

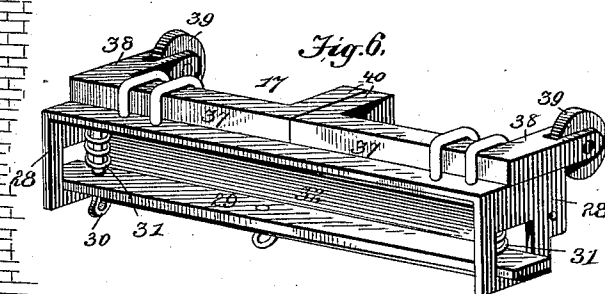
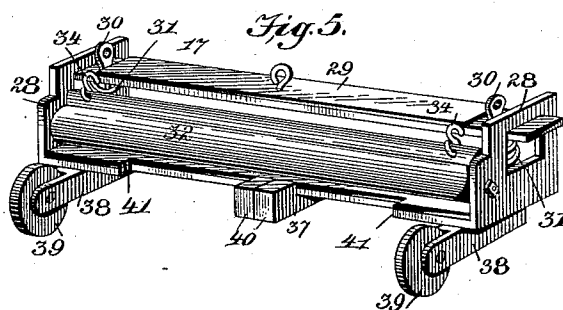
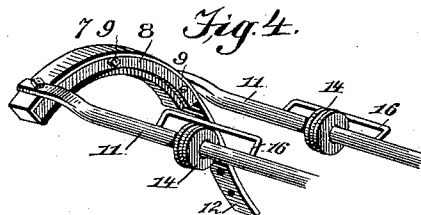
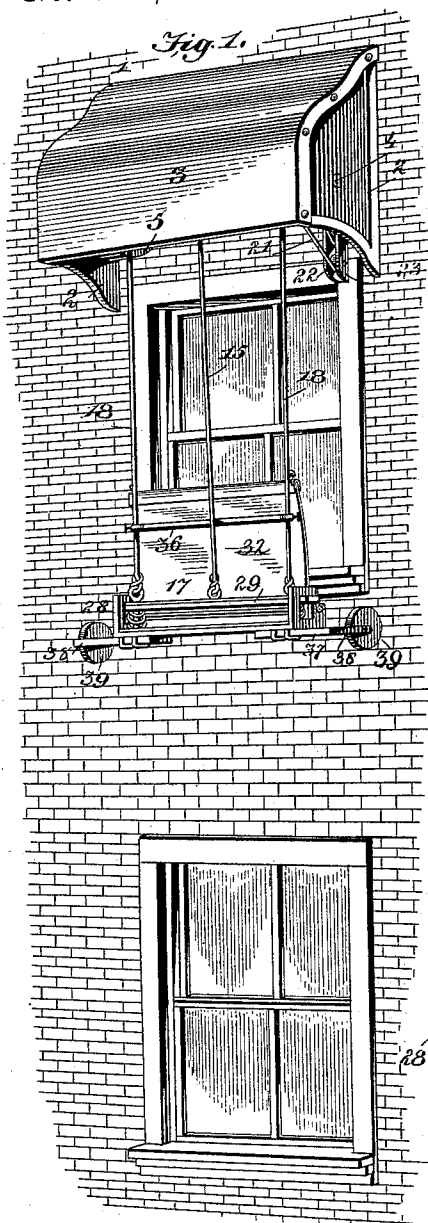
(No Model.)

2 Sheets—Sheet 1.

B. F. EDGINGTON & H. CALHOON.  
FIRE ESCAPE.

No. 580,852.

Patented Apr. 20, 1897.



