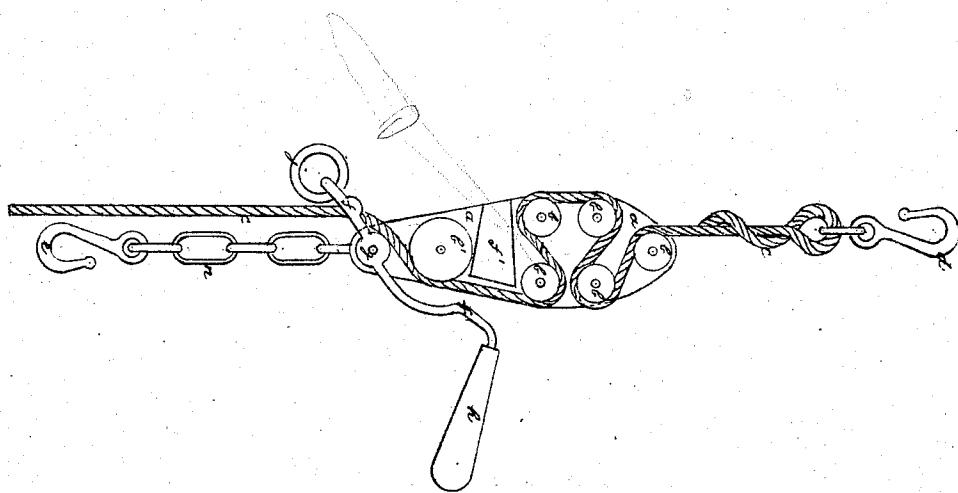


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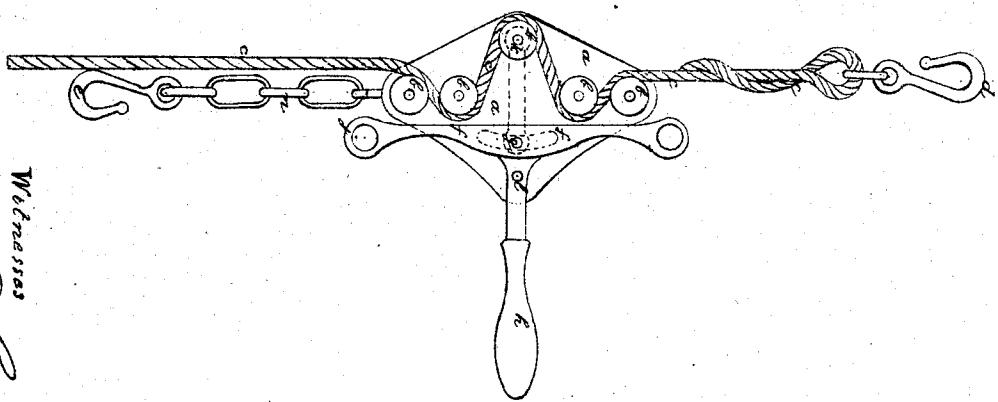
Improved Fire-Escape.

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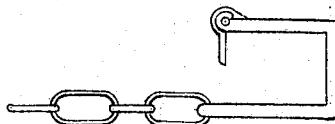
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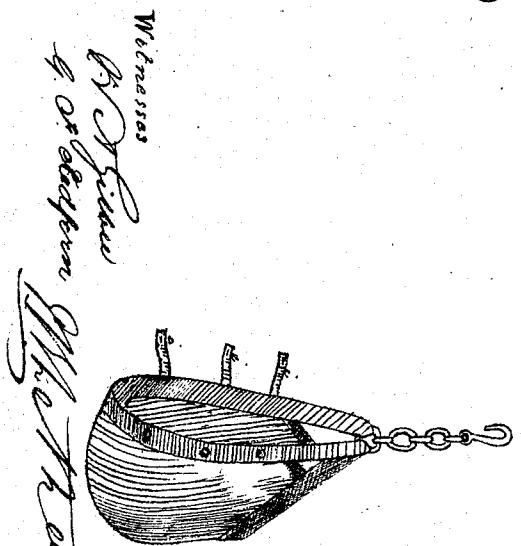
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Witnesses
B. J. Quinn
J. A. Jackson
John H. Reed

UNITED STATES PATENT OFFICE.

EDWIN ROBERT WETHERED, OF LONDON, ENGLAND.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. 118,172, dated August 15, 1871.

To all whom it may concern:

Be it known that I, EDWIN ROBERT WETHERED, of London, in the county of Middlesex, England, major in the English army, have invented an Improved Fire-Escape, also applicable to other purposes; and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same.

The invention consists in the arrangement or construction of an improved fire-escape, being an improved apparatus for enabling persons to lower themselves, and for lowering persons and property, rapidly and safely from the windows of houses on fire; also applicable for lowering persons and weights for other purposes, and for lowering and towing boats from ships.

