H. PRINCE.

FIRE ESCAPE.

APPLICATION FILED JUNE 27, 1913.

1,095,595. Patented May 5, 1914.

Fig. 1.

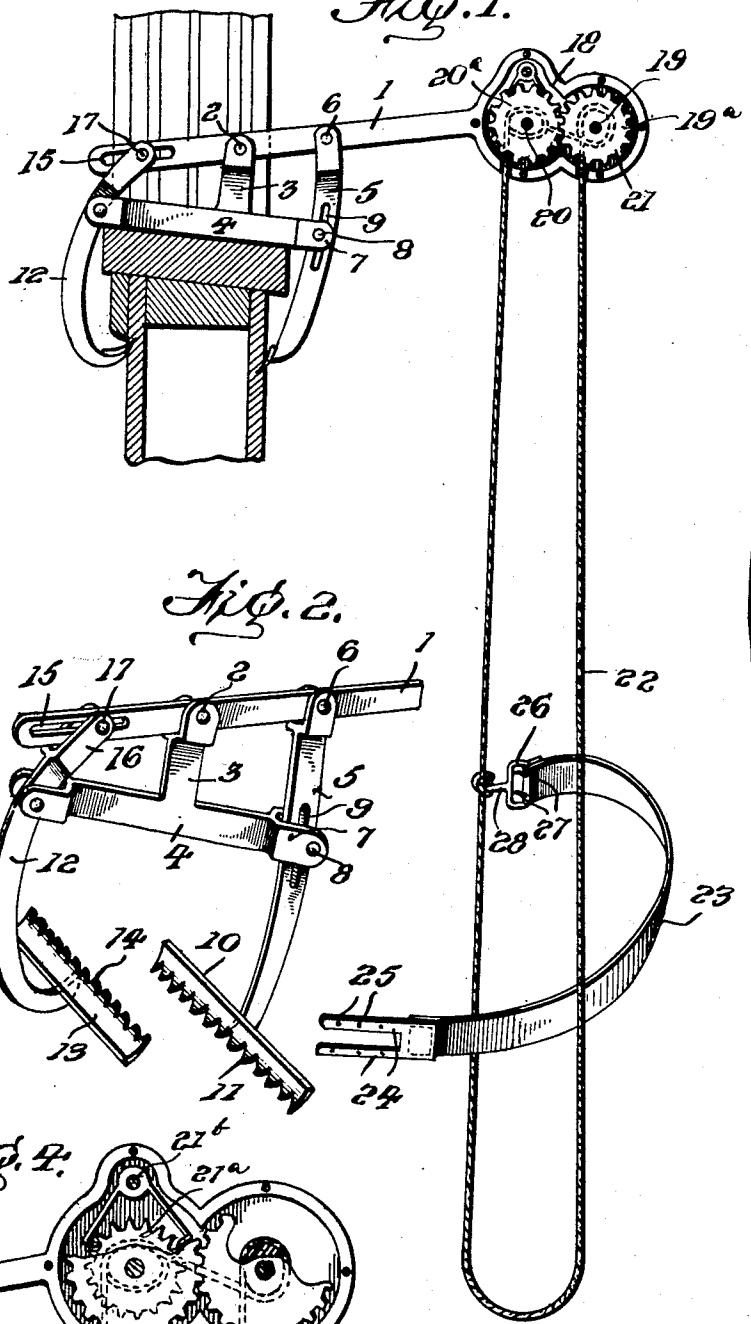


Fig. 3.

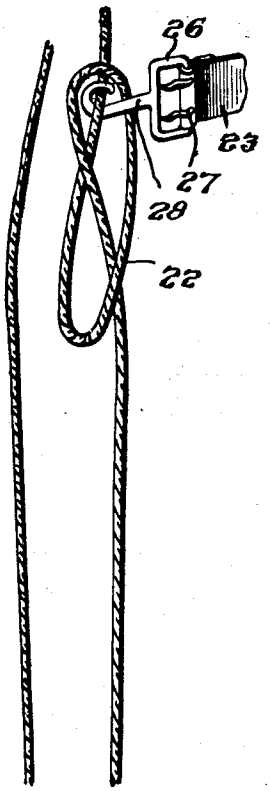


Fig. 2.

Fig. 4.

Witnesses

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FIRE-ESCAPE.

1,095,595. Specification of Letters Patent. Patented May 5, 1914.

Application filed June 27, 1913. Serial No. 776,138.

To all whom it may concern:

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

The invention relates to fire-escapes and more particularly to a portable fire-escape of that type designed to be mounted upon a window-sill and having a cable by means of which the person using the escape may descend to the ground.

It is one aim of the invention to so construct the attaching member of the escape that it may be readily and quickly applied, and firmly clamped to any ordinary window-sill or roof, and will bind to the window-sill more firmly as weight is imposed upon the cable.

Another aim of the invention is to provide an escape so constructed that it will not occupy a considerable amount of space when not in use and will not require the use of tools of any sort in applying it to a window-sill.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:—

Figure 1 is a view partly in elevation and partly in section illustrating the escape. Fig. 2 is a detail perspective view of the attaching device. Fig. 3 is a detail perspective view illustrating the manner in which the belt of the device may be attached to the cable. Fig. 4 is a view in elevation, parts being broken away, illustrating the system of the pulleys over which the cable is trained.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

In the drawing the attaching device is illustrated as including an arm 1 which is pivotally supported for rocking movement, as at 2, at the upper end of a portion 3 of a base member 4.

