No. 814,458. PATENTED MAR. 6, 1906.

C. KRAMER.

FIRE ESCAPE.

APPLICATION FILED AUG. 25, 1905.

Fig: 1.

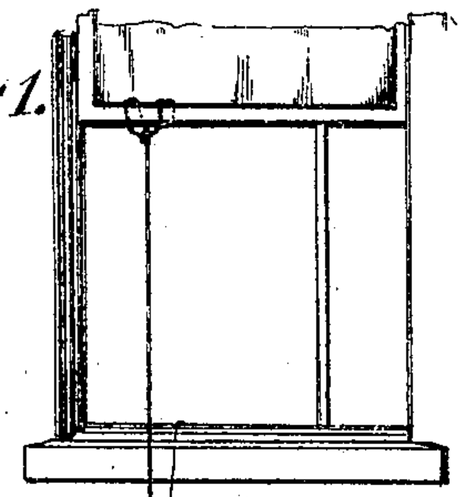


Fig: 2.

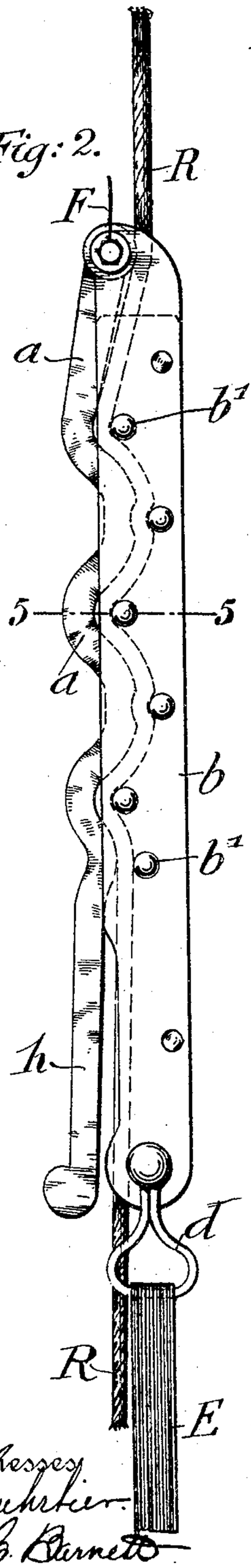
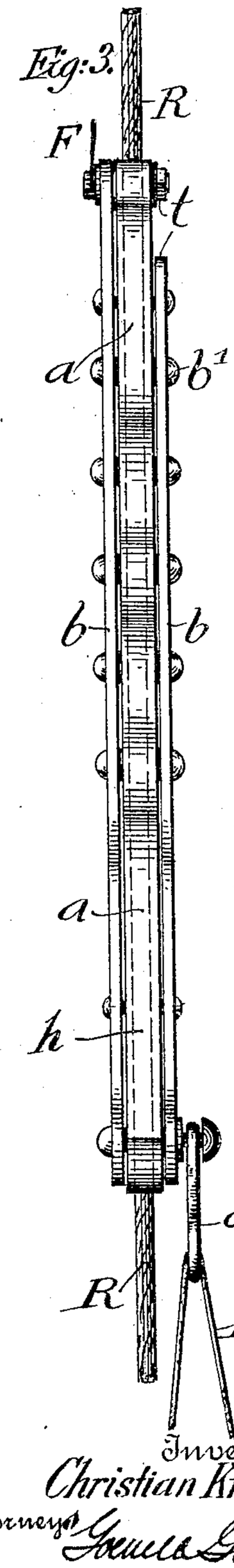


Fig: 3.



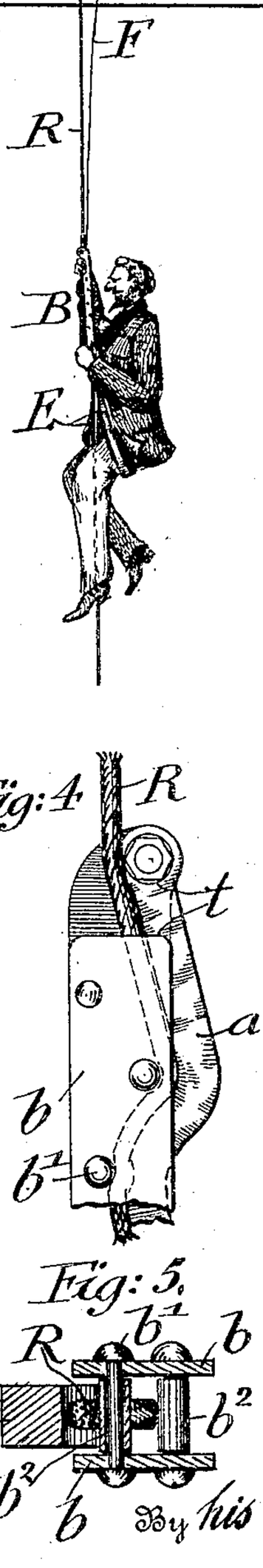


Fig: 4

Fig: 5.

Witnesses,
H. J. Buhrlen.
H. C. Barnett

Inventor
Christian Kramer
By his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

CHRISTIAN KRAMER, OF NEW YORK, N. Y.

