No. 611,734. Patented Oct. 4, 1898.

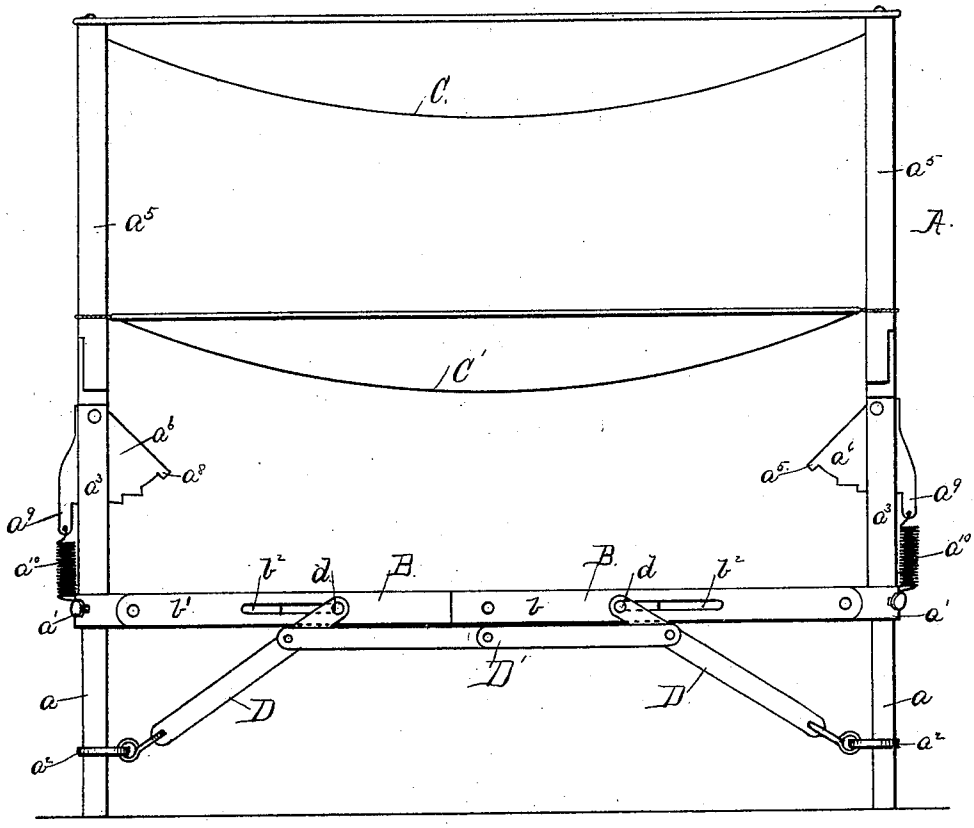
F. HAFELFINGER.

FIRE ESCAPE.

(Application filed Feb. 11, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESS

Wm. D. McIntosh.

L. M. Muller

INVENTOR

Frederick Hafelfinger

BY

Edgar Tate & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 611,734. Patented Oct. 4, 1898.

F. HAFELFINGER.

FIRE ESCAPE.

(Application filed Feb. 11, 1898.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

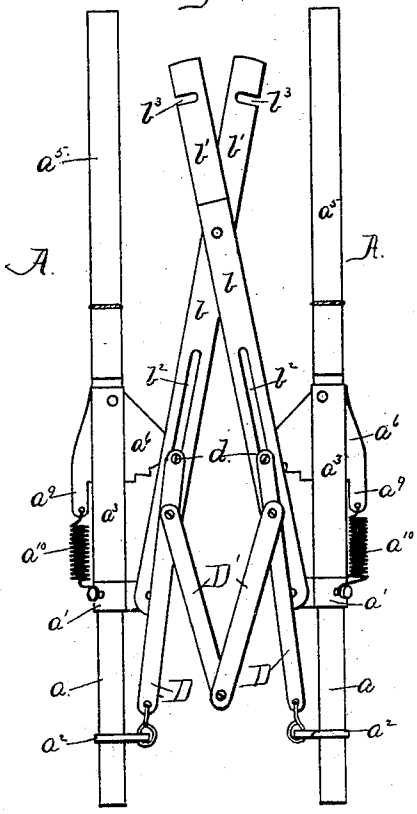


Fig. 3.

