No. 694,771. Patented Mar. 4, 1902.

W. E. MONROE.

TELESCOPIC FIRE ESCAPE AND CONVERTIBLE SCAFFOLDING.

(Application filed June 8, 1901.)

(No Model.) 2 Sheets—Sheet 1.

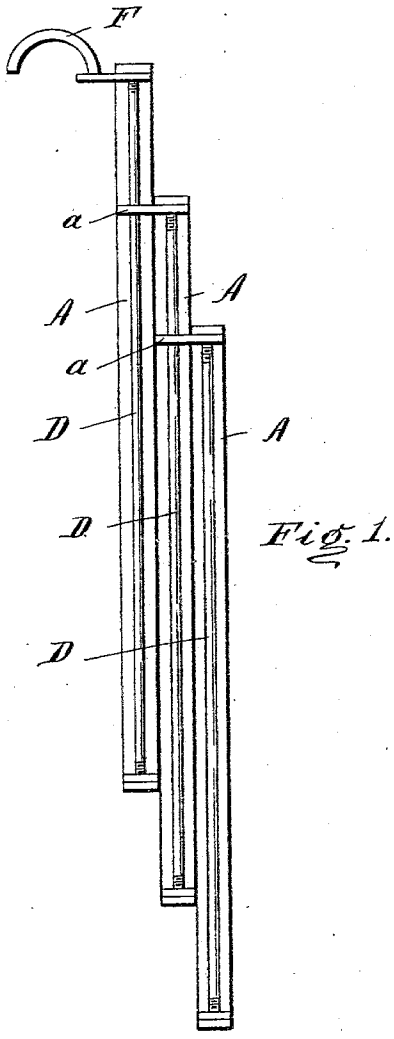


Fig. 1.

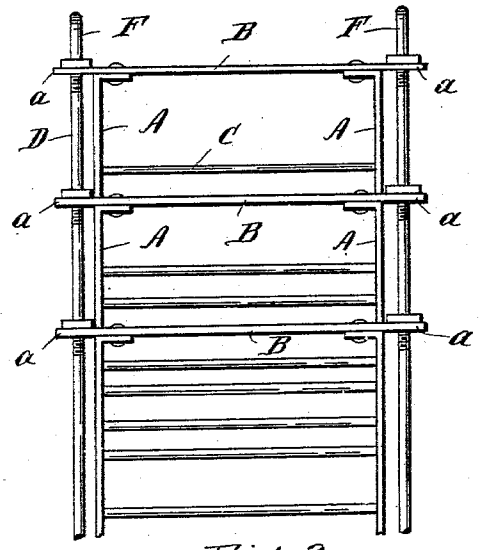


Fig. 2.

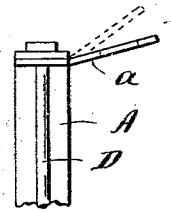


Fig. 4.

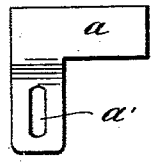


Fig. 5.

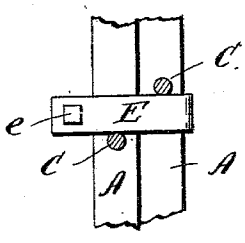


Fig. 7.

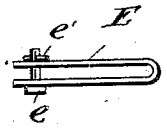


Fig. 6.

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No. 694,771. Patented Mar. 4, 1902.

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TELESCOPIC FIRE ESCAPE AND CONVERTIBLE SCAFFOLDING.

(Application filed June 8, 1901.)

(No Model.) 2 Sheets—Sheet 2.

