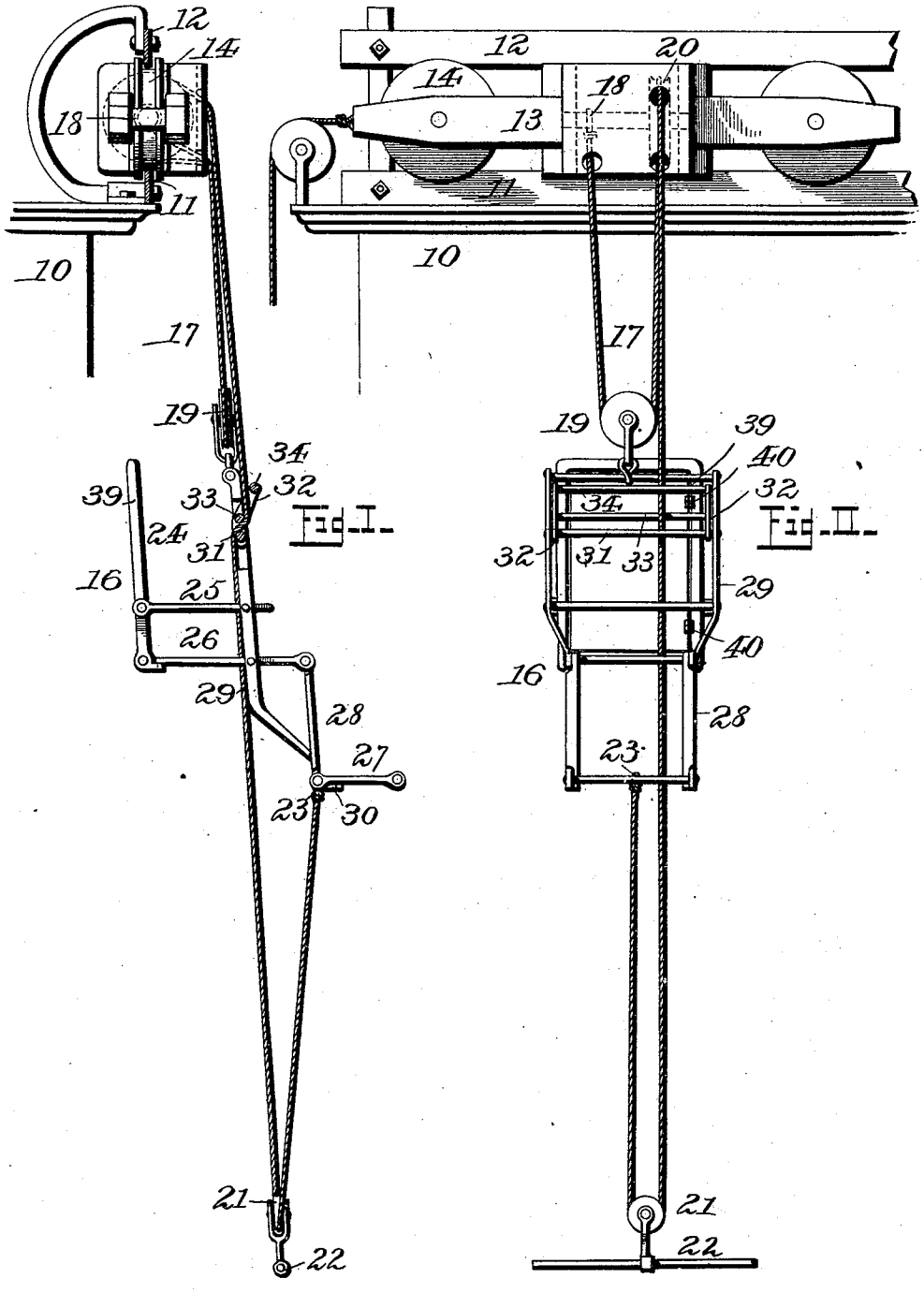
(No Model.) 2 Sheets—Sheet 1.

T. B. WOODWARD.

FIRE ESCAPE.

No. 479,610. Patented July 26, 1892.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. III.

