L. M. CHIPLEY.

Fire-Escapes.

No. 145,844. Patented Dec. 23, 1873.

Fig. 2.

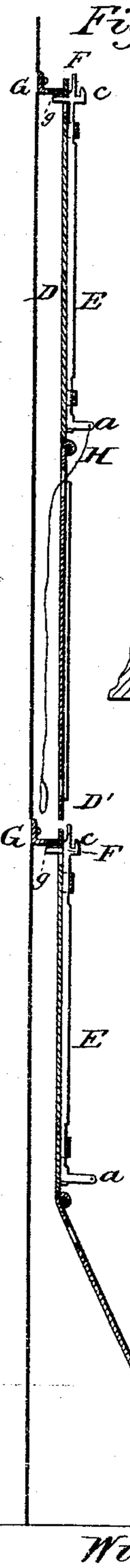

Fig. 3.

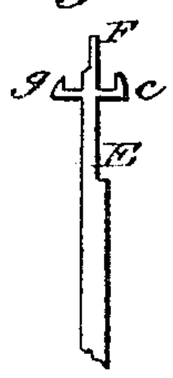

Fig. 4.

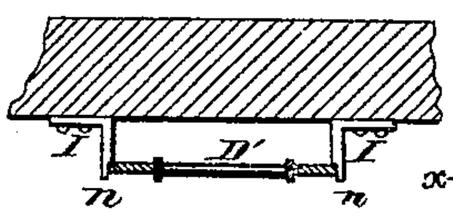

Fig. 1.

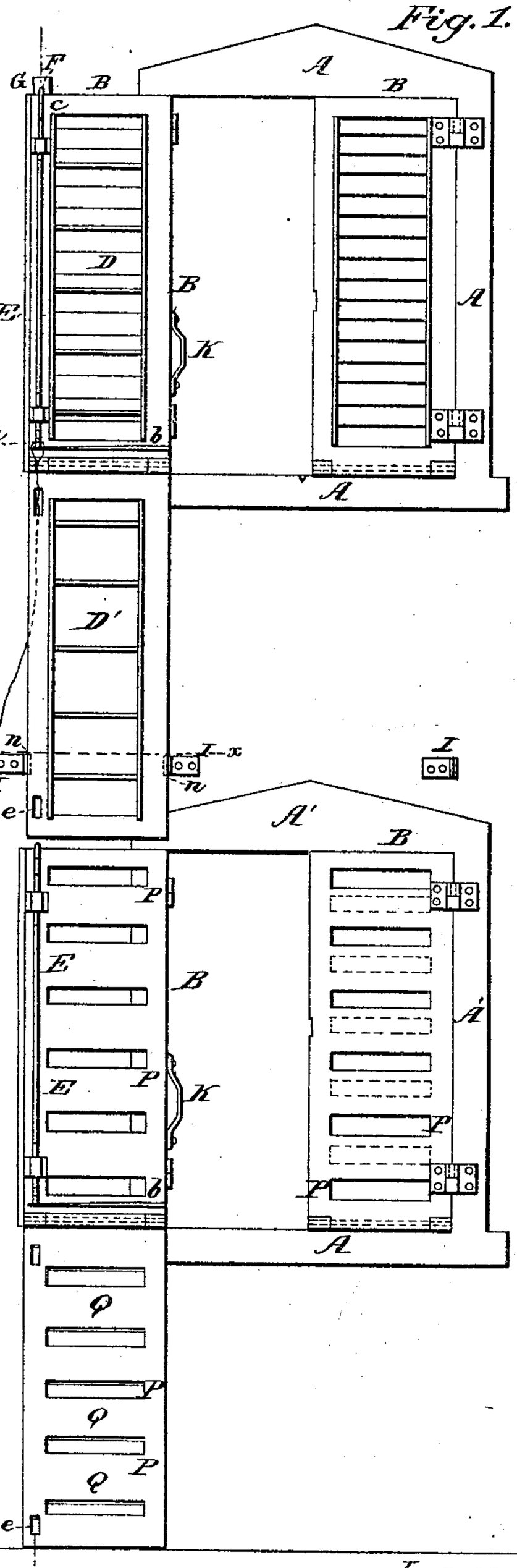

Fig 5

Witnesses.
Wm Howard
Geo. C. Wilson

Inventor
Lucien M. Chipley
By
Cox & Cox Attys.