Witnesses

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R. M. Smith

By their Attorneys,

Inventors  
Benjamin F. Edgington  
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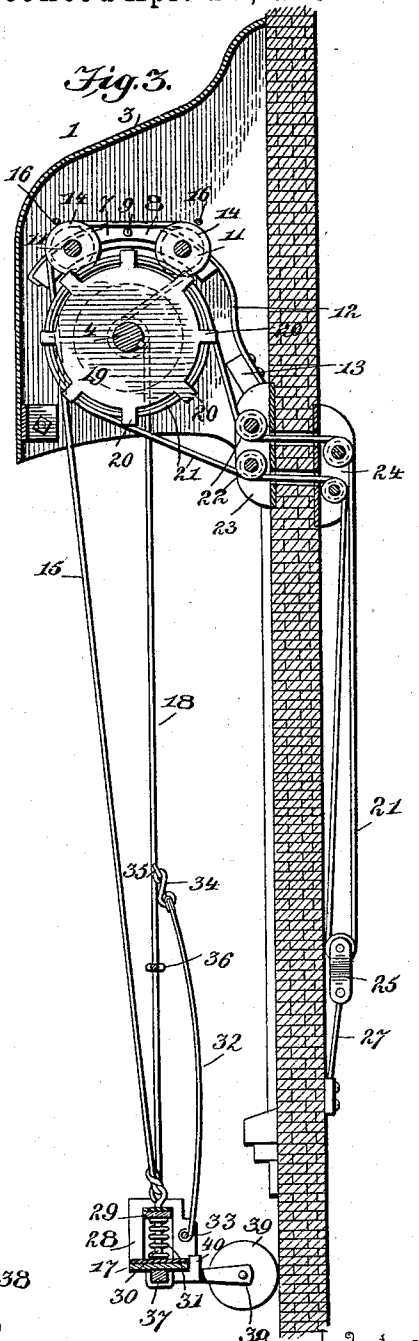
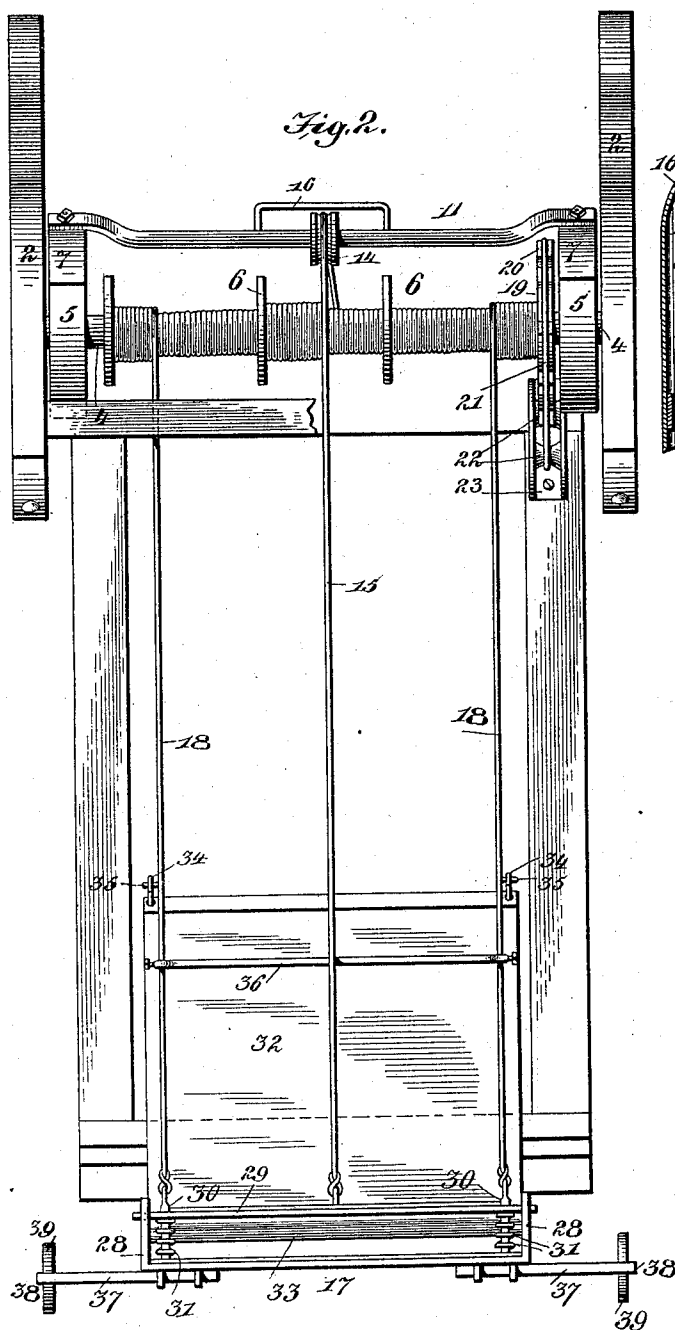
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# UNITED STATES PATENT OFFICE.

BENJAMIN F. EDGINGTON AND HARRISON CALHOON, OF PLUM TREE,  
INDIANA.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 580,852, dated April 20, 1897.

Application filed June 16, 1896. Serial No. 595,781. (No model.)

*To all whom it may concern:*

Be it known that we, BENJAMIN F. EDGINGTON and HARRISON CALHOON, citizens of the United States, residing at Plum Tree, in the county of Huntington and State of Indiana, have invented a new and useful Fire-Escape, of which the following is a specification.

This invention relates to fire-escapes; and the object in view is to provide an apparatus adapted to be permanently attached to the outer wall of a building, adjacent to a window, and made in the form of a trapeze suspended by means of chains or metallic connections from an overhead windlass, while communication is at all times maintained between the trapeze and the novel construction of brake mechanism arranged adjacent to the windlass, whereby a person while lowering himself may readily control and regulate the speed of rotation of the windlass and the consequent speed at which he is being lowered.

