

(No Model.)

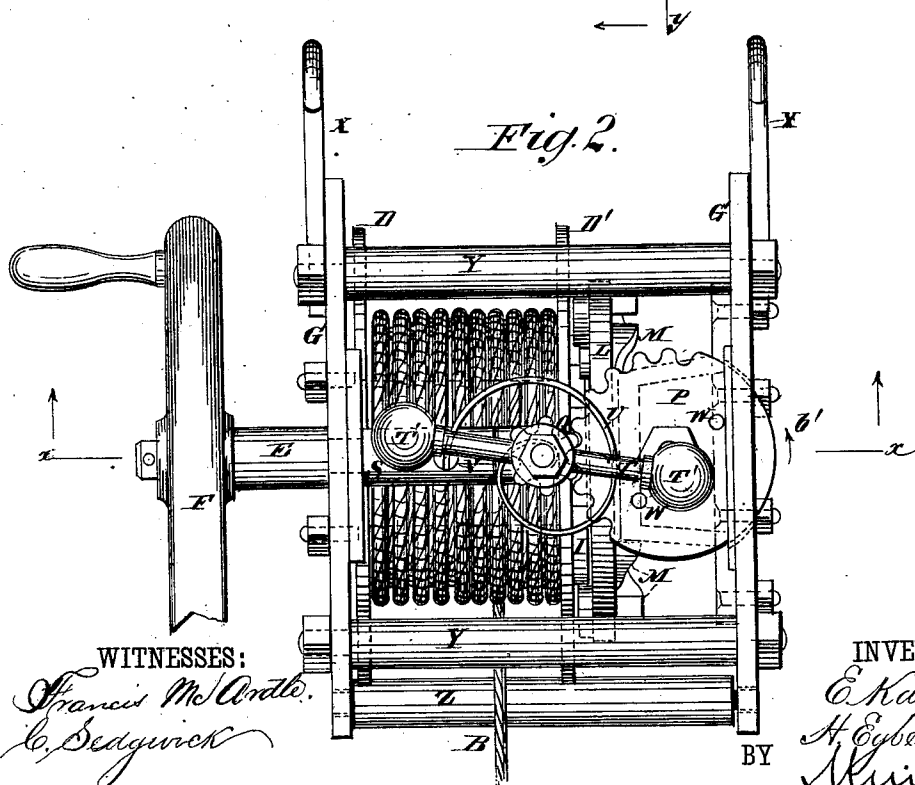
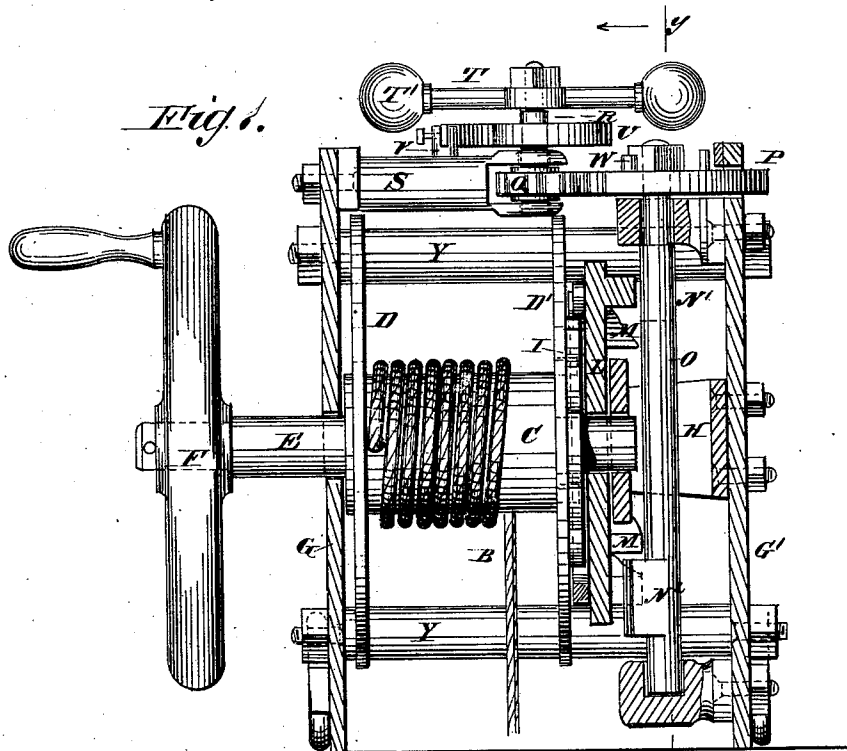
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E. KAMIN & H. EGBERTS.

