

J. PAYNE.
Fire Escape.

No. 241,509.

Patented May 17, 1881.

Fig. 1.

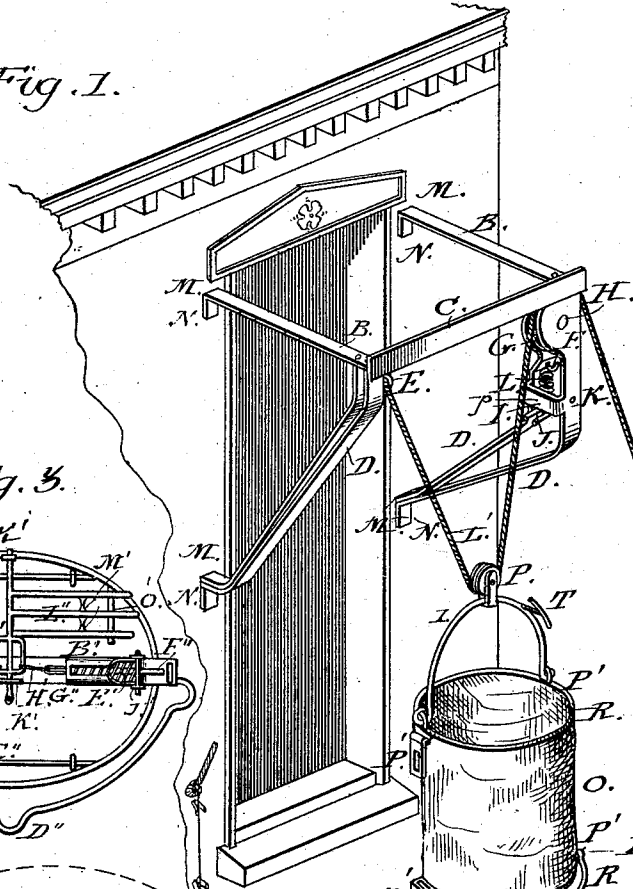


Fig. 3.

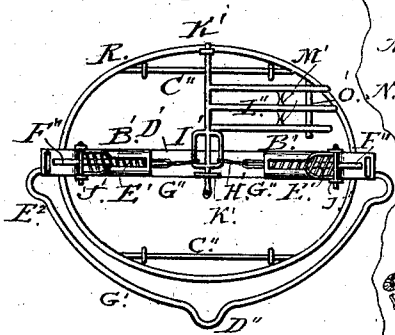


Fig. 4.

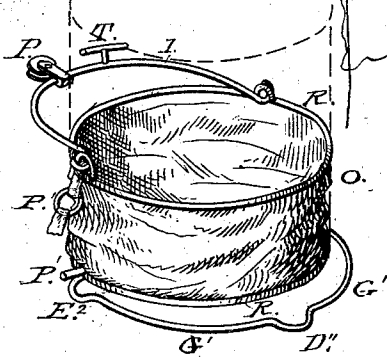


Fig. 2.

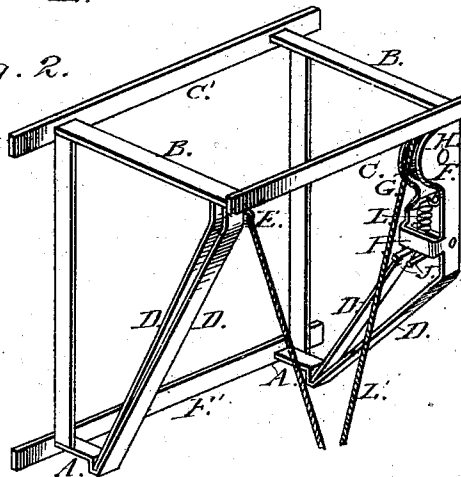
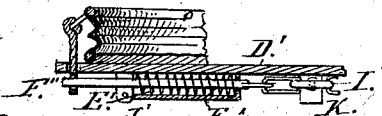


Fig. 6



Attest:

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JOSEPH PAYNE, OF DWIGHT, ILLINOIS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 241,509, dated May 17, 1881.

Application filed June 12, 1878.

To all whom it may concern:

Be it known that I, JOSEPH PAYNE, of the town of Dwight, in the county of Livingston and State of Illinois, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

The object of my invention is to provide means for men, women, children, and sick persons to escape from burning buildings, and also to enable firemen to ascend to the upper stories of buildings and to aid in taking up hose and such other implements as may be necessary to aid in extinguishing fires and save life and property.

The invention consists of a frame-work of iron or other suitable material, to which are attached a rope and pulleys, and also a sack or basket and certain other devices, all of which will be operated by pulling a rope.