The invention also aims to provide means whereby the trapeze will be caused to move evenly or uniformly up and down without interfering with or striking against the sills or cornices of windows located in its path of travel.

Another feature of our invention consists in a flexible guard which is carried by the trapeze and which may be adjusted into position to protect a person standing on the trapeze from the flames, heat, and smoke.

Other objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in an improved fire-escape embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing the improved fire-escape as applied to a building, and also showing the trapeze-bar slightly lowered in readiness for a person to descend. Fig. 2 is an enlarged detail front elevation of the same with the casing removed or broken away to show the windlass and brake mechanism, &c. Fig. 3 is a vertical transverse section through the same, taken also through the wall of the build-

ing and showing the return-line. Fig. 4 is a detail perspective view of the brake-beam and brake-shoes. Fig. 5 is a similar view of the trapeze-bar. Fig. 6 is a reverse perspective view of the trapeze-bar. Fig. 7 is a detail section through one of the brake-shoes.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates a suitable casing consisting of the side or end pieces 2, forming bearing-brackets, and the covering-plate 3, which is preferably of thin sheet metal and extends across and connects the end pieces or brackets 2.

4 designates a windlass-shaft which is mounted at its opposite ends in the brackets 2, so as to rotate freely, and is provided at or near each end with a friction-wheel 5. Intermediate the wheels 5 the windlass-shaft is provided with circumferential flanges or disks 6, which form separate and independent spaces upon which different chains may be wound.

Adjacent to the windlass, and preferably located above the same, is a brake. This brake comprises two brake-shoes 7, which are preferably composed of rubber and located immediately adjacent to the peripheries of the friction-wheels 5. These rubber brake-shoes are bounded and braced by reinforcing metal side plates or pieces 8, which are connected and held firmly together by means of bolts or other fastenings 9. The bolts or fastenings 9 pass through eyes in the adjacent ends of eyebolts 10, and the latter pass through openings in the ends of spaced rods or bars 11, which together form the brake-beam rigidly connecting the brake-shoes.

The brake shoes and beam just described are supported by means of leaf-springs 12, fastened at one end to fixed points within the casing, such as the lugs 13, and secured at their free ends, preferably, to the outer surfaces of the brake-shoes, although they may be secured in any convenient manner. These springs sustain the brake-shoes at a distance slightly removed from the peripheries of the friction-wheels 5, but yield readily for allowing the shoes to bind against said wheels.

Upon the central portion of each rod or bar

11 is journaled a loose pulley 14, having its periphery grooved to receive the life-line 15, which is preferably in the form of a chain or flexible metallic connection to prevent its being burned. Each of the pulleys 14 is adapted to move longitudinally of its respective rod 11, but is limited as to its movements by a bail-shaped guard 16, attached to each rod 11 and forming a stop for its respective pulley.

The trapeze-bar (indicated at 17) is suspended from the windlass by means of chains or flexible metallic connections 18, which are adapted to be wound upon the windlass-shaft at each side of the central life-line 15. Upon the windlass-shaft, near one end, is mounted fast a wheel or disk 19, having a series of radial arms 20, formed in their outer ends with V-shaped notches to receive a flexible connection 21, which passes one or more times around said wheel or disk, and thence under suitable grooved pulleys or rollers 22, mounted in a bracket 23 upon the outer wall of a building, thence through the wall and over the rollers of a similar bracket 24 upon the inner side of the wall, and, lastly, around the pulleys or rollers of a stirrup 25, yieldingly connected to a fixed point inside of the window by means of an elastic connection or spring 27. This spring serves to keep said flexible connection 21 taut, and the said connection forms the return-line by means of which the trapeze-bar may be drawn upward for the descent of other persons. The said return-line also affords means for partially lowering the trapeze-bar and may be used to lower children to the ground.

The trapeze-bar 17 is provided with up-turned ends 28, which are slotted, as shown, to receive a depressible foot-bar 29, the ends of which work in said slots. The bar 17 is also provided with upwardly-projecting posts 30, extending through openings in the foot-bar 29, and these posts have coiled springs surrounding them and interposed between the foot-bar 29 and the trapeze-bar 17. These springs 31 allow the foot-bar to be depressed relatively to the trapeze-bar for drawing upon the line 15 and applying the brake. The line 15 passes over the grooved pulleys on the rods 11, forming the brake-beam, and then winds upon the central portion of the windlass-shaft, so that when said line is drawn downward to a greater extent than the other lines or chains 18 the brake-shoes will be thrown into frictional engagement with the wheels 5, thus enabling the person standing on the trapeze-bar to arrest his downward progress.