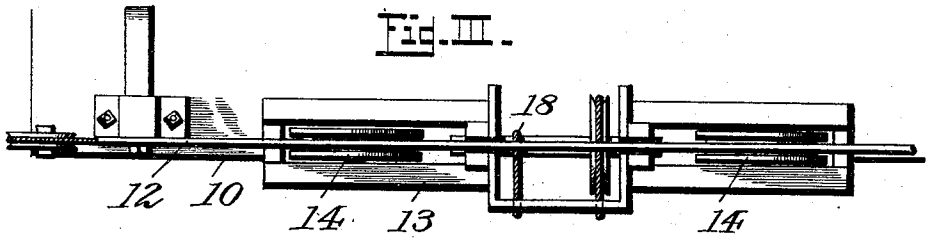


Fig. IV.

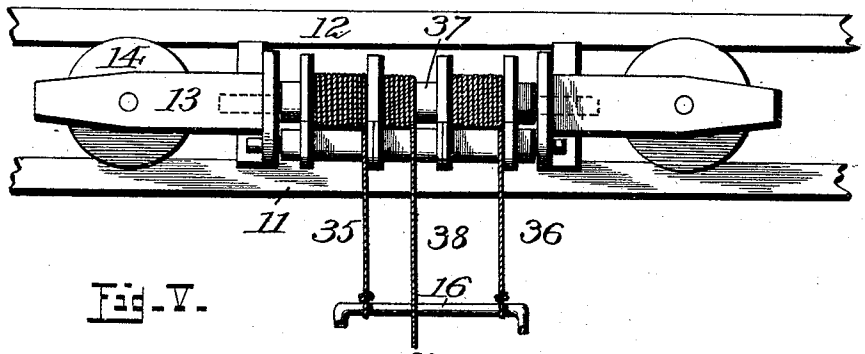


Fig. V.

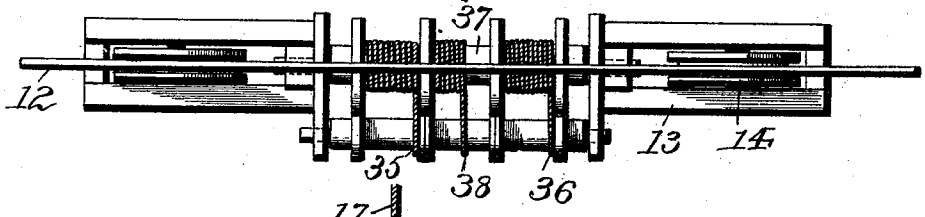
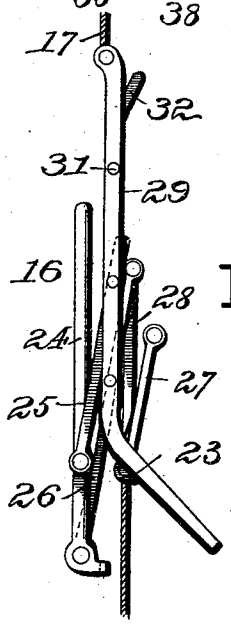


Fig. VI.



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UNITED STATES PATENT OFFICE.

THEODORE B. WOODWARD, OF NORWAY, PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 479,610, dated July 26, 1892.

Application filed March 30, 1892. Serial No. 427,088. (No model.)

To all whom it may concern:

Be it known that I, THEODORE B. WOODWARD, a citizen of the United States, residing at Norway, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby 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.

This invention relates in general to fire-escapes by means of which persons may descend from the upper rooms of a burning house, and more particularly to that class of fire-escapes which are attached to the outside of houses to communicate to the windows thereof; and its object is to provide a chair or carriage which may be folded and held in small space when not in service and which will be readily opened for service when released, means for lowering the chair safely by the occupant thereof, means for guiding and steadying the descent thereof, for returning the chair either by a person at a window in the house or by one on the ground, and means for controlling the speed of descent.

To this end my invention consists in the construction and combination of parts forming a fire-escape, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure I represents a fire-escape according to my invention in side elevation with a portion of a house near the cornice to which it is attached. Fig. II is a front elevation of the same. Fig. III is a top view of the trolley. Fig. IV is a front view of a modification of the trolley. Fig. V is a top view of the modification, and Fig. VI is a side view of the chair closed for storage.

10 represents a portion of a house to which I secure a track comprising a lower rail 11 and an upper rail 12. These rails pass along either the front or back of the house above the windows, and on the rails a trolley 13 is mounted to travel by means of wheels 14.

