(No Model.) 3 Sheets—Sheet 1.

# A. W. LOZIER.

## FIRE ESCAPE.

No. 295,570. Patented Mar. 25, 1884.

Fig 1

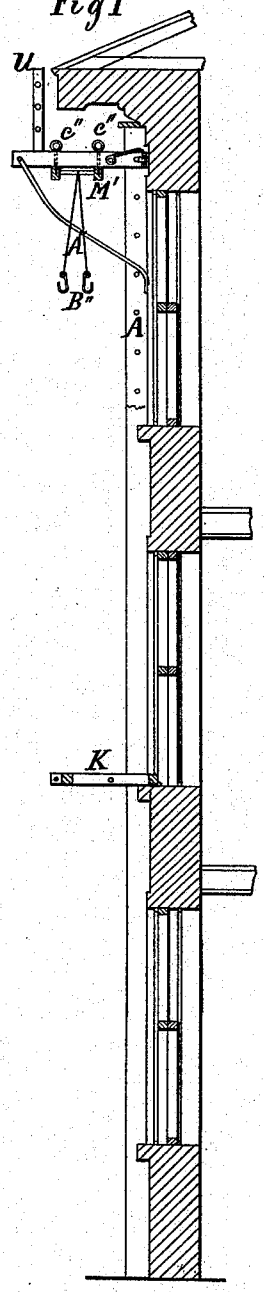
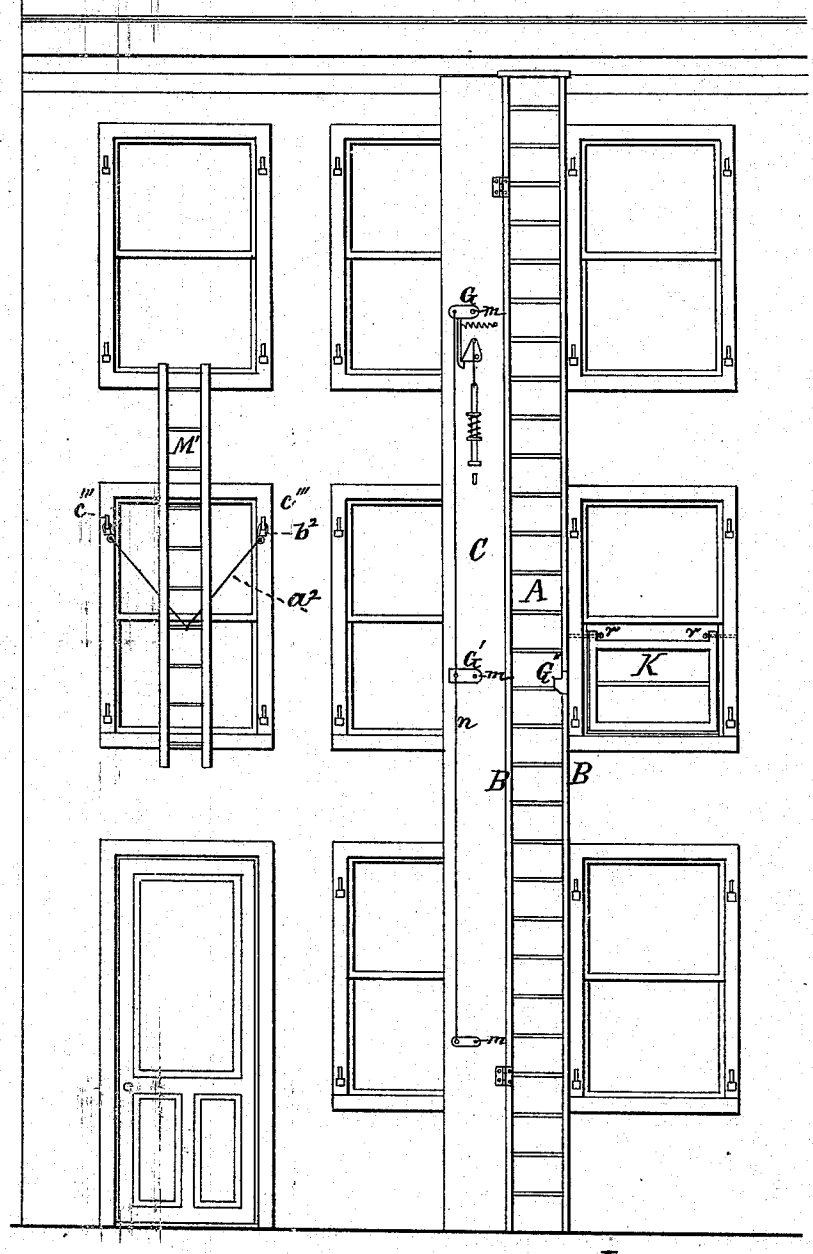



Fig 2




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(No Model.) 3 Sheets—Sheet 2.