The frame is attached to the building at the upper part of the windows, and is composed of the following parts, viz: Two horizontal projecting bars, B, (see drawings,) a cross-bar, C, connecting the last-mentioned bars by being welded or otherwise connected at the ends. At the corners formed by the attachment of the three bars aforesaid two pairs of braces, D, are attached by means of holes through the projecting bars near their ends, and the ends of the braces being reduced in size so as to pass through these holes are headed down or riveted. The braces D are bent obliquely toward the house, and at the lower ends one of each pair is welded to its fellow, while at the upper ends the holes in the projecting bars are drilled far enough apart to leave a space between each brace and its fellow. At one corner, where the braces are riveted, a bolt, E, passes through, near the top of one pair of braces, for the attachment of a rope. The upper part of the other pair of braces is widened at F to receive the pulley G, which revolves on the axle H.

Below the pulley and within the space between the braces is a device, I, by which the machine may be operated from the window where it is stationed, from the pavement, or from any intermediate story. Where this device is fixed the space between the braces is increased. The device I consists of two prongs,

J, secured to a bar journaled in the upper part of the brace D, which are drawn up against the piece *p* by a spiral spring hooked to a loop just below the pulley G, and also to one of said prongs. When the rope connected with the bucket is wound in an S form about these prongs the spring drawing them upward against the piece *p*, said rope will be pinched against said piece and held against accidental displacement.

The frame is secured to the house by the ends M passing through the walls, and having bolts through the ends, and being provided with flanges N, to fit against the wall on the outside, thus embracing the wall between these parts.

In my drawings, Figure 1 shows a perspective view of a building with my fire-escape frame and associate appliances attached. Fig. 2 shows a modified form of frame, which is a portable arrangement. Fig. 3 is a plan view, showing the arrangement of the parts beneath the bottom of the bucket. Fig. 4 is a perspective view of the bucket. Fig. 5 is a section showing the device I. Fig. 6 is a sectional view, showing the bucket with the upper and lower rims locked together.

Throughout the drawings similar reference-letters denote like parts.

The frame shown in Fig. 2 is for the same purpose as that shown in Fig. 1, and differs only in the mode of attachment by which it is rendered portable. This frame is to be used in the lower part of a window, and its lower part is so constructed as to fit the window-sill. It has two bars, A, formed in continuation of braces D, adapted to bear upon and against the window-sill to prevent said frame from being forced too far into the room of the building. Bar F', secured to said bars A when the frame is in place, has its ends bearing against the window-trimming to prevent said frame from falling or being drawn outward. Above the bar F' is another similar bar, C', attached in like manner to the ends of the two upper projecting bars, B.

Another part of the invention consists of the sack or bucket O, which has two rims, R, one at the top and one at the bottom, bent in the form of an ellipse. The upper has attached

to it a bail or guide, which is provided with a **T** projection, to serve the double purpose of a brake and a hold for the rope.

To the upper part of the bail or guide-bar is attached the pulley **P**, under which the rope **L'** passes before passing over the pulley **G**.

At the lower part of the sack or bucket **O** is an iron bow, **G'**, welded at each end to the lower rim, **R**, and extending half-way round the sack and parallel to it. The object of this guide or bow is to guide the bucket in its descent beyond porticoes and other projections of the building. Canvas, sail-cloth, or other suitable material **I** use to complete the body of the sack.

Attached to the upper and lower rims, **R**, is a device, **P'**, for clasping the sack's rims together when not in use, constructed similar to the clasp of a bracelet.

At **C''**, Fig. 3, are two rods, welded at their ends to the lower rim, **R**, to form, with the rim, a foundation on which the wooden floor of the sack is to rest.

D' is a strip of sheet-iron brazed near each end to the rim.

B' represents two slotted tubes secured to the sheet-iron base, in which are inclosed two open spiral springs, **E'**. Two bolts, **F''**, pass through the spiral springs, each of which has an eye, **G²**, secured by the link **H'** to the tumbling-rod **I'**. One end of each slotted tube is closed up by a cap, through which an opening is made to let the eyes of the bolts pass through. Near the other end of each bolt a flange is attached adapted to fit neatly inside of the tubes. When the bolts are in their proper places one end of the spiral springs rests against the caps and the other end against the flanges, and when the sack is clasped together the bolts are forced by the springs through that part of the clasp shown at **P'** on the upper part of the sack. Two small up-rights on each side of the bolts and a pin passing through them, as shown at **J'**, are merely for guides to keep the bolts in place. The tumbling-rod is supported and turns in the two up-rights **K'**.