Fire Escapes.

No. 235,252.

Patented Dec. 7, 1880.



WITNESSES:

Francis McAnally.
C. Sedgwick

INVENTOR:

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BY

ATTORNEYS.

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Fig. 3.

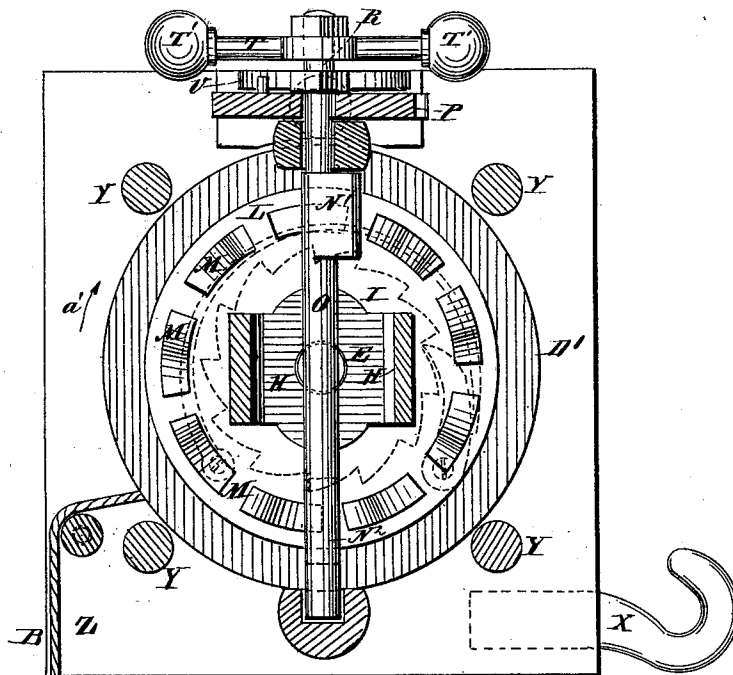
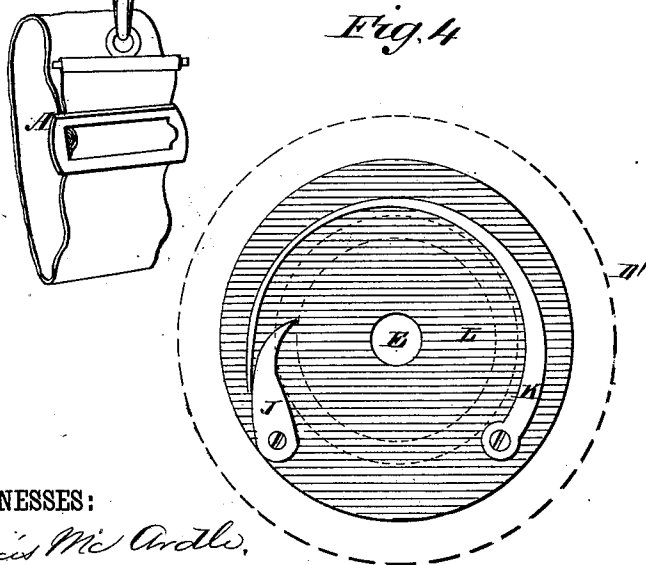


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDUARD KAMIN AND HEINRICH EGBERTS, OF BREMEN, GERMANY.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 235,252, dated December 7, 1880.

Application filed September 22, 1880. (No model.)

To all whom it may concern:

Be it known that we, EDUARD KAMIN and HEINRICH EGBERTS, of Bremen, Germany, have invented a new and Improved Fire-Escape, of which the following is a specification.

The object of our invention is to provide a new and improved fire-escape, which is simple and compact in construction, safe and reliable in use, and permits of several persons being successively lowered therewith.

Our invention consists of a metal frame with hooks for attaching it, and containing a roller having the life-rope attached thereto, to which roller is attached a ratchet-wheel engaging with a spring-pawl attached to an independent wheel provided with laterally-projecting studs engaging with lugs at the top and bottom of the shaft, having a semicircular cog-wheel mounted on the upper end, the said cog-wheel engaging with a smaller cog-wheel attached to a shaft provided with a centrifugal balance and a spiral balance-spring, which balance is alternately rotated in opposite directions as the lateral studs of the wheel strike the lugs of the shaft, whereby the rapid unwinding of the life-rope is avoided.