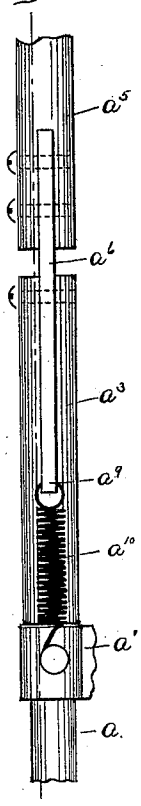


Fig. 4.

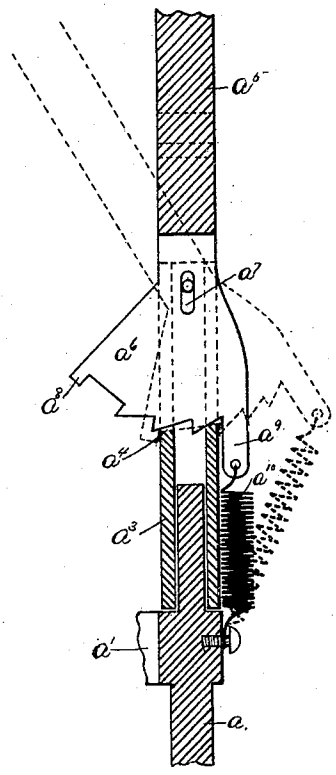
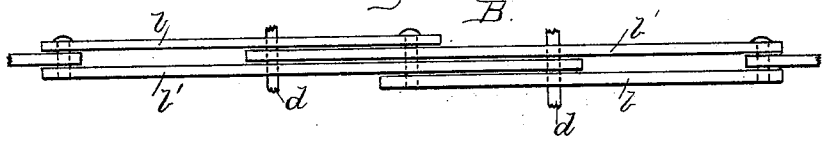


Fig. 5



WITNESS

Wm. L. McJennett.

L. M. Muller

INVENTOR

Frederick Hafelfinger

BY

Edgar Tate & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK HAFELFINGER, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 611,734, dated October 4, 1898.

Application filed February 11, 1898. Serial No. 669,931. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK HAFELFINGER, a citizen of the United States, residing at New York, (College Point,) in the county of Queens and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to fire-escapes and is intended for the use of fire departments, to be carried as a part of the apparatus for use at fires.

The object is to provide a portable fire-escape which may be quickly and easily set up and which can be compactly folded, so as to occupy little space, and which can be conveniently carried.

The invention consists of a portable fire-escape constructed substantially as hereinafter described, and defined in the claims.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same letters of reference in each of the views, and in which—

Figure 1 represents a side view of the improved portable fire-escape set up in position for use. Fig. 2 is a similar view showing the frame partly folded. Fig. 3 is an edge view of a portion of one of the supporting-standards. Fig. 4 is a vertical central section of Fig. 3, and Fig. 5 is a top view of a portion of the transverse brace.

Referring to the drawings, A represents the supporting-standards, of which there are preferably four, and which comprise a foot portion a, to the upper part of which are secured two horizontal lugs a', extending at right angles to each other. The lower part of the foot portion a is provided with a segmental plate a^2, which has a number of perforations therein. A tubular portion a^3 is loosely sleeved in the foot portion a and is provided with a transverse slot a^4, extending through the upper end thereof. A collapsible portion a^5 is provided at its lower end with a lock-plate a^6, which is arranged within the slot a^4 and is pivoted to the tubular portion a^3 by a pin passing through a vertical slot a^7. The lower edge of the lock-plate a^6 is provided with a series of ratchet-teeth, which are adapted to engage the edges of the slot a^4, whereby the collapsible portion a^5 may be permitted to yield inwardly under the influence of the weight of a falling body, as shown in Fig. 4. A suitable stop a^8 is arranged upon the inner edge of said lock-plate, so as to limit the movement of the collapsible portion a^5. A depending lug a^9 is arranged upon the outer edge of the lock-plate and is perforated to receive the end of a retracting-spring a^{10}, the other end of which is secured to the foot portion a. The upper end of the collapsible portion a^5 is provided with suitable means whereby the upper canopy C may be secured thereto.