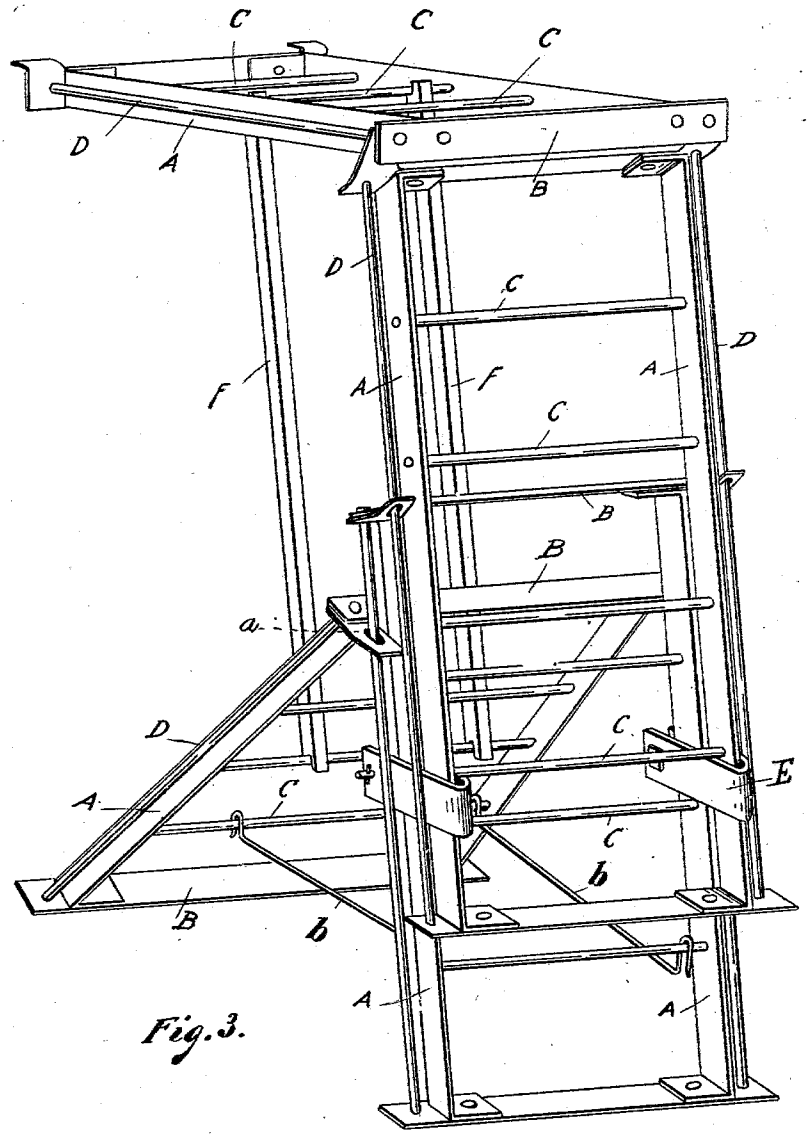


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM E. MONROE, OF NEWPORT, KENTUCKY, ASSIGNOR OF ONE-THIRD TO CHRISTOPHER WHITEHEAD, OF NEWPORT, KENTUCKY.

TELESCOPIC FIRE-ESCAPE AND CONVERTIBLE SCAFFOLDING.

SPECIFICATION forming part of Letters Patent No. 694,771, dated March 4, 1902.

Application filed June 8, 1901. Serial No. 63,774. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. MONROE, a citizen of the United States, and a resident of Newport, in the county of Campbell and State of Kentucky, have invented a certain new and useful Improvement in Telescopic Fire-Escapes and Convertible Scaffolding, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention consists in the production of a fire-escape or ladder which may be telescoped or, more properly, whose sections are so constructed and united that they may be "piled up" or drawn the one on the other; and it has also to do with such modifications thereof that the same may be readily converted into scaffolding of varying style.

The object of my invention is to produce a fire-escape or ladder which shall be compact and at the same time strong in construction and of easy manipulation, its simplicity making it cheap to manufacture and preventing the possibility of its becoming out of order.

In the drawings, Figure 1 is a side elevation of my improved ladder or fire-escape partly piled up or telescoped. Fig. 2 is a partial front view of the same to more clearly illustrate the construction of the horizontal end pieces of the sections and a method of securing the vertical sides or uprights thereto. Fig. 3 is a perspective view of the sectional ladder "set up" into one of the many styles of scaffolding. Fig. 4 is a detail view of the upper end of one of the sides or uprights and the lug or link. Fig. 5 is a plan view of a connecting lug or link. Fig. 6 illustrates a form of lock to hold the various sections in the desired position, and Fig. 7 is a detail view showing the mode or method of applying this lock to the sides of the adjacent sections.

