(No Model.) 2 Sheets—Sheet 1.

# W. R. PYNE.

## FIRE ESCAPE.

No. 321,385. Patented June 30, 1885.

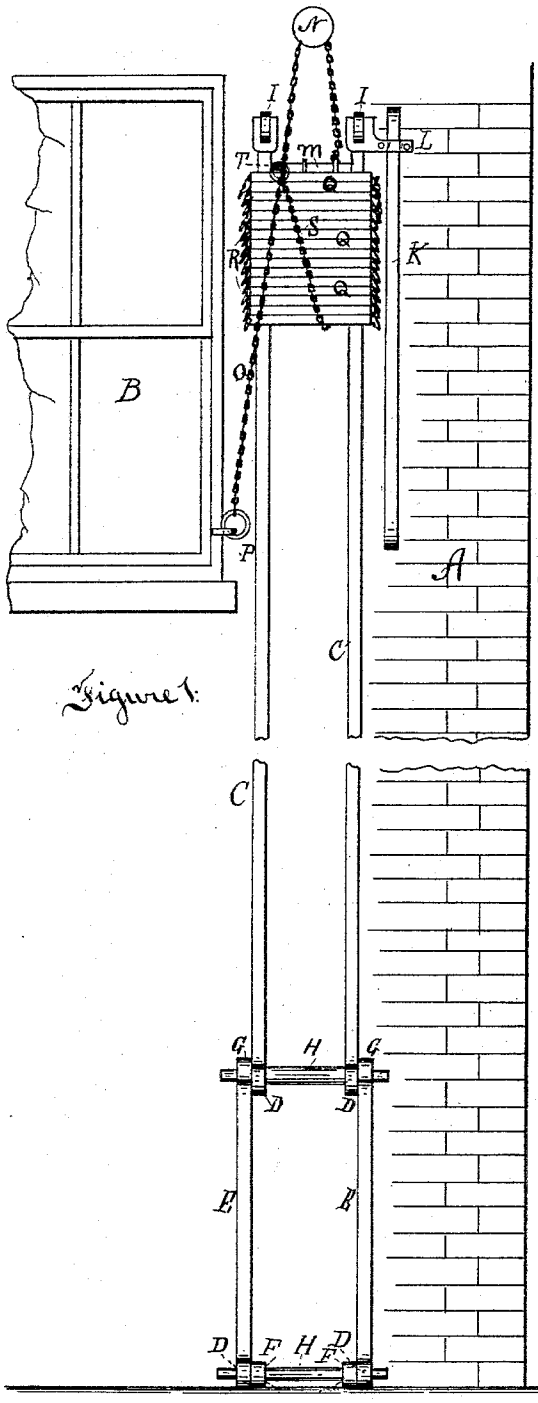



Figure 1.



