(No Model.)

A. R. YOUNT.

FIRE ESCAPE.

No. 285,197. Patented Sept. 18, 1883.

Fig. 1.

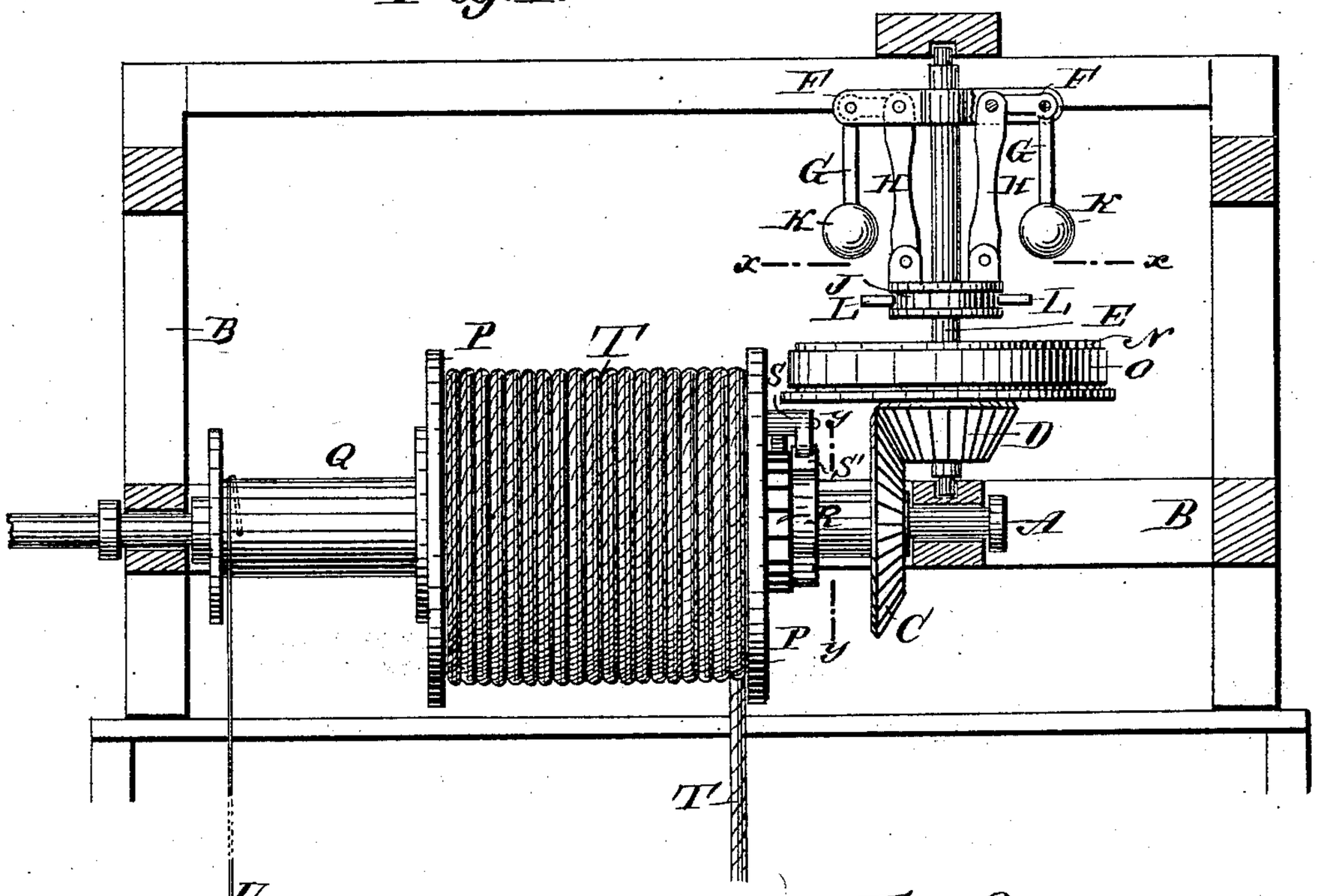


Fig. 2.