16 represents the escape-chair, and 17 a rope of wire or other suitable material; or it may be a chain attached at one end 18 to the trolley, thence passing down around a pulley 19, which is connected with the chair to carry it, thence up over a pulley 20 in the trolley, thence down to a pulley 21, which is attached to a handle 22 to be carried by a person on the ground, and thence up to the chair, to the lower portion of which its other end 23 is attached. The chair has a framework of light iron or steel bars comprising the back 24, to which the arms 25 and the seat 26 are pivoted.

27 is the step, pivoted to the front portion 28, which is pivoted to the seat.

29 is the main brace, comprising two side portions pivoted to the arms 25 and to the seat 26 and bent forward at the lower end to support the step against swinging backward in service.

30 is a stop-lug fixed on an angular arm of the front portion 28 to support the step and limit its downward swing.

The brake comprises a bar 31, secured across between the sides of the main brace 29, a pair of side pieces 32, pivoted upon the said bar 31, and two cross-bars 33 and 34, rigidly fixed to the side pieces 32. The rope or chain 17 is to be passed between the bars 31 and 33, and the bar 34 serves as a handle, which the rider may push forward more or less to bend the rope more or less out of line, whereby its free passage through the brake may be checked.

When this fire-escape is to be used, the handle 22 is to be thrown to the ground with the attached pulley 21 and a portion of the rope 17. This will pull at the lower portion of the folded chair and open it from the closed condition of storage. (Shown in Fig. VI.) Now if the rope be carried along in front of any window and both strands be pulled upon, the trolley will be drawn over that window. Then by pulling on one or the other of the strands the chair may be raised or lowered to the desired window, into which the person there in danger is to pull it and let it rest its seat 26 on the window-sill, while he climbs through or over the back 24 and takes his seat in the chair. Now he should push out firmly on the brake-handle 34 to hold fast to the rope, while an attendant on the ground carries the handle 22 to some distance away from the house and pulls the chair and its occupant out of the window. Then the occupant may gradually loosen his push on the

brake until the chair descends as rapidly as may be desired. The trolley may be rolled along upon its track by any means, and that is not the subject of the present invention.

By the above-described arrangement of rope and pulley any person of usual strength is enabled to raise himself or a heavier weight to any height that the chair will go, so that this device may be applied to raising and lowering heavy trunks, furniture &c., to and from high rooms.

In the modification shown in Figs. IV and V two separate ropes or chains 35 and 36 are adapted to be wound upon a spool-shaft 37 by pulling down upon another rope or chain 38, which is wound the opposite way around the same shaft, and the ropes 35 36 may be secured to the chair 16, while the rope 38 passes through the brake 32 33. This modification does away with the lower pulley 21 and with the necessity of an attendant therefor; but the chair cannot be as well guided away from projecting window-cornices and from smoke and flames issuing from windows below. The back 39 of the chair may be a door of noncombustible material, hinged at one side 40 to swing outward to admit a passenger and then to be closed to shield him from heat. The seat of the chair may also be covered with any suitable material, such as asbestus cloth.

A suitable box may be provided to conceal the chair and trolley and be made an ornamental portion of the house-cornice. The chair could be operated by a strong person using his hands upon the rope in place of the brake described; but that method would be unsafe for most people. The ascending portion of the rope might pass through the front cross portion of the chair and be secured thereto in any usual manner while a person is getting in. When not in service, the handle 22 may be secured at the side of the house within reach from the ground, so that the escape may be wholly managed by a person on the ground. Of course the handle 22 and pulley 21 might be used with the modification shown in Figs. IV and V. In either case a person on the ground may draw the chair up or down without the assistance of the occupant of the chair.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

1. The combination, in a fire-escape, of a trolley mounted on rails attached to a house, an escape-chair having a pulley attached to it, a rope or chain attached at one end to the trolley and passing down around the said chair-pulley, thence up over a pulley in the trolley, and thence downward and with a return-bend extending again upward and attached at its other end to the chair, there being another pulley on a handle and mounted in the return-bend of the rope, substantially as described.

2. The combination, in a fire-escape, of a chair-back, arms, a bottom, a front, and a step, all hinged together, the front being provided with a stop-lug for the step, and a main brace hinged to the arms and bottom and extending below the latter and forward as a brace for the front, substantially as described.

3. The combination, in a fire-escape, of a chair having a main brace extending up beside the arms and a brake pivoted in the main brace and comprising three cross-bars, one of which is the pivot-pin, one on the binder of the brake and the other on the handle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THEODORE B. WOODWARD.

Witnesses:
WILLIAM W. POLK,
HOWARD H. POLK.