S. L. SMITH.

FIRE ESCAPE.

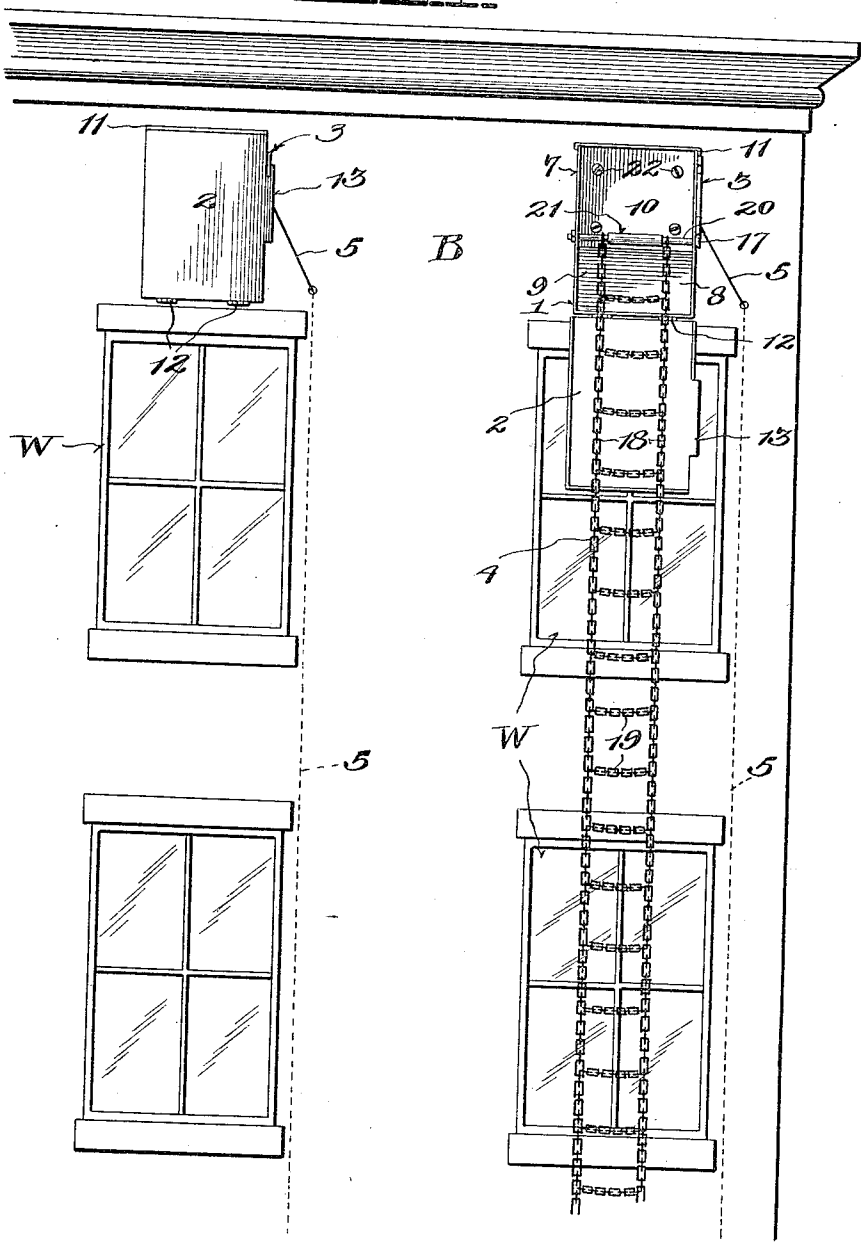
APPLICATION FILED JULY 30, 1914.

1,123,029.

Patented Dec. 29, 1914.

2 SHEETS—SHEET 1.

Fig. 1.




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Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

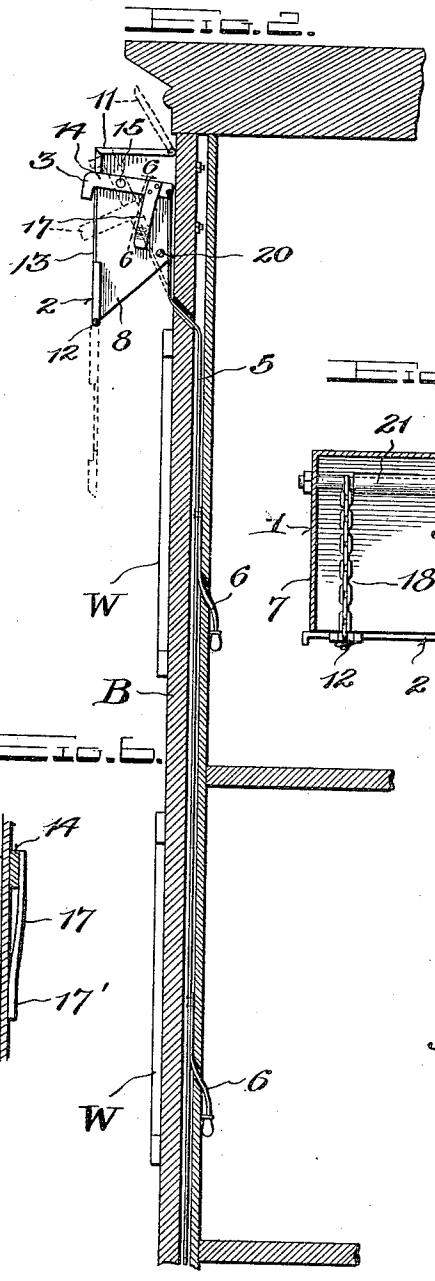



Fig. 3.