In the accompanying drawings, Figure 1 is a cross-sectional elevation of our improved fire-escape on the line *x x*, Fig. 2. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional elevation of the same on the line *y y*, Fig. 1. Fig. 4 is an elevation of the inner side of the independent wheel, to which the pawl and its spring are attached.

Similar letters of reference indicate corresponding parts.

A belt or brace, A, of suitable strength to support a person, is attached to one end of a rope, B, the other end of said rope being attached to a roller, C, provided with end disks, D D', and rigidly attached to a shaft, E, provided with a hand-wheel, F, or crank, and journaled in one of the side plates, G, of the frame of the apparatus, and in a crutch, H, attached to the other side plate, G'. A ratchet-wheel, I, is rigidly attached to the outer side of the disk D' of the roller C, and a pawl, J, acted upon by a spring, K, both attached to a wheel, L, loosely mounted on the shaft E, engages with this ratchet-wheel. The teeth of the ratchet-wheel are to be arranged in such a

manner that the loose wheel rotates with the roller C when the rope A is unwound, but remains stationary when the rope is wound upon the roller.

The loose wheel L is provided on the outer surface with a series of laterally-projecting studs, M M, beveled on one side, which studs alternately strike the top and bottom right-angled lugs N' N² of a shaft, O, journaled in arms projecting from the inner surface of the side plate, G', this shaft passing through the recess of the clutch H, as shown in Figs. 1 and 4.

A wheel, P, half the periphery of which is provided with cogs, is mounted on the upper end of the shaft O, and its cogs engage with those of a smaller wheel, Q, mounted on a shaft, R, held by an arm, S, or in some other suitable manner. The shaft R is provided with a transverse bar or rod, T, having balls T' or other weights at the ends, thus forming a substitute for a fly-wheel, which, however, may replace the transverse rod. A spiral spring, U, is attached to the shaft R and to a button, V, on the arm S, thus forming a spring-balance with the transverse rod T.

The wheel P is provided with two studs, W W, which prevent a complete rotation of the same. The plates G and G' are provided with some suitable hooks X X, for attaching the apparatus to a window-frame, balcony, &c. The said plates are connected by a series of transverse rods, Y Y, and also have a roller, Z, over which the life-rope B passes, journaled therein.

The operation is as follows: The person that desires to be lowered firmly secures the belt to his body after having attached the apparatus to some rigid object. As soon as the weight of the person begins to act upon the rope B the roller C will be rotated in the direction of the arrow *a'*; but if the roller C rotates in this direction the teeth of the spur-wheel I will catch on the pawl J, thus causing the loose wheel L also to rotate in the direction of the arrow *a'*. The studs M will then alternately strike against the lugs N' and N² of the shaft O, and as these lugs are at right angles to each other the stud striking the lug N² will rotate the shaft O and wheel P in the direction of the arrow *b'*; but another stud immediately strikes the lug N' and rotates shaft in the

opposite direction, and in this manner the shaft O and wheel P and the balance-rod T are continually thrown to and fro. The spring U and the studs M, striking against the lug, afford sufficient resistance to prevent the rope from uncoiling too rapidly, for as the direction of the movement of the above-named parts is reversed every instant a certain speed only can be attained. The studs or pins W W on the wheel P prevent the latter from being completely rotated, and thus cause the shaft O to present a lug, N' or N², to each stud M as it passes by. If another person is to be lowered the rope is wound upon the drum by means of the hand-wheel or crank F, and the above operation is repeated.

The apparatus is absolutely safe and does not act as a brake in case the movement is too rapid, but acts as a check from the very beginning, the checking force being required to reverse the movement of the wheel P, shaft O, and the spring-balance rod T.

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

1. In a fire-escape, the combination, with the roller C, of the wheel L, provided with studs M, of the shaft O, having lugs N' N², of the wheel P, and the spring-balance bar or wheel T, substantially as herein shown and described, and for the purpose set forth.

2. In a fire-escape, the combination, with the roller C, of the ratchet-wheel L, the spring-pawl J, the wheel L, provided with studs M, the shaft O, having lugs N' and N², the wheel P, and the spring-balance rod or wheel T, substantially as herein shown and described, and for the purpose set forth.

3. In a fire-escape, the combination, with the partially-cogged wheel P, of the pins W, the cog-wheel Q, the shaft R, the spring U, the transverse rod T, and the weights T', substantially as herein shown and described, and for the purpose set forth.

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Witnesses:

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