S. UNGER.

FIRE ESCAPE.

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1,118,316.

Patented Nov. 24, 1914.

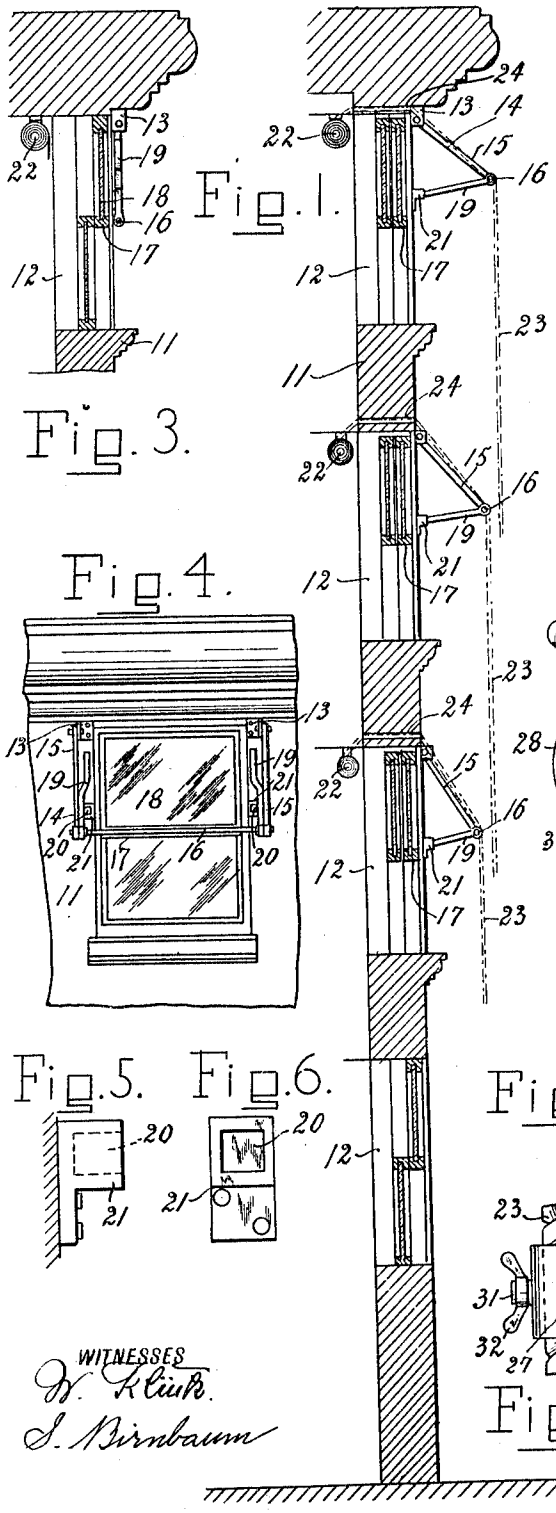


Fig. 1.

Fig. 3.

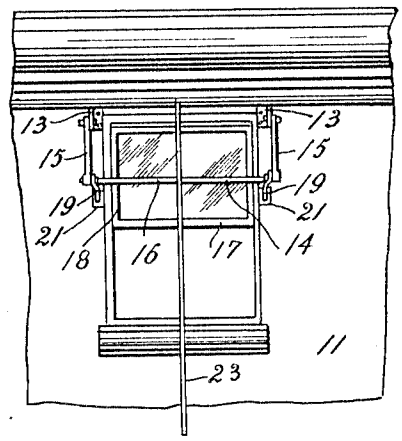


Fig. 2.

Fig. 4.

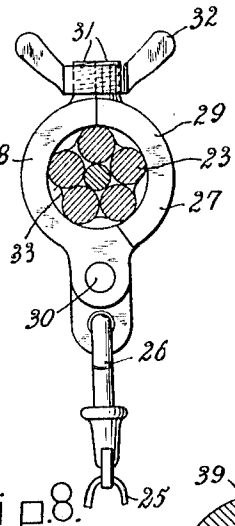


Fig. 8.

