suitable location is a pinion-wheel D, which is in mesh with the gear-wheel E, mounted on the counter-shaft F, which latter is journaled in the standards H. A spring is secured to said counter-shaft at one end, while its other end is fixed, it being the purpose of said spring to become under tension. While the shaft is rotating by reason of the descent of a person attached to the rope fastened about said reel and when the weight of the person is relieved from the end of the rope, said spring is adapted to cause a shaft F to rotate in the opposite direction and wind the rope upon the reel, ready for another descent. Loosely journaled on the end of the shaft is a gear-wheel K, which is in mesh with a pinion-wheel L, that is mounted on and rotates with the shaft M. Said shaft M is journaled in the cross-pieces N, which are fastened to the ends of the open housing P. Said shaft M has a longitudinal groove M′, and two cross pieces or rods Q pass diametrically through said shaft M and serve as guides, and on these rods are mounted the shoes O, which are convexed on their outer surfaces and adapted to be held frictionally against the inner cylindrical surface of said housing P. Springs S are mounted upon each of said rods on either side of the shaft carrying said rods and bear between the concave surfaces of the shoes and the bracket-arms T. The shank portions of said bracket-arms are fastened, as at T′, to a rod W, which is seated in and has a longitudinal movement in the groove in said shaft M′. The shank portions of the two arms of springs, on the rods Q are connected to this rod M, as illustrated, and a collar J is held loosely against the rod W, and a lever I is fastened to said collar and may be fulcrumed or pivoted to a fixed point, as at V, and by moving said lever upon its pivotal point it will be observed that the bracket-arms may be forced against the ends of the springs, increasing the tension thereof, which will cause the outer frictional faces of the shoes to bear with considerable pressure against the inner wall of the house, or by reducing the pressure on the springs said shoes may be caused to contact with a less pressure, thus regulating the apparatus for use with heavy or light persons.

A rack N is provided, which is notched on its upper edge with N′ and a scale may be formed on the notched rack, the notches of which represent the adjustment of the apparatus for the use of persons with different weight, when the free end of the lever is held in said notches.

Pivoted to the gear-wheel K is a pawl Y, which is in mesh with the ratchet-wheel U, keyed to the shaft A, whereby as said shaft A rotates in one direction during the unwinding of the rope the gear-wheel and pinion L will rotate; but on the reverse motion of the shaft, under the influence of the spring X, the pawl Y will ride idly on the ratchet-teeth of wheel U and the gear-wheel K will remain

stationary. A spring Y′ holds pawl Y in engagement with said ratchet-wheel U.

The operation of my invention is simple and will be readily understood and is as follows: A person by throwing the end of the lever in one or the other of the notches of the rack N will cause a certain pressure to be applied on the friction-shoes, and as the party descends with the rope by gravity the spring for winding up the rope will be wound up and the frictional contact between the shoes and the inner wall of the housing will make the descent gradual. After the person is released from the rope the tension of the spring will reel up the rope and the apparatus will be in readiness for use by another person.

What I claim to be new, and desire to secure by Letters Patent, is—

1. A fire-escape, comprising the combination with the reel-carrying shaft, a spring for winding the same, a governor mechanism, comprising a fixed housing, a shaft mounted in suitable brackets and passing through said housing, geared connections between said shaft and the reel-carrying shaft, spring-actuated shoes, movable means carried by the shaft in the housing, for regulating the pressure of said shoes against the inner surface of the housing, a pawl and ratchet, between the reel-shaft and governor mechanism, as set forth.

2. A fire-escape comprising a reel and shaft carrying the same, a counter-shaft and spring for winding said reel, geared connections between the two, a governor mechanism comprising a fixed housing, a governor-shaft mounted therein, and having geared connections with the reel-carrying shaft, shoes, a pawl and ratchet between the reel-shaft and the governor mechanism carried by the governor-shaft, rods passing through the latter, and springs bearing between the governor-shaft and said shoes, and means for regulating the tension of said springs which bear against the friction-shoes, as set forth.

3. In combination with the reel-carrying shaft, a fixed housing, a governor-shaft mounted in suitable brackets thereon, convexed shoes, and rods carried by the governor-shaft, and on which rods said shoes are mounted, springs on the rods, a longitudinally-movable rod seated in a groove in the governor-shaft, bracket-arms secured to said longitudinal rod, and having arms bearing against said springs, a lever connected to said longitudinally-movable rod and a graduated notched bracket in which the ends of said lever are adapted to be held, a pawl and ratchet between the reel-shaft and the governor mechanism, as shown and described.

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

JUDSON C. SHARP.

Witnesses:

HERMAN PRIME,

WILL PRIME.