UNITED STATES PATENT OFFICE.

LUCIEN M. CHIPLEY, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. 145,814, dated December 23, 1873; application filed November 25, 1873.

To all whom it may concern:

Be it known that I, LUCIEN M. CHIPLEY, of St. Louis, Missouri, have made and invented a new and useful Improvement in Fire-Escapes, of which the following is a specification:

The invention relates to fire-escapes; and consists in constructing a window-shutter in the form of a ladder, which is jointed at its lower end and arranged so that when folded a shutter of convenient construction is produced, and when opened the lower fold, hanging down, is held in place by means of steps attached to the wall of the house, and catches upon the shutter, thus forming a secure ladder; or the parts may be arranged to slide, the shutter being constructed without the joint, and the ladder formed by drawing one of the sections down between the steps. Probably the former construction will usually be found to be the more effective, as it is less likely to be rendered inoperative by causes that produce expansion and contraction. When necessary, the lower fold or section is arranged with relation to the upper part of a shutter of like construction below and in line with it, so that the lowest round of the ladder, when opened and in place, will be directly above the top of the shutter below, whereby a continuous ladder, extending from the highest window to the ground, may be formed. A wire or fire-proof cord is attached to and controls the catches that hold the parts of the upper windows, the lower end of which depends in proximity to the top of the window below. The cord being drawn, the catches are released when the shutters are drawn open, and the lower fold or section falls or slides into place of its own weight, resting upon steps provided to prevent its coming in contact with the wall. The ladder may thus be formed from the ground upward.

The entire device I prefer to construct of metal, and the window-casings may also be metallic, to render the whole as nearly fire-proof as practicable. The details of construction and other matters will more fully appear hereinafter.

The object of the invention is to provide a fire-escape of convenient form, which, while always ready for use and not liable to get out of order, can be easily and rapidly operated by parties within the building as well as by those outside, which is peculiarly adapted to resist the action of fire, and at the same time eminently a safe and ready means of ingress and egress to and from the building to which it is applied.

Figure 1 is a front elevation of a device embodying the elements of the invention in its operative condition as applied to windows in the wall of a building. Fig. 2 is a side or edge view of same. Fig. 3 is a side view of the catch F on the rod E. Fig. 4 is a section through the line *x x*, showing also a portion of the wall and the shoulders *n* on the steps I. Fig. 5 is a side view of the step L.

A A′ are window-casings of ordinary construction, preferably of metal, which, as is usual, are in line one above the other. The frames of the shutters B B′ are hinged to the casings A A′ and swing horizontally like ordinary outside shutters. They consist of a folding-ladder, composed of two parts, D D′, hinged or jointed, at their lower ends, to swing vertically. The fold or section D′ is conformed in size to the fold or section D which constitutes the frame of the shutter, or which may be attached thereto. To the fold or section D is attached, in any suitable manner, the sliding rod E, the base of which is in the form of an elbow, which projects inward, and is provided with an eye, *a*, and rests against the spring *b*. The upper extremity of the rod or slide E is provided with a double catch, F, one end of which, *c*, is notched, and which, projecting inward, has its upper edge beveled, and is used to hold the fold D′ in place, when the apparatus is not in use, a slot, *e*, being cut in the fold D′ to permit it to fit over the end *c* of the catch F, being held securely by the notch therein. The other end of the catch F projects outward through a slot in the shutter D, and is carried upward and reduced to a point, *g*, which fits an aperture in the staple G that is attached to the wall in such position that, when the shutter is open, the point *g* will co-operate with the aperture in the staple G and hold the shutter, as shown. The upper extremity of the rod E projects above the upper edge of the shutter, and is used to hold the shutter when closed, an aperture of suitable form and dimensions being cut