# A. W. LOZIER.

## FIRE ESCAPE.

No. 295,570. Patented Mar. 25, 1884.

Fig 3

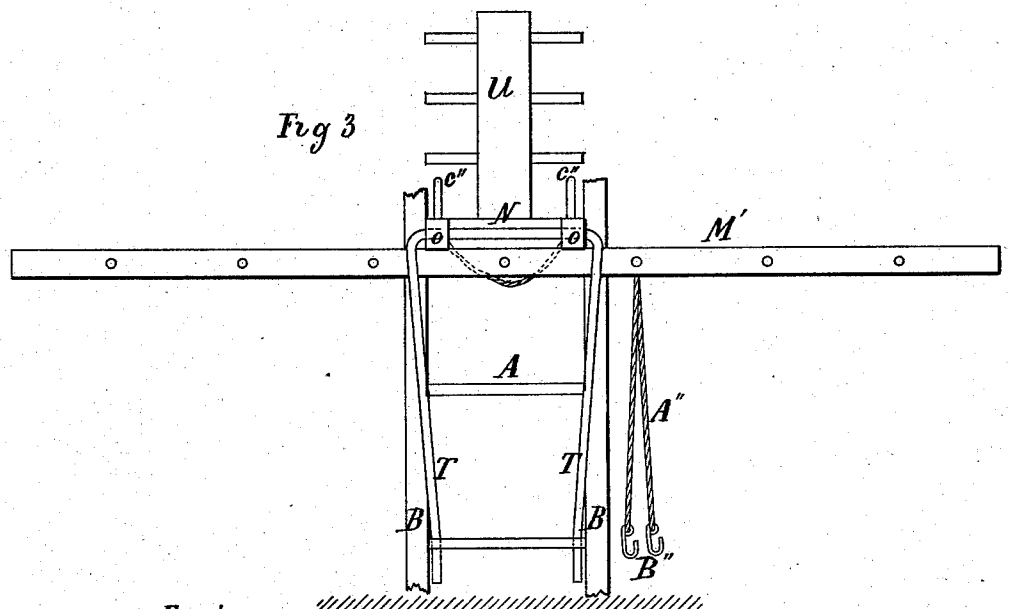



Fig 4.

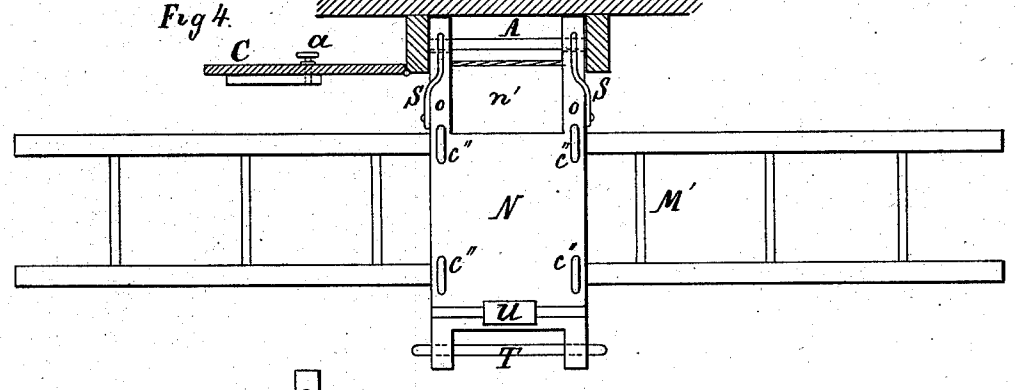
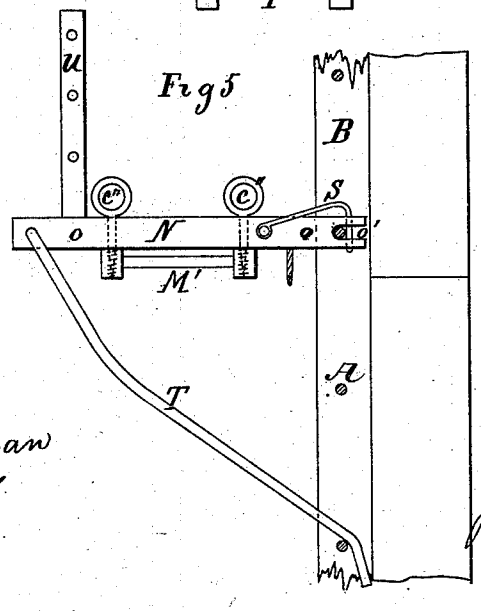