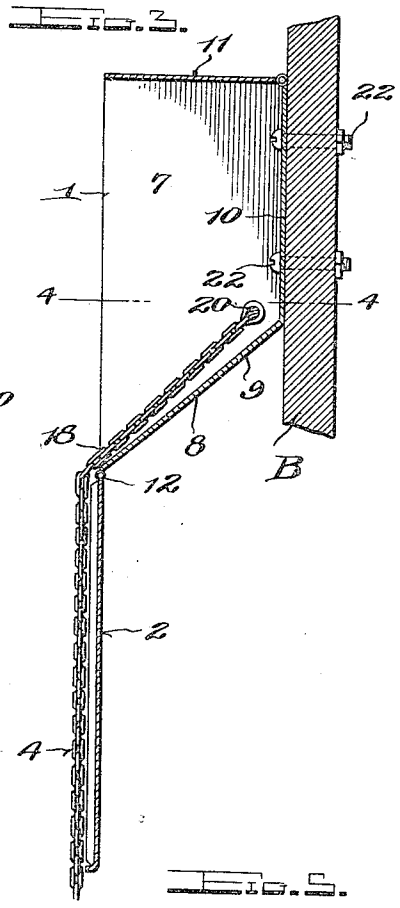


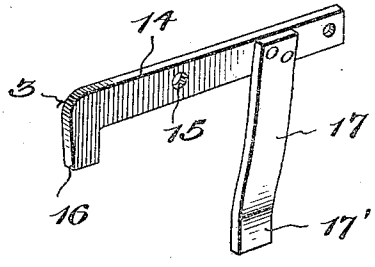

Fig. 4.




Fig. 6.




Fig. 5.




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# UNITED STATES PATENT OFFICE.

SIDNEY L. SMITH, OF PITTSBURGH, PENNSYLVANIA.

## FIRE-ESCAPE.

1,123,029. Specification of Letters Patent. Patented Dec. 29, 1914.

Application filed July 30, 1914. Serial No. 854,118.

*To all whom it may concern:*

Be it known that I, SIDNEY L. SMITH, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates broadly to improvements in fire escapes and has for its main object to improve upon the construction of devices of this character to such an extent as to provide an extremely simple yet highly efficient device.

In carrying out the above end, I provide a casing adapted to be secured to a building above a window therein, a flexible ladder normally retained in said casing, a hinged door normally closing the front end of the casing, a catch for retaining said door in closed position, and an operating element whereby said catch may be operated from any one of a number of floors in the building.

A further object of the invention becomes to so construct and position the above mentioned catch as to cause the same to positively force the door open when said catch is tripped, thereby releasing the flexible ladder and allowing the same to fall.

A further object is to locate the catch upon the exterior of the casing whereby, should the operating element become disconnected therefrom in any manner, said catch may be easily tripped by other means.

With the above and minor objects in view, the invention resides in certain novel features of construction and combination herein described and claimed and shown in the drawings wherein—

Figure 1 is a side elevation of a portion of a building showing the application of a pair of my improved fire escapes thereto, one of the devices being shown in inoperative position while the other is illustrated in operative or extended position. Fig. 2 is a vertical section through the wall of the building showing an edge view of one of the casings in closed position and illustrating more particularly the arrangement of the catch and the tripping means therefor. Fig. 3 is an enlarged vertical section through the casing showing the positioning of parts when the catch is released. Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 3. Fig. 5 is a detail perspective view of the catch, and Fig. 6 is a detail vertical section taken on the line 6—6 of Fig. 2.

In the accompanying drawings, I have illustrated my improved fire escape as comprising, in general, a casing 1, a hinged door 2, for the forward side thereof, a catch 3 for retaining said door in normally closed position, a flexible ladder 4 secured at its upper end within the casing and adapted to be normally confined therein, a main trip element 5 for releasing said catch and a plurality of branch trip elements 6.

As clearly shown in the various figures of the drawings, the casing 1 comprises upright end walls 7 whose upper ends are preferably formed at right angles to their upright edges while their lower ends are inclined downwardly and outwardly as clearly seen at 8 in Figs. 2 and 3, said inclined lower edges of the walls 7 being provided for the attachment of a downwardly and outwardly inclining bottom 9 to said casing, the bottom 9 being here shown as integrally united with an upright rear wall 10 to whose upper edge a top 11 is hinged, said top having flanges 12 on its opposite ends embracing the end walls 7.