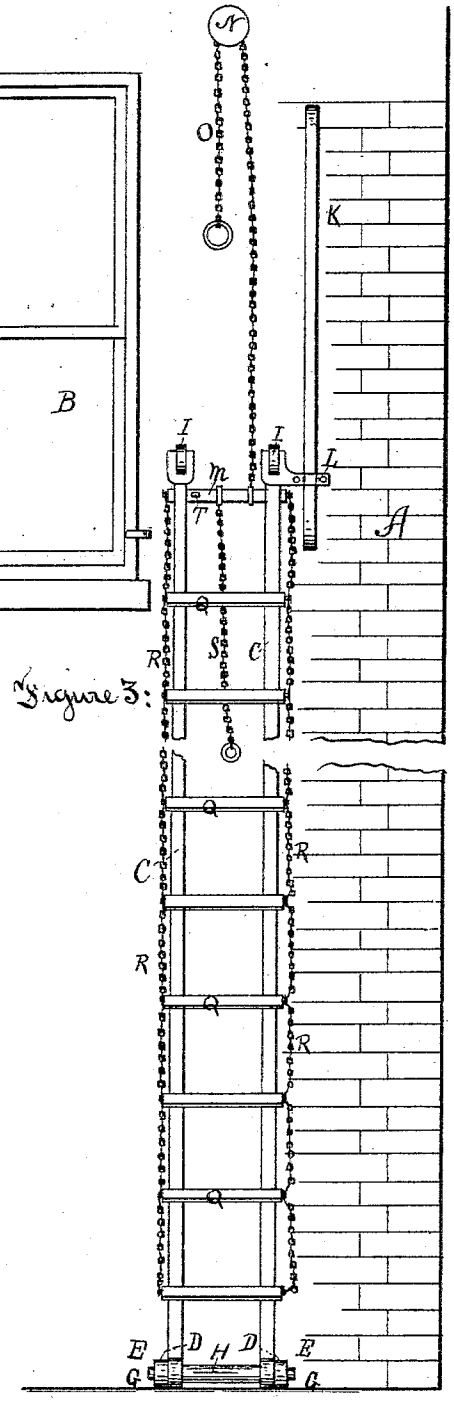




Figure 3.

Witnesses:
Joseph L. Levy
John A. Ives

Inventor:
Wm Rowland Pyne
by Phillips Abbott
his Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

# W. R. PYNE.

## FIRE ESCAPE.

No. 321,385. Patented June 30, 1885.

Figure 2:

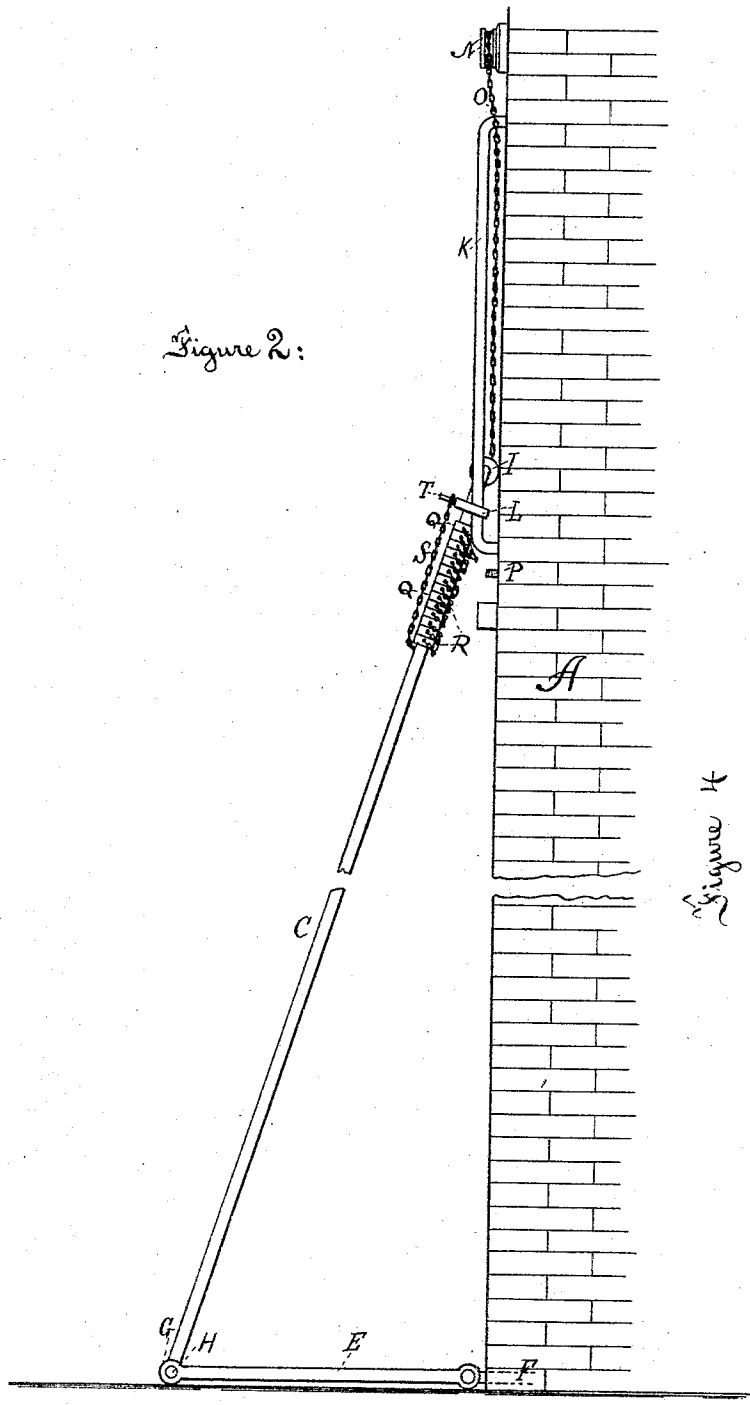
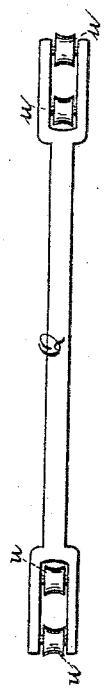



Figure 4




Witnesses:
Joseph L. Levy.
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# UNITED STATES PATENT OFFICE.