Fig 5




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(No Model.) 3 Sheets—Sheet 3.

# A. W. LOZIER.

## FIRE ESCAPE.

No. 295,570. Patented Mar. 25, 1884.

Fig 6

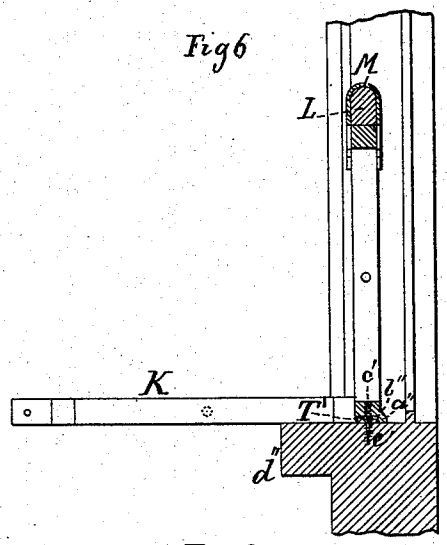



Fig 7

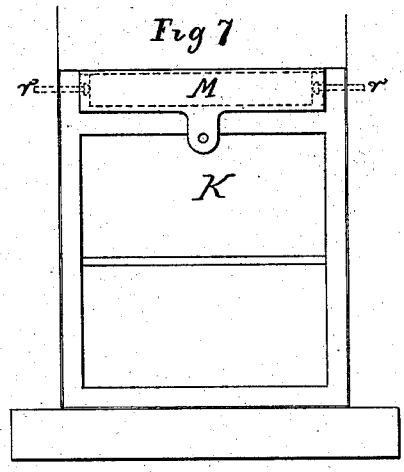



Fig 8

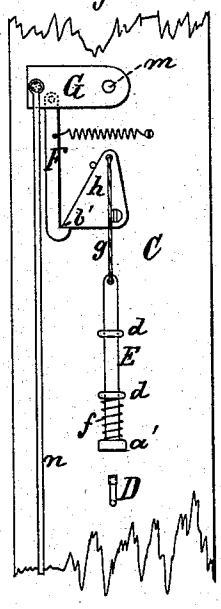



Fig 9

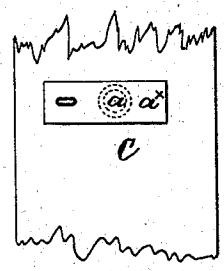
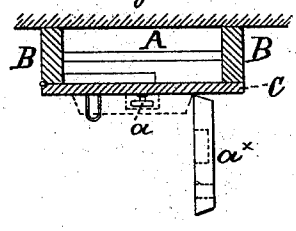



Fig 10




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# UNITED STATES PATENT OFFICE.

ABRAHAM W. LOZIER, OF NEW YORK, N. Y.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 295,570, dated March 25, 1884.

Application filed February 8, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAHAM W. LOZIER, of the city, county, and State of New York, have invented certain Improvements in Fire-Escape Apparatus, of which the following is a specification.

The object of this invention is to provide a fire-escape apparatus permanently combined with the front of the building in such manner as not only to insure effective means of escape to the occupants in the event of fire, but also to be free from the objection incident to the use of the ordinary fixed fire-escape ladder—that it affords a means by which burglars and other evil-disposed persons may gain access to the interior of the building.

A further object of the invention is to provide for alarming the inmates of the building in case the apparatus is tampered with, or alarming the nighborhood in case the apparatus is suitably operated by the occupants of the building in the event of fire.