Connected with the lugs a' are the transverse braces B, which are composed of the parallel links b b', each set of which is provided with a longitudinal slot b^2. The links b' are longer than the links b and overlap each other about midway between the supporting-standards A, and in the outer end of said links b' is arranged a vertical slot b^3. A pivot-pin passes through the links b b' at the extremities of the links b and serves to unite the said links. Suitable brace-rods D are secured at one end to the segmental plate a^2 and engage the slot b^2 at the other end by means of a connecting-rod d, which enters the slot b^3 of the links b' when the parts are set up in their operative position.

A tie-link D', which is preferably jointed in the center, unites the brace-rods D. It is to be understood that a set of braces and links are provided upon each of the four sides of the structure. An intermediate canopy C' may be suitably secured to the supporting-standards below the upper canopy C.

When used, the braces, supports, &c., assume the position illustrated in Fig. 1, and the structure is placed on the ground, so that a person jumping or falling from the upper portion of a building may strike upon the canopy C. The impact of the falling body causes the lock-plate a^6 to yield against the force of the springs a^{10}, and the upper portions of the supporting-standards yield to the pressure and thus diminish the shock of the fall and reduce the liability of serious injury. By reason of the arrangement of the ratchet-teeth on said lock-plate the upper portions

of the supporting-standards will be prevented from resuming their upright or normal position. By this means there is little or no rebound of a body striking the canopy from a great height. The movement of the collapsible portion is limited by the stop a^8. To restore the collapsible portions to their normal upright position it is only necessary to raise said portions until the ratchet-teeth of the lock-plate are disengaged from the edges of the tubular portion a^3, when the collapsible portions may be readily adjusted to their upright or vertical positions.

The second canopy C′ is merely auxiliary and serves as a safeguard in the event of the giving away of the upper canopy or of injury thereto. It is to be understood that the structure may be made of wood, iron rods, gas-pipes, or any other suitable material, and that the canopies may be of canvas, rubber, asbestos fabric, or other suitable material, as preferred.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An improved fire-escape of the class described, comprising a canopy, supporting-standards having collapsible upper portions adapted to turn or fold inwardly upon the lower portions, braces for said standards, and locking devices carried by said inwardly-folding or collapsible upper portions of the standards and operating to prevent the automatic return of said collapsible portions to normal upright position, substantially as and for the purpose set forth.

2. An improved fire-escape of the class described, comprising a canopy, supporting-standards embodying a foot portion and a tubular portion sleeved thereon and carrying an upper inwardly turning or folding collapsible portion, a locking-plate carried upon the lower end of the inwardly-folding upper portions and provided with ratchet-teeth engaging the tubular portion as said upper folding or collapsible portions operate, whereby the automatic return of the latter to normal upright position is prevented, substantially as and for the purpose set forth.

3. In a portable fire-escape, the combination with a canopy of supporting-standards comprising a foot portion, a tubular portion sleeved thereon having a vertical slot in the upper end thereof, a collapsible upper portion, a lock-plate secured to the lower end thereof, and provided with a vertical slot in its upper end which is adapted to be engaged by a pivot-pin whereby a vertical movement of the collapsible portion with respect to the tubular portion is permitted, ratchet-teeth upon the lower edge of the lock-plate adapted to engage with the edges of the said tubular portion, and a retracting-spring connecting the lock-plate with the foot portion, substantially as described.

4. In a portable fire-escape, the combination with a canopy of supporting-standards, connecting-braces pivoted at their inner ends to said standards and near their outer ends to each other, comprising a long and a short link arranged parallel to each other and provided with a longitudinal slot, the long links having a vertical slot in the outer ends and overlapping each other, brace-rods pivoted at the lower end to the standards and at the upper end in the said longitudinal slot, the upper pivot-pin of one brace-rod adapted to engage the vertical slot of the opposite link, and the links pivoted to each other and to the brace-rods, substantially as described.

5. An improved fire-escape of the class described, comprising supporting-standards having an inwardly folding or turning collapsible upper portion, said upper portions being adapted to automatically operate in their folding movement by impact upon the canopy connecting the same, a canopy secured to and mounted between the upper ends of said folding or collapsible portions of the standards, and a lower auxiliary canopy secured to and connecting said standards beneath the top canopy, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 8th day of February, 1898.

FREDERICK HAFELFINGER.

Witnesses:
WILH. KAUFMANN,
FRITZ KAUFMANN.