FIRE-ESCAPE.

No. 814,458. Specification of Letters Patent. Patented March 6, 1906.

Application filed August 25, 1905. Serial No. 275,794.

To all whom it may concern:

Be it known that I, CHRISTIAN KRAMER, a citizen of the United States, residing in New York, in the borough of the Bronx and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

In making practical tests with the fire-escape for which Letters Patent were granted to me on September 13, 1904, No. 770,012, it was found that the friction device which moves along the safety-rope in making a descent could not be sufficiently held under control by the party using the fire-escape and that it was further objectionable on account of the time lost in returning the friction device from the safety-rope to its initial position so as to be used by another person who desired to use the same.

The object of this invention, therefore, is to improve the friction device in such a manner that it can be readily released from the safety-rope and returned on the same to its initial position, so as to permit the repeated use of the fire-escape and render the same thereby more practical and successful in use; and for this purpose the invention consists of a fire-escape comprising the novel features and arrangements of parts, which will be fully described hereinafter, and finally pointed out in the claim.

In the accompanying drawings, Figure 1 represents a perspective view of my improved fire-escape. Fig. 2 is a side elevation of the friction device. Fig. 3 is an end elevation. Fig. 4 is a detail side elevation; and Fig. 5 is a transverse section on line 5 5, Fig. 2.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

Referring to the drawings, R designates a rope of sufficient strength to support a person in lowering himself on the rope and of sufficient length so as to reach from the floor from which the same is used to the ground. This rope is preferably treated with fire-proofing chemicals, so as to prevent its burning when used in proximity to a fire. To the upper end of the rope R is attached a suitable suspension device by which it can be attached to the meeting-rails of the window-sill or other suitable point of support when the fire-escape is required for use. On the safety-rope R is arranged a friction device B, which consists of two elongated plates *b*, of sheet-steel, that are riveted transversely together and are provided with a number of irregularly-offset transverse pins *b'*, upon which are rotatable a number of sleeves or rollers b^2. The safety-rope R passes over a face of undulating form, over the transverse pins *b'*, and over the transverse pin at the upper end of the plates, and over the transverse pin at the lower end of the same, so that a slight friction is exerted on the rope when it is placed in position on the pin between the plates *b* of the friction device. One of the plates is slightly longer than the other and extends above the same, as shown in Figs. 3 and 4. To the upper end of this longer plate is pivoted a steel bar *a*, which is made of undulating form, so as to pass over the transverse rotary sleeves b^2, the lower end *h* of said friction-bar being elongated, so as to serve for a handle for applying the same to the safety-rope, that is passed over the rollers b^2 between the plates *b*. When the friction device is to be applied to the rope, the lever *a* is raised and the rope drawn through the space *t* between the pivot of the lever and the upper edge of the shorter plate. To the lower end of the plates *b* is pivoted a link *d*, to which is applied a suspension device E, which is applied around the body, so that the same is suspended while the friction device and its clamping-bar are taken hold of by both hands, so as to press the clamping-bar with greater or less strength against the rope clamped between it and the transverse pins of the plates *b*. The greater the pressure exerted on the lower end or handle of the clamping-bar the slower the descent of the person, and if the pressure is released the quicker is the descent of the same.

If desired, the descent may be altogether interrupted if sufficient pressure is exerted on the lower end of the clamping-bar. The lower end or handle of the clamping device and the lower end of the plates of the friction device must be of sufficient length so that both hands can grasp the same when descending and exert thereby the full strength of the person on the friction device, so as to bring the same fully within the control of the person descending, a heavier person requiring greater strength, while a lighter person requires less strength. To the upper end of the friction device is applied a thinner rope or cord F, which is of the same length as the safety-rope and which is paid out as the friction device descends on the rope. When the person who is descending on the rope arrives

on the ground, he opens the clamping-bar, so that the friction device is released from the rope. In the open position of the clamping-bar the friction device can be readily moved back again along the safety-rope to the point from which the same is suspended, so that another person can descend on the rope. This quick return of the friction device on the safety-rope forms the essential advantage of my improved fire-escape, while the simplicity of construction and the effective action of the friction device improve the handling and practical value of the escape, while it reduces considerably the expense of the escape described in my prior patent.

My improved fire-escape has the advantage that it is of simple, yet very reliable and strong construction, so as not to be liable to get out of order. It permits the safe descent of a person from any floor of a burning building by the effective action of the clamping-bar on the rope passing through the friction device.

Owing to the fact that the device is made entirely of metal, preferably steel, it is almost indestructible, while as soon as the clamping device is open the friction device can be pulled up, so that the same may be used repeatedly.

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

In a fire-escape, a friction device embodying parallel opposing plates one of which extends at one end beyond the other, a plurality of rope-guiding elements extending between said plates and irregularly offset from alinement with each other, and a clamping-bar pivoted to the overlapping portion of the plate which overlaps or extends beyond the other and movable between said plates, said bar being provided upon its inner edge with undulations conforming to the arrangement of said rollers.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHRISTIAN KRAMER.

Witnesses:
PAUL GOEPEL,
HENRY J. SUHRBIER.