A further object of the invention is to enable escape to be had from the various windows of the front of a building to a single fixed ladder, and thence to the ground.

A further object of the invention is to facilitate the work of firemen in reaching and extinguishing the fire, and also to enable the firemen or others to gain ready and speedy access to the roof of the building.

The invention comprises certain novel combinations of parts, whereby said objects are effectually secured.

Figure 1 is a vertical sectional view, in a plane at right angles to the front of the building, of an apparatus made according to my invention. Fig. 2 is a front view of the same. Fig. 3 is a front view, on a larger scale, of one portion of said apparatus. Fig. 4 is a plan view of the parts represented in Fig. 3, and Fig. 5 is a transverse sectional view of the same parts. Figs. 6, 7, 8, 9, and 10 are detail views of another portion of the apparatus.

A is a stationary ladder, which is affixed to the front of the building, and extends from the ground to the roof. This ladder is inclosed between two side plates, B, one of which has hinged to it a vertical door, C. When preferred, the several sections of which this long door is formed may be connected by plates and bolts, thereby forming the door in its entirety. The lower portion of the door may be furnished with a lock, *a*, formed of the lever-knob of the signaling devices, as hereinafter described. This is covered by a hasp, $a^{\times}$, which is secured by a padlock in such manner as to prevent access to the lock *a* from the ground, unless such hasp is first removed, and at the same time permit the lock *a* to be operated from the building, as hereinafter set forth. The key or keys to the padlock being left in competent hands, the door may be opened from the street when legitimate necessity exists therefor. The upper knobs, also indicated by reference-letter *a*, may be actuated by occupants of the building from the windows of the latter.

The door is provided at its inner side with an alarm apparatus, which, as shown in the drawings, is constructed and operated as follows:

A fixed nipple, D, is arranged to receive a percussion-cap or equivalent detonating device. In line with this nipple, and arranged to slide in suitable guides, *d*, is a percussion bolt or striker, E, the head *a'* of which is arranged to act upon the nipple, and which is forced toward the same by a spiral or other suitable spring, *f*. The bolt or striker E is connected by a cord, *g*, with the upper end or arm of a triangular block or dog, *h*, the shoulder *b'* of which is constructed and arranged to catch upon a hook, F, which depends from a lever, G, which is attached to the spindle *m* of the knob or handle *a* on the outside of the door, the spindle *m* passing through and being supported in a suitable socket or bearing provided to the door.

The parts are so constructed, proportioned, and arranged that when the dog *h* is turned vertical, with its shoulder *b'* caught upon the hook F, the bolt E will be withdrawn from the nipple, and sustained against the pressure of the spring *f* by the cord *g*, the latter being strained taut, with its upper end carried somewhat past the dead-point or axial line of the bolt E. When the knob *a* is turned in the requisite direction, the hook F lifts the shoulder *b'* of the dog *h*, and thereby throws the dog backward, swinging the cord away from the axial line of the bolt E, and permitting

the spring *f* to suddenly force the bolt against the cap or detonator on the nipple, to sound an alarm.

The knob *a* is designed to be of easy access from a window of one story of the building. In order to open the entire door and to render the alarm apparatus available from a window of another story, a rod, *n*, is extended from the lever G to a similar lever, G′, which is fixed upon the inner end of the spindle of the knob or handle *a*, so that a movement communicated from the latter to the lever G′ will communicate a similar movement to the lever G, to actuate the alarm and open the door from top to bottom. Any desired number of additional levers, knobs, &c., may be employed, according to the number of stories from which access is desired to be had to the apparatus. By this means the door may be opened and the alarm of fire be readily sounded from any story.

The end of the lever G′ is designed to fit into a suitable fixed catch, G″, after the manner of a latch, and thereby retain the door in a closed position. The opening of the door, involving in such case the lifting of the lever, sounds the alarm, so that any attempt at surreptitious use of the apparatus is at once detected. Where the door is to be swung open from the ground, one of the knobs, with its connected lever and rod *n*, should be placed in convenient proximity to the ground or sidewalk.