A gripping arm 5 is pivoted at its upper end as at 6 to the supporting arm 1 and adjacent its upper end this arm 5 is disposed within the bifurcated end 7 of the base member 4 and a pin 8 is fitted through the furcations and through a slot 9 formed in the said arm 5. At its lower end the arm 5 is provided with a transversely extending head 10 which has teeth 11 designed to bite into the outer wall of the house, in the window of which the fire-escape embodying the present invention is arranged.

Mounted for rocking movement in the bifurcated end of the base-member 4 is a gripping arm 12 corresponding to the arm 5, except that at its lower end it is bent to extend upwardly and inwardly toward the said arm 5 and is provided with a transversely extending head 13 having teeth 14 adapted to enter the woodwork of the housing or to bite into the said window-sill or beneath the said sill.

The supporting arm 1 is formed with a slot 15, and the gripping arm 12 at its upper end is bifurcated or of yoke formation, as indicated at 16, and has a pivot pin 17 extending through its furcations and through the said slot 15. The support 1 is provided at its outer end with a casing 18 which may be closed by a side plate (omitted in the drawing for the sake of clearness) and within the casing are journaled shafts 19 and 20 upon which are fixed pulleys 19^a and 20^a respectively. It will be observed by reference to the drawing that the peripheries of the pulleys 19^a and 20^a are toothed as indicated at 21 and that their teeth mesh. The grooves in the pulleys do not follow a circle but on the other hand, the intermediate or body portions of the pulleys are elliptical in cross-section and the pulleys are so meshed that the major axis of the ellipse described by one groove is at right angles to the major axis of the corresponding portion of the other pulley. A cable 22 is trained over the pulleys in a manner clearly illustrated in Fig. 4 of the drawing and this cable is of such length that after it has been properly trained over the said pulleys it will reach to the ground or sufficiently near thereto to permit of the person using the escape dropping to the ground without injury after having lowered himself the full length of one stretch of the rope.

In order that the descent will not be too rapid, an escapement pinion 21^a is fixed upon the shaft 20 and an escapement lever 21^b is mounted within the casing and coöperates with the pinion 21^a for the purpose stated.

It will be understood that inasmuch as the pulleys are so arranged that the major axis of the ellipse, described by the body portion of one pulley will extend at right angles to the major axis of the corresponding portion

of the other pulley, the travel of the cable over the pulleys, is retarded.

In connection with the device there is employed a belt which is indicated by the numeral 23, and which may be readily put on by the user of the escape, the belt being provided at one end with spaced straps 24 having the usual openings 25 therein and provided with a buckle 26 having two tongues 27 to engage in the openings in both of the straps 24. The buckle 26 is further provided with an integral hook 28 which may be engaged with one stretch of the cable 22 and the cable is looped over the hook, for example, in the manner shown in Fig. 3 of the drawing, so as to prevent slipping of the hook lengthwise of the cable. After the user of the apparatus has put on the belt and engaged the hook with one stretch of the cable he may grip the other stretch and gradually lower himself to the ground.

From the foregoing and from an inspection of Fig. 1 of the drawing, it will be seen that the teeth 11 of the head 10 bite into the outer wall of the building beneath the window sill and that the downward pressure exterted by the supporting arm 1 against the arm 5 will serve to hold the head 10 firmly in such engagement. As the supporting arm rocks upon its pivot 2, the upper end of the arm 16 will be swung in such manner as to cause the teeth 14 of the head 13 to bite firmly in the material of the sill or in the wall beneath the sill and the gripping engagement of the arms 5 and 12 with the wall or sill is rendered more firm as weight is imposed upon the supporting arm 1.

Having thus described the invention what is claimed as new is:—

1. In a fire-escape, a base-member, a supporting arm pivotally mounted thereon, gripping arms pivotally mounted upon the base-member and connected with the supporting arm.

2. In a fire-escape, a base-member, a supporting arm pivotally mounted thereon, and gripping arms pivotally supported at the ends of the base-member and each provided at its lower end with a gripping head, the arms being pivotally connected at their upper ends with the supporting arms.

3. In a fire-escape, a base-member, a supporting arm pivotally mounted thereon, and gripping arms pivotally mounted upon the base-member and each provided at its lower end with a gripping head, the upper ends of the gripping arms being pivotally connected with the supporting arms at opposite sides of the pivot for the supporting arm.

4. In a fire-escape, a base-member, a supporting arm pivotally mounted upon the base-member, a gripping arm pivotally mounted upon the base member and pivotally connected at its upper end with the supporting arm and having a head at its lower end provided with downwardly projecting teeth, and a gripping arm pivotally mounted upon the base-member and pivotally connected with the supporting arm at the other side of the pivot to the said supporting arm, the last mentioned gripping arm having its lower end portion turned upwardly and provided with a head having upwardly projecting teeth.

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

HERBERT PRINCE. [L. S.]

Witnesses:
WILLIAM JAMES,
JOHN NUNE.