Like letters of reference indicate identical parts in the various figures.

For the purpose of strength and at the same time permit a neat appearance I prefer to construct my sectional ladder or telescopic fire-escape of metal having the required strength, though of course it may be made of any suitable material.

A A are the vertical sides or uprights, of a length corresponding with the length it is desired to have the various sections of the fire-escape. The ends of the sides A A are preferably bent at an angle to permit the cross-piece B to be secured thereto, thus securing the sides in place. The cross-pieces may be riveted or otherwise secured to said angled ends of the uprights.

C C are the rounds, which may be secured to the vertical side pieces A A in any desired manner.

Riveted or otherwise secured between the angled ends and the cross-pieces B are the lugs or links *a*, as illustrated in Fig. 4, which for the purpose of providing greater bearing or riveting surface and prevent their vibration I prefer to construct as shown in Fig. 5, the one member or leg of which is secured to the cross-piece B and the upright A, while the other is provided with a hole or slot *a'*. These lugs or links are so secured that the member or leg having the hole or slot *a'* extends to the front or rear of the section of the ladder and into the path of the adjacent section when the same is being piled up or telescoped, as shown in Figs. 1 and 3 of the drawings.

Extending parallel, and preferably of an equal length with the sides A A, are rods D D, which pass through holes in the cross-pieces B, and are held in place in any convenient manner. These rods thus also assist to brace the cross-pieces, and they may be provided with screw-threads at their ends, so that nuts may be screwed onto the ends extending through the holes in the cross-pieces B, and thus be held in place. The member of the lug or links *a* secured to the adjacent section of the ladder extends into the path of these rods D D, which are passed through the hole *a'* of the lugs or links *a*, so that the various sections of the ladder or scaffolding will have slidable connection with its adjacent section, as can clearly be seen in Figs. 1 and 3.

When it is intended to use the device for scaffolding, I prefer to provide the lugs or links *a* with larger or oblong slots and in such case also to have the protruding member slightly at an angle to the horizontal plane of the link *a*, as clearly shown in Figs. 3 and 4. It will thus be seen that this permits the

various sections to be placed at almost any angle to the other sections to meet the requirements of scaffolding. When using it for scaffolding and the same is set up in any of the many ways as suggested is possible in Fig. 3, it of course is necessary to provide braces *b b*, Fig. 3, which may be made in various ways, whereby the two lower sections are prevented from spreading. In order to hold the sections at the proper point vertically and to lock them in place, I prefer to provide the hasps E, (see Figs. 3, 6, and 7,) which fit over the adjacent side supports A of the two sections and between the rounds C C, as seen in Fig. 3 and Fig. 7. The hasps are held or locked in place in any convenient manner, preferably by a bolt *e*, having a cotter-pin *e'* passing through its end to prevent its withdrawal accidentally.

Of course when using my construction for scaffolding and the upper or topmost section is "run out" horizontally, as seen in Fig. 3, it is desirable to use additional supports or braces *f*, which may either be placed diagonally intermediate a rung on the horizontally-extending section and a rung on the vertical section, or they may have contact with the sides of the two sections, and thus relieve the strain on the links *a* of the uppermost vertically-extending section.

When it is intended to employ my improved construction for use as a fire-escape, I provide means whereby it may be secured or hooked onto a structure or building, and for that purpose have illustrated in Fig. 1 the ladder provided with hooks F. These may be readily hooked onto the eaves of a building or the sill of a window and the various sections of the ladder permitted to drop down their full limit, forming a continuous escape or ladder.

It will thus be readily understood that a ladder or fire-escape of considerable length may be made, which may be "telescoped" into very compact form and easily transported.