In order to facilitate access to the parts aforesaid from adjacent windows, the latter are provided with swinging platforms K, which are hinged at their lower ends to the window-sills along the plane of the upper sash, and which are of skeleton or frame-like form. The hinges T′, which connect these platforms to the window-sashes, are each in two leaves, *a″ b″*, with their fastening-screws *c′* so arranged that when the platform is placed vertically the said screws are covered, and thereby placed boyond the reach of tampering or removal. When the platform is thrown downward and outward to a horizontal position, it rests across and upon the lintel *d″*, which supports the same in position. The platform, when in a vertical position, is held in place by pins *r*, which pass through holes formed in the ends of the side pieces of the platform, and project into corresponding holes formed coincidently in the window-frames in the run of the upper sash. In order that these pins may not be withdrawn except when required for projecting the platform horizontally from the window, there is placed upon the end of the platform and between the said pins a block, L, and over this is placed a saddle, M, of metal or other suitable material, which projects downward astride of said block and astride of said end of the platform. This saddle is secured to the platform by a suitable chain and padlock, so that the platform cannot be thrown down by parties from the outside, but may be readily projected from the windows by occupants of the building by first unlocking the saddle and then removing the same, together with the block L and pins *r*.

In order that the vertical ladder may be reached from the different windows of the different stories, I further provide certain adjuncts constructed for use and operation, as follows:

M′ is a separate supplementary ladder, to which is transversely affixed a platform, M, at one end of which is an opening or passage, *n′*. To the inner end of this platform N are provided hooks S. The side pins, *o*, of the platform N are horizontally slotted, as shown at *o′*, in order that they may be passed astride of any one of the rounds of the fixed ladder A, with the hooks S caught over the said rounds, thereby firmly securing said end of the platform to such round of said ladder A. Swinging braces T are pivoted to the outer end of the platform N, with their lower parts curved inward to permit their extremities to be passed behind a lower round of the ladder A, and there retained, thus holding the platform N in a horizontal position, with the ladder M′ extended laterally, so as to reach windows at substantially the same level, but at a greater or less distance from the platform N. The latter is provided at its outer end with a vertical ladder, U, and said platform N is reached from the ladder A through the opening or passage *n′*. The ladder M′, with its platform N, may be thus attached to the ladder A at any portion thereof, according as it is desired to afford connection with any of the windows adjoining the ladder or with the roof of the building. The ladder is attached by ring-bolts *c″* to the platform, so that it may on occasion be quickly removed from the platform, and is further provided with chains A″, having hooks B″ at their free extremities. On the sides of the window-frames are eyebolts *c‴*. When desired, the ladder may be detached from the platform, and the hooks B″, being inserted in the eyebolt *c‴*, suspend the ladder as a scaling-ladder in suitable juxtaposition to the vertical series of windows more remote from the fixed ladder A. The hooks B″ may ordinarily be furnished by the pintles of the shutters or blinds. The ladder should have a looped rope or strap, (shown in dotted outline,) which strap is passed around the back of the neck of the person adjusting it to the fixed ladder, and thence under the armpits, so enabling him to freely ascend the fixed ladder, and, after stapling the end of the horizontal ladder to the rings of the said fixed ladder, he descends far enough to sieze the swinging braces below, and affixes them to their appropriate rings.

It is to be understood that the platform, hinged to the window-sill, and when brought to a vertical position, as described, constitutes a window-guard to protect the window from access from the outside, care being taken that its upper rail and stop are suitably placed below the upper sash, to limit its downward movement, so that no space sufficient to permit access over or above the platform, or the

upper sash, when lowered for ventilation, is afforded.

Referring to the locking device, that shown is the ordinary latch, G′, pivoted to the inner side of the door, the pivot having the outside operating-knob, *a*, while G″ represents the ordinary keeper fastened to the casing; but any approved form of latch or locking device may be used to fasten the door when closed and operated from the outside.

What I claim as my invention is—

1. The combination, in a fire-escape, of a ladder, A, permanently fixed within a wall-casing, B, provided with the catch G″, and a door hinged to one side of said casing, with a locking device and an alarm device, both arranged upon the inner side of the said hinged door, and means, substantially such as described, for operating said locking device, arranged upon the outer side of said door, and means for protecting said operating device, substantially as described.

2. The combination, with the fixed wall-ladder A, its inclosing-case, and a door hinged to one side thereof, of a locking device, *n* G′ G″, and means, substantially such as described, attached to the inner side of the door for connecting said fastening device with an alarm device attached to the inner side of the door, said connection being such that the act of unlocking the door will actuate the alarm, substantially as described.