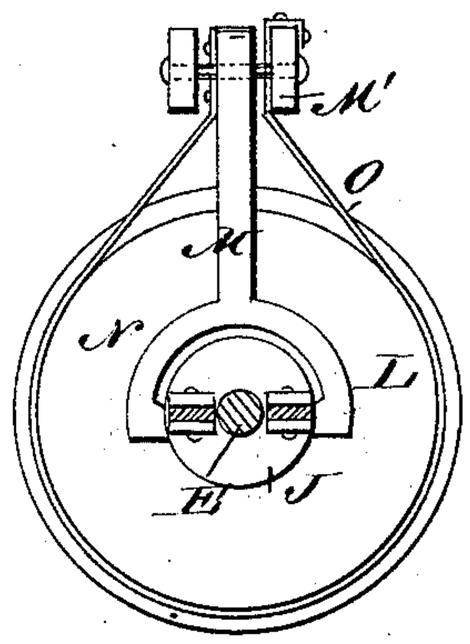


Fig. 3.

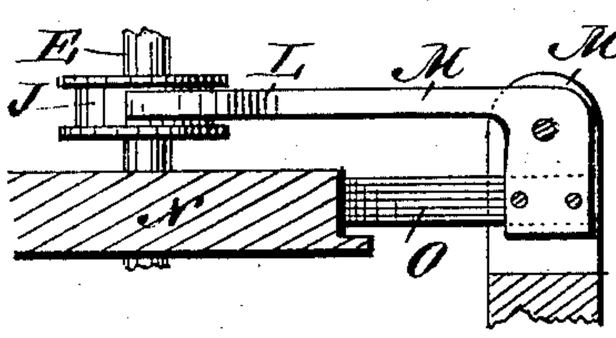
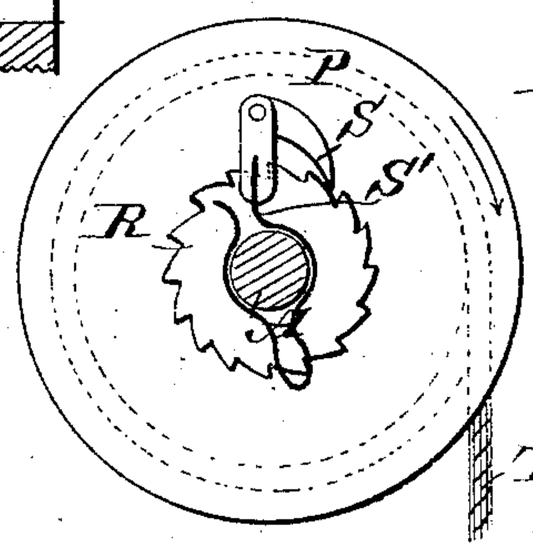


Fig. 4.



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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 285,197, dated September 18, 1883.

Application filed May 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. YOUNT, of Yountsville, in the county of Montgomery and State of Indiana, have invented a new and Improved Fire-Escape, of which the following is full, clear, and exact description.

This invention relates to that class of fire-escapes in which the persons are suspended by means of a rope or cable wound around a drum provided with a governor to regulate the speed.

In connection with this invention a drum is mounted loosely on a shaft connected with a governor, regulating the speed, which drum is integral with another drum of less dimensions. On each drum a rope or cable is wound, said ropes being wound in opposite directions, so that when one is unwound the other is wound up, thus permitting the same escape-cable to be used consecutively by any number of persons. To attain this both cables from said drums must be extended to the same point. On the end of large cable is a loop. The other cable is wound on a windlass-drum. When an escape has been made, the loop may be returned by turning the crank of windlass.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved fire-escape, parts being shown in section. Fig. 2 is a sectional plan view of a part of the same on the line *x x*, Fig. 1. Fig. 3 is a sectional view of the brake mechanism. Fig. 4 is a cross-sectional elevation on the line *y y*, Fig. 1.