in the upper side of the casing of the window to receive it. In the eye *a* is fastened a wire or metallic cord, H, which depends through the lower slot in the fold D′, so that its end hangs in proximity to the top of the window below, a notch, *h*, being cut in the window-sill to permit the cord to be operated when the shutters are closed. Directly below the shutters, when open, and in line therewith, are the steps I, which are firmly secured to the wall of the building in such positions that, when the fold D′ is let down, it will fit snugly within them, and at the same time be held away from the wall, and so that it will not swing laterally, to more fully effect which the part D′ may be provided with notches *n*, in which the steps I will also fit. Upon either side of the window-casing handles K are appropriately placed to assist in ingress and egress.

The apparatus may be applied to the shutters upon one or both sides of the windows; and it may be applied, in part, to one side, as in the present instance, the sliding rod E and its incidents being used only upon the closing shutters. When so applied steps L should be attached to the wall near the middle of the other shutters, when opened, to prevent their coming in contact with the side of the building.

The invention is designed especially to be applied to windows that are in line, one above the other, and each window is provided with the parts above described, arranged with relation to each other. The section or fold D′, therefore, should be of sufficient length to nearly span the distance between the lower edge of its shutter, and the upper edge of the shutter below, so that when it is let down a continuous ladder from window to window will be formed.

If preferred, the fold or part D′ may be arranged so that it will slide into place or turn upon a pivot, the catches and other parts being conformed accordingly.

A desirable form of shutter I construct of two pieces, preferably sheets of metal, in which are cut the horizontal slots P, and which are joined to move vertically, and so arranged that, when the lower piece is carried up and secured against the other piece, the solid parts Q of the former will cover the slots P in the latter, and, when let down, form a ladder, as is particularly shown at Fig. 2.

In the construction of the device, the sections D D′ may be made in any convenient form without sacrificing the objects of the invention. Slats may be attached, and the shutter, as a whole, so arranged as to fully effect all its offices, as well as those more particularly enumerated and described as pertaining to the fire-escape herein mentioned.

It is obvious that the upper and lower shutters on the same side, when in their open position, may be connected by a ladder of appropriate length, and secured to the wall vertically between said shutters. In the event of the employment of this expedient it is necessary to employ only the folds of the shutters, which are directly hinged to the wall; and it is also to be observed that divers means of attachment, arrangement, and construction, other than those herein mentioned, may be successfully employed.

The operation of the device will be readily understood. The shutters being closed, and it being desired by parties outside the building to prepare the apparatus for use, the cord H is drawn sufficiently to disengage the end of the slide E, and the shutter is drawn open. Greater power is then applied to the cord, which disengages the catch which supports the part D′, when it falls into place between the steps I. This operation is continued from window to window, at pleasure. To prepare it for use from inside the building the operation is the same, except that the shutters are forced open by pressing the end *g* of the catch F from above, and the ladder formed downward.

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

1. The combination of a series of folding or sliding ladders attached to window-shutters placed one above the other, substantially as shown.

2. The combination of the fold D, staple G, and catch *g*, substantially as shown and described.

3. The combination of the folds D and D′ and steps I, substantially as shown and described.

4. The combination of the cord H, rod E, end *c* of catch F, and fold D, substantially as shown and described.

5. The combination of the cord H, rod E, catch F with the staple G and fold D′, substantially as shown and described.

6. The combination of the cord H, rod E, point *g* of the catch F and staple G, substantially as shown and described.

7. The steps I, for the uses and purposes substantially as shown and described.

8. The steps L, for the uses and purposes substantially as shown and described.

In testimony that I claim the foregoing improvement in fire-escapes, as above described, I have hereunto set my hand and seal this 18th day of November, 1873.

LUCIEN M. CHIPLEY. [L. S.]

Witnesses:
H. L. WARREN,
ALEX. DAVIS.