3. The combination, with the window of a building, of a fixed inclosed wall-ladder, A, and a barred platform, K, hinged to the window-sill in such manner that when raised and fastened to form a window-guard it will prevent access to its hinges, and form a stop to limit the descent of the upper sash to prevent access through the window from the outside, and form the means whereby access is had from the inside of the building to the operating device for opening the ladder-case and giving the alarm.

4. The combination, with the horizontal rows of windows of a building, of the fixed vertical ladder A, a movable horizontal platform, N, provided with means for attachment to the fixed vertical ladder, and a horizontal supplemental ladder carried by said platform and arranged to project horizontally to the windows remote from the ladder A, all substantially as and for the purpose herein set forth.

5. The combination, with the movable platform N, having arms slotted at their inner ends, and having the hooks S, and provided at its outer end with a vertical ladder, *u*, and the braces T, of the fixed vertical wall-ladder A, all constructed and arranged for use substantially as described.

6. The combination of a nipple, D, percussion rod or striker E, spring *f*, dog *h*, hook F, lever G, and a knob or handle, *a*, with the door and inclosing-casing of the fixed vertical ladder A, all substantially as and for the purpose herein set forth.

7. The adjustable platform K, hinged at its lower end to the window-sill, so as to be cacable of being placed horizontally, and of vertical adjustment to cover and guard the window, and devices, substantially as described, for locking the said platform in said vertical position, substantially as and for the purpose herein set forth.

8. The ladder M′, detachable from the platform N, and furnished with chains and hooks, whereby it may be suspended as a scaling-ladder from hooks or pintles adjacent to the window, substantially as and for the purpose herein set forth.

9. The combination, with the platform K, hinged or attached at its lower part, of the pins *r*, saddle M, and block L, substantially as and for the purpose set forth.

10. The combination, with the platform hinged at its lower part, of the hinges T′, attached to the platform, and covered thereby when the platform is in a vertical position, and suitable devices for retaining it in such position, substantially as and for the purpose herein set forth.

11. The combination, in a fire-escape, of a ladder, A, permanently fixed within a wall-casing, B, provided with a catch, G″, and a door hinged to one side of said casing, with a locking device and an alarm device, both arranged upon said door, and means, substantially such as described, whereby said locking device is actuated from the outside of said casing, for the purpose specified.

12. The combination of the movable platform N and the fixed vertical wall-ladder A with devices, substantially such as described, whereby said movable platform is suspended and braced, substantially as described, for the purpose specified.

13. The combination, with an inclosed fixed wall-ladder, A, and a door, C, of a locking device and an alarm device, connected for simultaneous operation, as described, and an outside knob, *a*, of the signal device, also actuating the locking device, substantially as set forth.

14. The combination, in a fire-escape, of the fixed wall-ladder A, the open wall-casing B B therefor, provided with a suitable catch, G″, and a door, C, hinged to one side of said wall-casing, with a locking device and an alarm device, both arranged upon the inner side of the door, and means, substantially such as described, for actuating the locking and the alarm devices from the outside of the inclosing wall-casing, substantially as set forth.

15. The combination, with the fixed wall-ladder A, of a separate attachable platform, N, provided with a vertical ladder, *u*, at its outer end, and suitable means for attaching it to and supporting it upon the rungs of the wall-ladder, the said platform having an opening, *n*′, at its inner end for access from the wall-ladder, substantially as described.

16. The combination, in a fire-escape, of an inclosed fixed wall-ladder, and a door, C, provided on its inner side with a suitable lock-

ing device and an outside knob, *a*, for actuating said door-lock, with a barred platform, K, hinged to the window-sill, adapted to form a fixed guard to the window, and means whereby the said outside lock-actuating knob may be reached from the windows, substantially as herein set forth.

17. The combination, with the fixed wall-ladder A and an open casing, B B, therefor, with the movable platform N, having an opening, *n'*, at its inner end for access thereto from the wall-ladder, means for attaching it to the rungs of the wall-ladder, and a brace or braces, T, hinged to the outer end of said platform, and adapted to be supported against the wall upon the ladder-rung, substantially as described.

18. The combination of the fixed wall-ladder A with a platform adapted for attachment thereto, and a supplemental ladder, M', adapted for attachment to said platform, all arranged, as described, to form a fire-escape, substantially as set forth.

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