A horizontal shaft, A, is suitably journaled in a frame, B, and on the said shaft a beveled cog-wheel, C, is rigidly mounted, which engages with a bevel cog-wheel, D, mounted on a vertical shaft, E, provided at its upper end with two arms, F, in the ends of which elbow-levers G are pivoted, and connecting-rods H are pivoted to the inner ends of the elbow-levers, which connecting-rods H have their lower ends pivoted to a circumferentially-grooved disk, J, mounted loosely on the shaft E and adapted to slide up and down vertically. Balls K are secured on the outer ends of arms H. The ends of a fork, L, pass into the circumferential groove in the disk J, which fork is made integral with one end of an angular lever, M, pivoted at its angle to a post or standard, M'. A brake-wheel, N, is rigidly mounted on the shaft E, and around the same a brake-band, O, made of some suitable material, is passed, and so adjusted that when the governor is at rest it will not cause any friction, which band has one end fastened to the standard M', and the other end is fastened to the downwardly-projecting arm of the lever M. On the shaft A a large and a small drum, P and Q, respectively, are mounted loosely, which drums are secured to each other or made integral. A ratchet-wheel, R, is mounted rigidly on the shaft A, adjoining one end of the drum P. On the same end of the drum P is pivoted a pawl, S, which pawl does not engage ratchet-wheel R until drum P rotates toward ratchet R. Then the U-shaped spring S', that clasps shaft A, will tip the pawl and cause it to engage the ratchet-wheel R. Thereby the descent of the cable from drum P will be governed by brake-wheel N. A cable or rope, T, is secured and wound around drum P, and a much smaller cable or rope, U, is secured to and wound around the drum Q in the inverse direction of cable T. The other end of cable or rope U is attached to and wound around a windlass-drum, W. The windlass-drum W is provided with a suitable crank-handle, W'. One or any number of integral drums, P and Q, can be mounted on the shaft A, each being provided with a pawl and ratchet. Said drums P and Q may rotate either way and independent of other drums P and Q on shaft A. Ordinarily the rope or cable T is wound on drum P enough to reach from escaping-point to the ground; also the same amount of rope or cable U is wound on windlass-drum W. If a person should put his weight on cable or rope T and descend fifty feet, drum P would pay out fifty feet, and drum Q would rotate and wind rope or cable U from windlass W. To use the escape again it is only necessary to turn windlass-drum W. This last operation may be performed while other drums P and Q are running either way promiscuously, because the shaft A is kept steady by the action of the governor on the brake in this manner. When the drum P pays out the cable T, the U-

shaped spring S′ tips the pawl S. It catches on the wheel R, whereby shaft A will be rotated, and in turn will rotate shaft E. The balls K, swinging outward, will thus move connecting-rods H and the disk J downward. Thereby the lower end of the downwardly-projecting arm of lever M will be moved from wheel N, and will draw the band O taut and press it against the edge of the wheel N. The speed will not be checked, because it cannot become excessive. The great power of brake-band O will keep a uniform speed, whether weight on cables T be much or little.

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

1. The combination, with the shafts A E, connected by the bevel-gear C D, of the arms F, elbow-lever G, carrying end balls, K, rods H, the sliding grooved disk J, the fork L, carrying lever M, pivoted at its angle to standard M′, the brake-wheel N, fast on shaft E, and the brake-band O, end fastened to parts M M′, whereby the cable may be paid out at the desired velocity, as described.

2. The combination, with the cable-shaft and loose drum, the ratchet R, fixed on shaft A, and the pivoted pawl S on the drum, of the U-spring S′, clasping said drum and arranged to tip the pawl, whereby the drum and shaft will be automatically locked together, as described.

3. In a fire-escape, the combination, with a shaft, A, of a drum mounted on the same, a rope wound on the drum, the shaft E, adapted to be operated from the shaft A, the governor-arms G, the connecting-rods H, the disk J, the fork L, the angular lever M, the brake-wheel N, rigidly mounted on the shaft E, the brake-band O, surrounding the wheel N, and having one end attached to a post or other fixed support, and the other end attached to the lever M, substantially as herein shown and described, and for the purpose set forth.

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