Hinged at 12 to the lower end of the bottom 9, is the door 2 which is provided on one edge with a laterally extending flange 13 which projects outwardly from the adjacent end wall of the casing 1 as clearly seen in Fig. 1, said flange coacting with the catch 3 in a manner now to be described. The above mentioned catch 3 is here shown in the form of a lever 14 which is pivoted at 15 to one end wall 7 of the casing 1, said pivot being located slightly above and in rear of the upper edge of the flange 13 when the door 2 is closed, said lever normally lying in a substantially horizontal position and having a depending nose 16 formed on its forward end and normally positioned in front of the flange 13, whereby the door 2 is held in closed position.

The rear end portion of the lever 14 is provided with a depending arm 17 which is

adapted to be forced against the flange 13 when said lever is rocked by downward movement of the main operating element 5 through the instrumentality of one of the supplemental operating elements 6, said main element being here shown as extending upwardly between the outer and inner walls of the building and as being loosely connected to the extreme rear end of the lever 14, while the elements 6 pass through suitable openings formed in the inner walls of the building and are connected with said element 5 as clearly seen in Fig. 2. It may here be explained that the amount of friction existing between the lever 14 and its arm 17 and the adjacent end wall 7 is sufficient to retain the catch 3 in normal or operative position and, in fact, said arm 17 is preferably offset slightly, as seen in Fig. 6, in order that its extreme lower end 17' may yieldingly contact with said end wall thereby effectually retaining the catch in operative position. By so constructing the arm 17, it will be seen that the same not only constitutes means for forcing the front door 2 outwardly when the catch is tripped but constitutes a spring for yieldingly retaining the catch in operative position.

It will be further noted that by locating the entire catch mechanism on the exterior of the casing, should the operating element 5 become disconnected therefrom in any manner, said catch can be readily operated by other means.

The flexible ladder 4 is here shown as comprising flexible side members 18, preferably chains, and transverse rungs 19 united at their opposite ends to said members 18 as clearly seen in Fig. 1, the upper ends of the members 18 being secured to a transverse rod 20 whose opposite ends are secured to the end walls 7, a suitable spacing sleeve 21 being preferably provided on said rod whereby the members 18 are normally held in correct spaced relation.

With the parts as above described, the device is employed as follows: The casing 1 is secured to the outer wall of a building B directly above certain of its windows W, by means of bolts 22 or other suitable fastening means, the flexible ladder 4 is confined within the casing by closing and latching the door 2 by the above mentioned means and the operating elements are positioned as seen in Fig. 2. When now it becomes necessary to extend the ladder in order that persons may escape from the windows W, it is simply necessary to pull downwardly upon one of the operating elements 6 whereby the catch 3 will be rocked in such a direction as to disconnect its nose 16 from the flange 13 and to cause its arm 17 to forcibly contact with said flange thereby forcing the door 2 outwardly to the position shown in Fig. 3, in which position the ladder 4 is free to descend by gravity until said ladder stands in the position seen in Figs. 1 and 3. When it is again necessary to incase the ladder within the casing the door 2 is forced upwardly and latched, this positioning of parts leaving the ladder suspended from the upper edge of said door. The door 11 now stands open and the ladder may be correctly positioned within the casing from the upper end thereof, after which said door 11 is again closed.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have produced an extremely simple device yet one which will be highly efficient in operation and which will readily carry out the objects for which it is designed.

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

1. In a fire escape, a casing having a hinged door, a stop projecting laterally from one edge of said door, a catch pivoted to said casing and having a nose coacting with said stop for retaining the door in closed position, a combined door opening and catch retaining arm carried by said catch and contacting with the adjacent wall of said casing, a flexible ladder normally confined within said casing and connected thereto at one end, and means whereby said catch may be rocked around its pivot.

2. In a fire escape, a casing having an upright door closing its forward side and hinged thereto at its lower edge, a flexible ladder normally confined within said casing and secured thereto at one end, a flange projecting outwardly from one upright edge of said door, a substantially horizontal lever pivoted to the adjacent side wall of said casing and having a nose coacting with said flange for retaining the door in closed position, a combined door opening and catch retaining arm depending from the said lever and contacting with the adjacent side of the casing and means whereby said lever may be rocked around its pivot to release said nose from engagement with the flange and to cause said arm to contact with said flange.

3. In a fire escape, a casing having a downwardly and outwardly inclining bottom, an upright front door hinged at its lower edge to said bottom and having an upright flange projecting laterally from one of its side edges, a flexible ladder normally confined within said casing and secured thereto at one end, a substantially horizontal lever pivoted intermediate its ends to the side wall of the casing adjacent said flange, said lever having a depending nose coacting with said flange for retaining the door in closed position, an arm depending from the rear end portion of said lever, said arm be-

ing offset and having its lower end contacting yieldably with the adjacent wall of the casing and an operating element connected to said lever for rocking the same around its pivot to release said nose from engagement with the flange and to cause said arm to contact with said flange.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SIDNEY L. SMITH.

Witnesses:
J. A. MERCER,
D. V. SMITH.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**