At **L''** is a three-fingered lever secured to the tumbling-rod **I'**.

M' shows a rod which unites the three fingers together.

O' is an iron stop secured to the under side of the wooden floor for the two outside fingers to rest against.

To arrange the device so as to have it ready for use the rope **L'** is passed through the buckle **I**, and thence through space between the lower rim of the sack and the guide-rail **G'** and on to the ground. The sack being drawn up near the frame, the upper and lower rims are now clasped together by a person from the window. The rope is now passed several times around the prongs of the buckle **J** in the form of a figure **8**, and is then passed across the bottom of the sack to the three-

fingered lever **L''**. The rope is now passed first between the little finger and the middle finger of lever **L''**, and then passed several times around the two outside fingers, each time in the form of a figure **8**, thence over the stop **O'** as far it will go to the connecting-bars **M'**. The rope is now coiled up and placed in the sack. A small wire cord secured to the end of the rope passes down the wall to the upper part of the lower story, where it must stop. The cord is secured to the wall by means of straight wires driven into the wall at intervals of every few feet from the upper story to the point where the cord stops. Two of the wires are driven in side by side just far enough apart so that the cord will fit tightly between them, so as not to be displaced by storms. The wire should not be larger than a small knitting-needle, and it should not project from the wall more than a quarter of an inch. These wires should be driven into the wall within easy reach of the windows. To use the fire-escape from the pavement, a fireman or other person may, by the aid of a short ladder, reach the cord, which, when pulled, will draw the rope down. The weight of the rope will operate upon the three-fingered lever **L''**, the springs in the tubes being thus compressed between the caps and the flanges, the bolts are drawn from that part of the clasp shown at **P'**, and the sack is opened out its full length. Now, by giving the rope a slight jerk it is detached from the prongs of the buckle **I**, and the sack may be lowered to the window-sill, ready to be stepped into. If the person descending is very heavy the person on the pavement, by holding the rope a little from a perpendicular line, may cause it to rub against the guide-rail **G'** to increase the friction, to enable him to keep the gravitating weight entirely under control.

If projections or porticoes are to be encountered they may be avoided by pulling the sack away from the wall by sliding the rope into the semicircular projection or swell **D''** of the guide-rail.

If the flames are coming out of a window the sack may be pulled out from the wall sufficiently to pass beyond danger, or the rope may be slid around to either side desired into the swells **E²**, and thus the sack and contents be brought beyond the reach of the flames.

The fire-escape may be operated by persons in the room where it is stationed or from the sidewalk or by persons in any intermediate story between the two points. When persons let themselves down the rope should take a turn around the **T** on the bail **H**, so as to create friction and thus constitute a brake. In case of children or helpless persons the aid of firemen will be required, in which case the device is lowered, as previously described, and a fireman hauled up to the desired point. He then passes the rope round the **T** in the form of a figure **8** a sufficient number of times to secure it, when he can step into a window and assist others into the sack. To secure safety, an ample

number of the frames like that shown in Fig. 2, provided with the sack described, should be distributed through the building, and it should be the duty of firemen to reach the rooms of the building and place these machines in the windows, which may be done by raising the lower sash and putting the machine in place, and thereafter throwing the rope out to the firemen below.

10 All necessary implements for breaking through walls, &c., water-buckets, hose, &c., may be annexed to any window where needed.

Baggage and clothing may be sent down with perfect safety and with great expedition.

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

1. The frame of support for a suspended fire-escape composed of lateral or projecting bars 20 B, cross-bar C, oblique double braces D, one set of which is fashioned into a housing for pulley G, as and for the purpose set forth.

2. In combination with the frame described, the device for assisting in the operation of lowering the bucket from the window, composed

of prongs J, pivoted at K, the one end of one of them being held by a spring secured between said end and a loop secured to one arm of the brace, as specified.

3. A fire-escape bucket constructed with 30 metal rims at its top and bottom, having a bail at the upper part like the bail of a bucket, and cross-pieces at the bottom for the support of a wooden floor, the said rims being covered and connected with canvas, thus forming a 35 collapsible bucket, as and for the purpose set forth.

4. In a fire-escape, the bucket described, having clasp P', and provided with the locking and releasing device composed of springs 40 E', suitably incased, bolts F'', fingers L'', and loops H', as and for the purpose specified.

5. The bucket described, provided with bow or guide G' attached to the bottom rim, R, provided with a curvature, D'', as specified.

JOSEPH PAYNE.

Witnesses:

W. H. KINNE,

W. H. KETCHAM.