32 designates a flexible guard of leather, asbestos, or other suitable material adapted to resist the action of the fire. This guard is normally wound upon a roller 33, journaled in the trapeze-bar, but is adapted to be quickly unrolled and provided at its free end with hooks 34, which may be engaged with eyes or rings 35, secured to the side lines 18 at suitable points. This guard is interposed be-

tween the person and the burning building and protects him from injury.

36 is a hand rail or rod extending across between the side lines 18 and provided with terminal eyes through which said lines pass. This hand-rod is also provided with set-screws, by means of which it may be held at any point on the lines 18 for affording an efficient handhold, as shown in Fig. 1.

37 indicates a pair of longitudinally-extensible arms slidably mounted upon the lower side of the trapeze-bar 17 in any convenient manner. These arms have inwardly-extending terminal portions 38, in the inner ends of which are mounted rollers or wheels 39, adapted to travel against the wall of the building during the raising or lowering of the apparatus. These arms when extended outward are adapted to straddle the window frames, sills, and cornices located beneath the fire-escape casing and prevent interference therewith. The outward movement or extension of the arms 38 is limited by means of lateral extensions 40 at the inner ends of said arms, which come in contact with shoulders 41 on the bar 17, as shown.

From the foregoing description it will be seen that a fire-escape is provided which is very simple and reliable in operation, which combines durability and safety; also, that persons descending by means of the apparatus can readily and at all times control the brake mechanism, thereby regulating the speed of descent.

When not in use, the trapeze may be drawn upward into the casing provided therefor, where it will be protected from the weather and always be in readiness for use.

The roller 33 of the flexible guard 32 may be actuated by a coiled spring similar to a curtain-shade roller for winding up the flexible guard when unhooked from the side lines.

The apparatus is of course susceptible of various changes in the form, proportion, and minor details of construction, which may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

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

1. In a fire-escape, the combination with a windlass and a vertically-movable trapeze-bar, suspended therefrom, of a friction-wheel fast on the windlass-shaft, a spring-supported brake-beam, a friction brake-shoe, a pulley journaled on said beam, and a life-line winding upon the windlass-shaft and running over said pulley and attached to the trapeze-bar, substantially as described.

2. In a fire-escape, the combination with a windlass, and a vertically-movable trapeze-bar suspended therefrom, of a pair of friction-wheels on the windlass-shaft, a pair of brake-shoes, spaced rods or bars forming the brake-beam, pulleys journaled on said rods or bars, and a life-line winding upon the windlass-

shaft and running over said pulleys and connected to the trapeze-bar, substantially as described.

3. In a fire-escape, the combination with a  
5 windlass and the lowering device suspended therefrom, of a wheel on said windlass, pulleys mounted in brackets on the inside and the outside of the wall of the building, a flexible connection extending around said wheel  
10 and pulleys, a stirrup arranged within said wall and having a roller around which said connection runs, and a spring arranged between said stirrup and a fixed point, substantially as described.

15 4. In a fire-escape, the combination with a vertically-movable trapeze, of a hand-rod having terminal eyes embracing the suspending-lines of the trapeze, said lines and means for clamping said rod on the lines at any  
20 point, substantially as and for the purpose described.

5. In a fire-escape, the combination with a windlass and brake mechanism therefor, of a trapeze suspended from the windlass, a relatively movable foot-bar on the trapeze-bar,  
25 and a flexible connection between said foot-bar and the brake, substantially as described.

6. In a fire-escape, the combination with a windlass, and a brake for controlling the same,  
30 of a trapeze suspended from the windlass, a spring-supported foot-bar mounted on the trapeze-bar, and a flexible connection between said foot-bar and the brake, all arranged substantially as and for the purpose described.

7. In a fire-escape, the combination with a  
35 vertically-movable trapeze-bar and its suspending-lines, of a winding-roller on the trapeze, a flexible guard or apron carried by the winding-roller, and devices on the free end of the apron for connecting it to the suspending-lines above the trapeze, substantially as  
40 described.

8. In a fire-escape, the combination with a trapeze, and devices to elevate and lower the same, of a brake to control said elevating and  
45 lowering devices, a spring-supported foot-bar above the trapeze, and a flexible connection between the foot-bar and brake, substantially as described.

9. In a fire-escape, the combination with a  
50 windlass supported at the top of the building, of ropes or wires depending therefrom, a trapeze-bar connected thereto, longitudinally-extensible arms 37 slidingly mounted on the trapeze-bar and carrying rollers at their outer  
55 ends to travel against the wall of the building, and stops on the trapeze-bar and on the said arms adapted to engage each other to limit the outward movement of the arms, substantially as described.  
60

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

BENJAMIN F. EDGINGTON.

HARRISON CALHOON.

Witnesses:

WILLIAM F. CRUM,

HENRY H. HARDEN.