When employing it as a fire-escape, the various sections may be held secure near the top of the building by a rope or other mechanism and when required the rope or mechanism released, permitting the lower and intermediate sections to drop and extend to the bottom floor.

As I have stated, the rods D may be secured in place by nuts on their screw-headed ends. When thus constructed, they can be readily removed and replaced in case of repair or when it is desired to release a section from the remaining sections. Instead of the lugs, as hereinbefore described and illustrated in the drawings, they may be differently constructed. For instance, they might be more in the nature of a ring securely fastened to the sides or cross-pieces of the sections, or instead of making the lugs separately and riveting or otherwise securing them to the cross-pieces they may be made integral with the cross-pieces.

By constructing my improved device of metal, wrought-iron, or the like it is possible to obtain strength, lightness, and compactness and at the same time be inexpensive to manufacture; but, of course, any material may be employed and the detail of construction may be somewhat varied without departing from my invention, which, having thus fully described, I wish to secure by Letters Patent.

I claim—

1. A telescopic fire-escape and convertible scaffolding comprising two or more ladder-sections, having side, top and bottom cross-pieces, lugs or links secured to and extending at an angle to said cross-pieces, and rods parallel with the sides or uprights and secured to the cross-pieces, the rods of one section passing through the links secured to the adjacent section, whereby the various sections have slidable connection with each other, substantially in the manner and for the purpose described.

2. An extension-ladder or convertible scaffolding comprising two or more sections, each having side, top and bottom cross-pieces, rods extending from the top to the bottom cross-pieces, and secured thereto adjacent the side supports or uprights, and means secured to each ladder-section and having slidable connection with the rods of the adjacent section, substantially in the manner and for the purpose specified.

3. Convertible scaffolding comprising two or more ladder-sections having sides or uprights, top and bottom cross-pieces all secured together, lugs provided with slots and secured to each top cross-piece, rods extending from the top to the bottom cross-pieces and secured thereto and adjacent the uprights, said rods passing through the slots of the lugs on the succeeding or adjacent section, and means for locking the adjusted ladder-sections in the desired position, substantially as shown and for the purpose described.

4. Convertible scaffolding having two or more ladder-sections, each comprising sides, top, and bottom pieces secured together and rounds, lugs provided with slots secured to each top cross-piece and at a horizontal angle thereto, rods extending from the top to the bottom cross-pieces and secured thereto and passing through said slots, whereby the sections have slidable connections with each other, means for locking the sections together in their vertical relation, and braces for retaining the sections in their horizontal relation with each other, substantially as shown and for the purpose specified.

5. A telescopic ladder comprising two or more sections having sides, top and bottom pieces, secured together, the top cross-pieces provided with lugs extending out horizontally at an angle thereto, lugs having slots,

and rods extending through said slots and secured to the top and bottom cross-pieces, whereby the various sections have slidable connection with each other, substantially in the manner and for the purpose specified.

6. A sectional metallic ladder or convertible scaffolding consisting of two or more sections, each comprising sides, top, and bottom cross-pieces, and rounds, the whole being secured together, the cross-pieces extending beyond the sides or uprights and having lugs at their ends at a horizontal angle thereto, said lugs being provided with holes or slots, rods intermediate the top and bottom cross-pieces and passing through the holes or slots of the lugs of the succeeding section and secured to the respective cross-pieces, and means for securing the various ladder-sections in their adjusted positions, substantially as described and for the purpose set forth.

7. In convertible scaffolding comprising two or more ladder-sections each consisting of sides, top, and bottom cross-pieces and rounds, the whole secured together, lugs secured intermediate the side and cross pieces, and provided with holes or slots, the extending ends of said lugs being at an angle or incline to the horizontal plane of the cross-pieces, rods intermediate the top and bottom cross-pieces and passing through the holes or slots of the lugs of the succeeding sections and removably secured to the respective cross-pieces, hasps for locking the sections in their adjusted vertical position with each other, and braces or supports for maintaining the sections in the horizontal relation with each other, substantially as shown and in the manner for the purpose described.

WILLIAM E. MONROE.

Witnesses:
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EDWARD STAAT.