To make my invention better understood I will proceed to describe the same by reference to the accompanying drawing, in which Figure 1 is an elevation of my improved apparatus, placed so as to enable persons to lower themselves, one side of the frame of the apparatus or block being removed to show the interior arrangement of the parts; Fig. 2, similar view of another arrangement; Fig. 3, view of the hook for placing over the sash for attaching the apparatus; and Fig. 4, view on a smaller scale of the bag or sack-loop I prefer employing for sustaining the persons to be lowered.

The apparatus shown in Fig. 1 consists of a frame, *a*, provided with a series of sheaves, *b b*, and also with a guide-pulley, *b'*. *c c* is a cord or rope which passes over the sheaves in a zig-zag direction, as shown, and is of sufficient length to extend from the window to the ground. The cord *c* is provided with a hook, *d*, at each end, only one hook being shown in the drawing. The apparatus is also provided with a chain, *n*, and a hook, *e*, the uses of which are hereinafter described. *f* is a brake or lever working on a pivot or center, *g*, and provided with a handle, *h*, by which the brake is pressed against the rope when required, nipping it against the piece *f'*, of wood or other suitable material, or by which the pressure of the brake on the rope may be relieved. The cord or rope *c* is attached, by means of its hook *d*, (when the apparatus is to be used,) to a suitable hook or staple fixed in the wall at a few feet above the window-sill, or to the hook shown

in Fig. 3, which is placed over the top of the window-sash, the latter being then fastened by means of a wood screw which may be attached to the hook shown in Fig. 3, by means of a wire cord or a small chain, so as to be always ready for use. The apparatus being thus arranged and fixed, the person wishing to lower himself passes the bag or sack-loop, shown in Fig. 4, round his body, fastening it in front by means of the straps *i*, and the bag or sack-loop is then attached by means of its hook to the ring *j* of the brake *f*, and the weight of the person will apply the brake against the rope, when he will be securely suspended. To lower himself he has to pull down the handle *h* of the brake *f*, and the friction or pulley-block will slide down the rope by the weight of the person, the speed of the descent being regulated by the brake *f*, which, by means of its handle *h*, is under the control of the person using the apparatus. If persons or property are to be lowered by means of this apparatus its position must be reversed, and the apparatus is attached by means of its hook *e* to the hook or staple in the wall, or to the window-sash, and the person to be lowered is attached by means of the bag or sack-loop to the hook *d* at the end of the rope *c*. The weight of the person thus suspended will draw the rope through the friction-block, the speed of the descent being regulated by the person at the window, who controls the apparatus either by pressing the brake *f* against the rope *c*, or by letting the rope pass through his hands. As the rope can pass through the friction-block both ways, the opposite ends of the rope may be used alternately for lowering. The piece *f'* may in some cases be dispensed with, and the brake allowed to act against the rope. In the apparatus shown in Fig. 2 the frame *a* has a series of sheaves, *b b*, over which the cord or rope *c* passes, as shown. The hook *d* of the rope is attached, as described for the apparatus shown in Fig. 1, to the top of the window-sash or to the hook in the wall. *f* is the lever or brake moving on a center, *g*, which works in curved slots (one of which is shown in dotted lines) made in the sides of the frame *a*. This center *g* is carried by links placed outside the block and pivoting at *k*. One of these links is shown in dotted lines. The brake *f* is worked by means of the lever-handle *h*, which moves on a center at *l*. One end of the lever-handle enters a groove in the brake *f*, and has a curved slot

through which the pin or center *g* passes. By this arrangement either end of the brake can be applied against the rope *c* by pulling down or pushing up the lever-handle *h*. The person wishing to descend attaches himself by means of the bag to the ring *j* of the brake *f*, as described, for the apparatus shown in Fig. 1, when the weight of his body will draw the lower end of the brake against the rope and the block will remain fixed; then to lower himself the person using the apparatus has to pull down the handle *h*, and the brake will be moved away from the rope, as shown in the drawing, when the friction-block will pass freely down the rope, the speed of the descent being regulated by relieving or increasing the hold on the handle *h* controlling the brake. The lever-handle *h* may be dispensed with, in which case the person lowering himself will have to pull on the chain *n*, thereby relieving the rope from the pressure of the brake by transferring the weight of his body from the brake to the block.

Two or three persons may descend at the same time, by means of my improved apparatus, by be-

ing suspended either to the ring *j* of the brake, or to the chain *n*, or to both.

The bag or sack-loop shown in Fig. 4, and hereinbefore referred to, is formed so as to provide a support and seat for the person, and made of stout webbing and canvas, provided with straps *i* and buttons, and with a hook at top, as shown.

Having now described my invention, what I claim is—

The combination, with the frame *a* and its system of pulleys, of the brake-lever *f*, arranged, as described and shown in Figs. 1 and 2, so as to gripe the cord by force of the weight of the person or body suspended therefrom.

In testimony whereof I, the said EDWIN ROBERT WETHERED, have hereto set my hand and affixed my seal this twenty-ninth day of July, one thousand eight hundred and seventy.

E. R. WETHERED. [L. S.]

Witnesses:

W. A. GILBEE,
G. F. REDFERN.