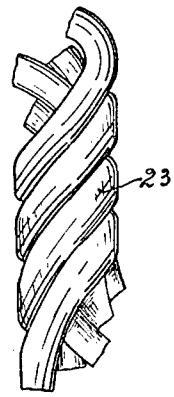


Fig. 7.

Fig. 5.

Fig. 6.

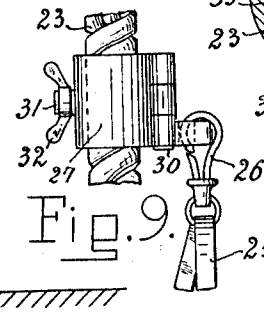


Fig. 9.

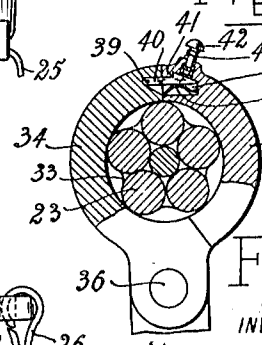


Fig. 10.

WITNESSES

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FIRE-ESCAPE.

1,118,316. Specification of Letters Patent. Patented Nov. 24, 1914.

Application filed October 19, 1912. Serial No. 726,706.

To all whom it may concern:

Be it known that I, SALAMON UNGER, a citizen of the United States, and resident of the city of 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 present invention relates to fire-escapes, and more particularly to that form in which a flexible line is suspended outside of the building, down which persons can lower themselves from the building to the ground.

One of the objects of the invention is to provide a construction which can be readily and easily adjusted at a moment's notice to support the lowering rope at a convenient distance from the walls of the building so that the persons descending will be kept away from the wall.

Another object of the invention is to provide means, whereby the persons descending will travel at a comparatively slow speed, and prevented from sliding on persons descending on the same rope.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

Two of the many possible embodiments of the invention are illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section taken through a building wall provided with the fire-escapes forming the subject matter of the present invention; Fig. 2 is a front elevation of a portion of said wall and the fire-escape; Fig. 3 is a section similar to that shown in Fig. 1, the rope support being held in its inoperative position; Fig. 4 is a front elevation of the device shown in Fig. 3; Fig. 5 is a side elevation of a detail of construction; Fig. 6 is a front elevation of this detail; Fig. 7 is an elevation of the rope used in connection with this invention; Fig. 8 is a plan view of the means which connect the safety belt with the rope; Fig. 9 is a front elevation, on a smaller scale, of the device shown in Fig. 8; and Fig. 10 is a plan view, partly in section, of a modified means for connecting the safety belt with the rope.

In the drawings, the numeral 11 indicates the wall of a building, provided with windows 12, 12. In the upper plane of each window frame, and particularly at the sides thereof are attached to the wall of the building brackets 13, 13, to which are pivotally attached the main braces 14 of the fire-escapes. These braces are, preferably, U-shaped, and the lengths of their legs 15, 15 are such that when the braces are folded against the wall into the position shown in Figs. 3 and 4 of the drawings, the cross bars 16 thereof will be in alinement with the lower horizontal rails 17 of the upper window sashes 18. To the ends of the cross bars 16 are fulcrumed spreading arms 19, the inner free ends of which are adapted to engage recesses 20 in supports 21, 21, which are fastened in any suitable manner to the wall of the building at the sides of the window frame. The spreading arms are, however, adapted to be folded into parallel relation to the legs 15 of the main braces, as clearly shown in Figs. 3 and 4 of the drawings. The lengths of the spreading arms 19 decrease from the uppermost story of the building to the lowermost one, as clearly shown in Fig. 1 of the drawings, whereby the lowering ropes which are supported by the cross bars 14 of the main braces will not interfere with each other.

Near to each window which is provided with a fire-escape is arranged a reel 22, preferably upon the ceiling of the room, and upon each reel is wound a lowering rope 23, the end of which protrudes through a hole 24 in the wall of the building to the outer surface of said wall. The ropes are, preferably, wire ropes, the strands of which are twisted, forming a cable, having a surface constituting a multiple screw, or in other words a screw having a plurality of parallel threads. The pitches of these threads are, as shown in Fig. 7 of the drawings, comparatively high.