WILLIAM ROWLAND PYNE, OF PORT-OF-SPAIN, TRINIDAD, WEST INDIES.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 321,385, dated June 30, 1885.

Application filed May 11, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ROWLAND PYNE, a citizen of Great Britain, and a resident of Port-of-Spain, in the Island of Trinidad, West Indies, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

The peculiar characteristics of my invention are: first, the fire-escape is permanently attached to the sides of the building upon which it is used, and in such position that it is always ready for immediate use; second, it lies flat against the side of the building and is not obtrusively visible; third, when ready for use it is in fact a ladder securely held in position and having firmly secured rungs or steps at regular and convenient intervals; fourth, the device when ready for use is not vertical, but rests at an angle to the wall of the building, and is firmly secured both at the top and the bottom, thus giving confidence to timid people requiring its use; fifth, when not in use it does not afford means of access to the building.

In the drawings like letters indicate like parts in all the figures.

Figure 1 is a front elevation of the invention in its position when not in use. Fig. 2 is a side elevation of the invention in its first stage of preparation for use, the side stays having been lowered to the ground, but with the rungs still retained at the top thereof. Fig. 3 is a front elevation showing the apparatus in position and ready for use, the rungs having been released and allowed to descend to the foot of the side stays, thus completing the ladder-like structure. Fig. 4 shows the construction of the rungs when provided with wheels or rollers to prevent binding.

A is the side of the building; B, a window, (one only being shown in the drawings.)

C C are two continuous rods, preferably of metal, and, for the sake of stiffness, preferably of tubing. They may each be made in one continuous length or in more than one length jointed or united in any suitable manner, if preferred. They are sufficiently long to reach to the highest point desired, and constitute the sides of the ladder-like structure.

At the lower end of each side stay, C, is formed an eye, D, or equivalent device, by which hinge-connection can be made with the links E E. These links E E are also preferably made of metal, and are pivoted or hinged at one end in any desired manner near the base of the building, as at F, and they are provided on their outer ends with eyes G, corresponding to the eyes D on the lower ends of the side stays. The connection between the stays and the outer ends of the links may be by means of a rod passing through the eyes upon them, respectively, as shown at H, or in any other desired manner. I prefer the rod, however, for by its use the side stays may also be held at the suitable distance apart to allow the rungs to slide down them without binding.

At the upper ends of the side stays I prefer to attach rollers, (seen at I,) so that the walls of the house will not be injured by the scraping of the ends of the side stays against it when the apparatus is lowered for use; but these rollers may be omitted, if desired.

K is a runner or guide-bar fastened to the side of the building in any desired manner, upon which runs the bracket L, an eye on which loosely embraces the guide-bar K, and the other end of the bracket is attached to the upper ends of the side stays. A cross-bar, M, connects the two side stays at their upper ends at the proper distance apart.

There may be a runner or guide-bar upon both sides of the side stays, if desired, and a continuous bar with eyes in each end engaging with each of the guide-bars and attached to the upper ends of the side stays. The guide-bars K must be of sufficient length to allow the side stays to drop until they rest upon the ground—in other words, somewhat longer than the links E.

N is a pulley, ring, or equivalent device fastened to the wall above the upper ends of the side stays, over which passes a chain, O, one end of which is attached to the upper end of the ladder, preferably to the cross-bar M, and the other end is fastened to any suitable fastening device placed by the side of the window, so that it can be readily reached and the chain detached. I prefer to form a ring on the end of the chain and simply slip it over a horizontally-arranged hook, (seen at P,) which is bent toward the window, so that but little exertion will be required to disengage the ring from it. The length of the chain O is such that when it

is attached to the hook P the entire apparatus will be held up by it close to the wall, the links E being nearly vertical, but not so much so as to form dead-centers with the side stays, and the bracket L being at or near the top of the guide-rod.