The person intending to descend from a window, ties to his or her body a safety belt 25 of any suitable construction, each belt being provided with a snap hook 26, which is adapted to engage a separable screw nut

27, as shown in Figs. 8 and 9 of the drawings. This screw nut comprises two sections 28 and 29, which are pivoted together at 30, and provided at their front ends with screw threaded semi-cylindrical projections 31, 31, the threads of which are adapted to mesh with those of a wing nut 32. The threads 33 of the nut 27 are of the same size, type and pitch as those of the wire rope 23, and may be brought into engagement with the same by unscrewing the wing nut 32, turning the section 29 of the nut 27 around its pivot 30 until the rope 23 is adapted to enter the screw threaded semi-cylindrical recess in the section 28 of the nut, and then bringing the section 29 into its normal position to be held therein by screwing up the wing nut 32.

A modification of the separable nut is shown in Fig. 10 of the drawings, which comprises two sections 34 and 35, pivoted together at 36. The section 35 is provided with a recess 37, in which is arranged a leaf spring 38, while to the section 34 is pivoted at 39 a catch 40, adapted to enter the recess 37, to be forced by the spring 38 against a shoulder 41 in the recess 37, and holding thereby the two sections of the nut in their gripping positions relative to the wire rope 23. To disengage the catch 40 from the section 35 of the nut, the latter carries shiftably thereon a push button 42, which is held normally in its outer position by means of a spring 43. In pushing the button 42 toward the center of the nut, the catch is disengaged from the shoulder 41 upon the section 35, whereby the said two sections can be separated and disengaged thus from the wire rope.

The operation of the fire-escape is as follows: Normally the spreading arms 19 are arranged parallel to the legs 15 of the main braces 14, and the said main braces abut against the wall of the building. In these positions the cross bars 16 of the main braces will be in line with the lower horizontal rails 17 of the upper window sashes 18, or in other words will not interfere with the admission of light to the building. In the event of fire, first the main braces are extended into their positions shown in Figs. 1 and 2 of the drawings and the spreading arms 19 engaged with their supports 21. The protruding ends of the wire ropes are then brought into engagement with the cross bars 16 of the main braces and lowered until they reach the ground. The persons intending to lower themselves to the ground, tie then around their bodies the safety belts 25, and engage one after the other the separable nuts 27 with the wire ropes 23. As soon as a person steps outside the window, the weight of his or her body will cause a rotary motion of the nut 27 relative to the wire rope 23, whereby the person will at a slow speed safely descend to the ground, rotating, of course, around the rope 23 with the nut 27 of the belt.

What I claim is:—

1. In a fire-escape, the combination with a U-shaped main brace pivotally and permanently attached to the outer face of the walls of a building at the upper ends of the sides of a window frame, of two recessed supports attached also to the outer face of the wall of the building at a substantial distance below the pivots of said main brace, spreading arms fulcrumed to said main brace and adapted to engage the recesses in said supports, said spreading arms being adapted to be folded into parallel relation to said main brace and said main brace being adapted to be swung around its pivots so as to abut against the face of the wall, and a wire rope supported by said main brace, the lengths of the legs of said main brace being such that when said brace is brought to abut against the wall the cross bar of said brace will be in alinement with the lower horizontal rail of the upper window sash.

2. A fire-escape, comprising a U-shaped main brace consisting of a cross bar and two legs, the ends of said legs being fulcrumed permanently to the outer face of a wall at the upper ends of the sides of a window frame, spreading arms pivoted to the ends of said cross bar, recessed supports fastened also to the outer face of the wall, said spreading arms being adapted to engage the recesses in said supports, whereby said cross bar is held at a substantial distance from said wall, said spreading arms being also adapted to be folded into parallel relation to said legs and said main brace together with said spreading arms being adapted to be folded to abut against the wall, and a wire rope supported by said cross bar, the lengths of the legs of said main brace being such that when said brace is brought to abut against the wall the cross bar of said brace will be in alinement with the lower horizontal rail of the upper window sash.

Signed at New York, in the county of New York and State of New York, this 15th day of October, A. D. 1912.

SALAMON UNGER.

Witnesses:
S. BIRNBAUM,
WM. KLINK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."