Q Q, &c., are the rungs or steps. They are preferably made of metal, hollow or solid, as preferred, and are provided with an eye at each end, which encircle the side stays, respectively. The eyes are made so much larger than the side stays, and any joint therein, that when the rungs are released, as hereinafter set forth, they will drop down, sliding on the stays as far as the chains R will allow them, severally, to drop. These chains R are securely fastened at their upper ends to the upper part of the side stays, C, there being one chain by the side of each of the side stays, and they are substantially as long as the side stays, and at regular and suitable intervals the ends of the rungs Q are attached to the appropriate links in the chains in any suitable manner, so that they will be sustained vertically by the chains in their proper order to form the rungs or steps of the ladder-like structure. When the rungs are gathered at the top of the side stays, the chains R hang in loops from one to the other.

S is a small chain, which is fastened at one end to any suitable part of the apparatus—for instance, to the cross-bar M—and is of such length that when the rungs are all gathered together at the upper end of the side stays and close to each other this chain may be passed below the lowermost rung and thence upwardly and its end attached to any suitable holding device, such as the peg T, thus sustaining the rungs at the upper ends of the side stays when not in use.

The operation is as follows: When the device is not in use, the rungs are all gathered together at the upper ends of the side stays, and are held there by means of the chain S, as described, and the entire apparatus is then lifted vertically until the links E are straightened substantially into line with the side stays, C, against the side of the building, but not sufficiently to produce a dead-center, and the apparatus is held in this elevated position by means of the chain O and the hook P or their equivalents, as described.

When desired for use, the chain O is disengaged from its fastening P, and the apparatus is then lowered or allowed to drop until the lower ends of the side stays, C, rest upon the ground, the links E turning on the pivot at F and throwing the lower ends of the side stays outwardly at an angle to the sides of the building, and the bracket L sliding down upon the runner or guide-bar K. The small chain S is then unfastened from the hook T or equivalent device, and thereupon the rungs immediately slide down, running on the side stays, C, and arranging themselves in proper order and at proper distances to form the ladder-like structure, as before stated.

It will thus be seen that a safe and reliable means of escape—in other words, a ladder—is provided from any window or windows near which this structure is attached; and that it is firmly held in place both at the top and at the bottom by means of the bracket L and the links E.

If the building be more than two stories high, I prefer to so adjust the length of the links E that the bottom of the ladder will not be thrown so far out from the side of the building but that it can be reached easily from windows below the uppermost one.

When necessary, in order to prevent binding of the eyes on the ends of the rungs upon the side stays, I insert little wheels or rollers in the eyes at the ends of the rungs. (Shown at U U, &c., in Fig. 4.)

The entire apparatus may be protected from the elements in any desired manner, and it may be made of such dimensions and of such material as preferred. I prefer metal tubes, however, as being lighter for the same degree of strength and also because tubes are stiffer than solid rods.

I do not limit myself to the details of construction shown and described, since they may be considerably departed from and yet my invention be embodied.

Having described my invention, I claim—

1. The combination, in a fire-escape, of side stays, C, links E, guide-bar K, bracket L, chain O, pulley N, bar M, rungs Q, chains R, and chain S, substantially as and for the purposes set forth.

2. The combination, in a fire-escape, of side stays, C, links E, guide-rod K, bracket L, and chain O, substantially as and for the purposes set forth.

3. The combination, in a fire-escape, of side stays, C, links E, rungs Q, chain O, chains R, and chain S, substantially as and for the purposes set forth.

4. The combination, in a fire-escape, of side stays, C, links E, rungs Q, and chain R, substantially as and for the purposes set forth.

5. The combination, in a fire-escape, of two side stays, C, rungs Q, chains R, and chain O, substantially as and for the purposes set forth.

6. The combination, in a fire-escape, of two side stays, C, rungs Q, chains R, and chain S, substantially as and for the purposes set forth.

Signed at Port-of-Spain, in the Island of Trinidad, West Indies, this 9th day of April, A. D. 1885.

WILLIAM ROWLAND PYNE.

Witnesses:
CLARENCE ROSS,
MORGAN HALDING.