

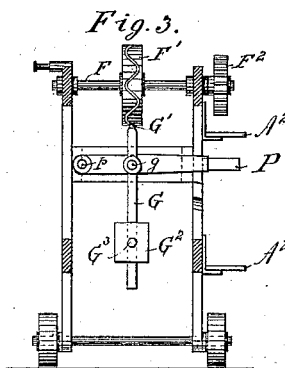
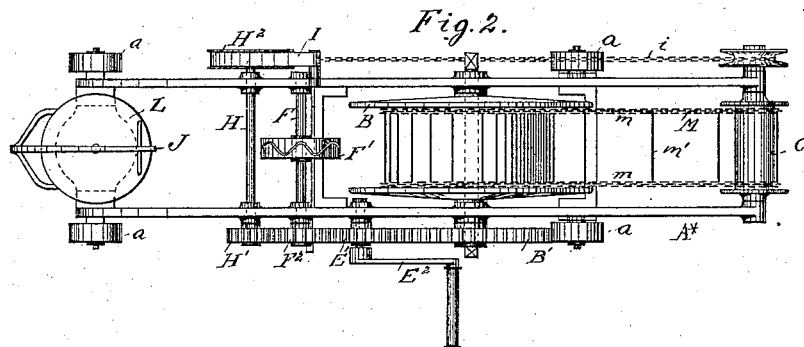
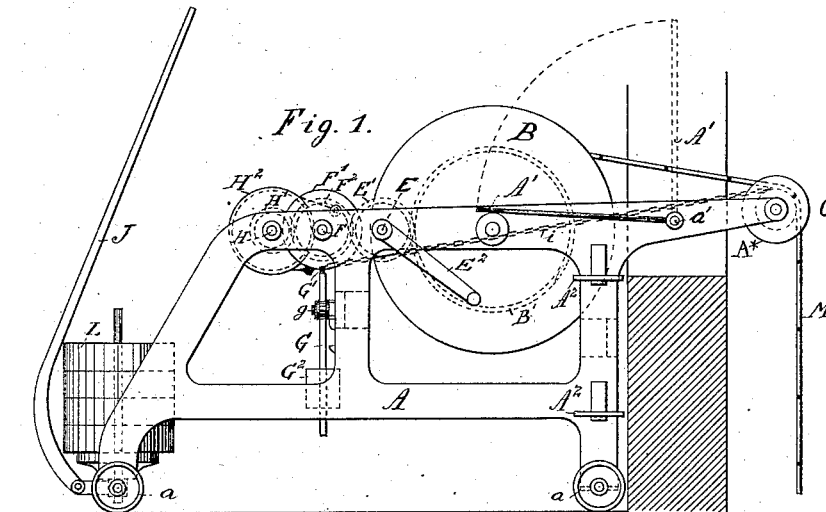
(No Model.)

J. ROBERTS & N. W. PALMER.

FIRE ESCAPE.

No. 267,019.

Patented Nov. 7, 1882.



WITNESSES—

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UNITED STATES PATENT OFFICE.

JAMES ROBERTS, OF NEW YORK, N. Y., AND NEWTON W. PALMER, OF
BOSTON, MASSACHUSETTS.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 267,019, dated November 7, 1882.

Application filed February 13, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES ROBERTS, of New York city, in the county and State of New York, and NEWTON W. PALMER, of Boston, in the county of Suffolk, in the State of Massachusetts, temporarily residing in the city and county of Hartford, in the State of Connecticut, have invented certain new and useful Improvements relating to Fire-Escapes; and we do hereby declare that the following is a full and exact description thereof.

Our invention is made portable by mounting on small wheels suitable for conveniently moving about on level floor, and is intended to be placed in the upper story or in each story of a tall building, and to be made available by a roller mounted in a stout and rigid portion of the framing being thrust from a window on such side of the building as is most convenient, according to the fire and direction of the wind, &c. We employ two chains with cross-bars, constituting a flexible ladder which is unwound from a windlass or reel supported in the frame-work. We provide a vibrating device which controls automatically the rapidity with which it will be lowered if allowed to go without other check. We provide, in addition, a brake with a connection to be operated from below. Means are provided for winding up the ladder with facility.

The following is a description of what we consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a general side elevation, showing the machine in position for use. Fig. 2 is a corresponding plan view; and Fig. 3 represents a detail detached, and is an elevation from the back, showing the pendulum-governor attachment.

Similar letters of reference indicate like parts in all the figures.

We employ side frames of wrought-iron or steel, connected by cross-bars having a stout and rigid extension from one end, constituting a rigid frame-work, A A*. In this we mount a stout windlass, B, to the axis of which we permanently unite the upper end of a flexible lad-

der, M, which, on being wound off the windlass, runs over a wide roller, C, which is supported by the overhung portion A* of the frame in such position as to be readily thrust out of the window, while the machine is supported on the rollers *a*, resting on the floor. The windlass B is of such capacity as will contain the entire length of the ladder. Its shaft is formed with square ends, to which cranks may be applied. It carries a gear-wheel, B', meshing into the gear-wheel E' on the short shaft or stud E, to which may be connected a crank, E², by which the ladder M may be wound up when required.

It shall be part of the duty of the persons in charge of tall buildings to drill with the apparatus at stated intervals, running the roller C, with the extension A* of the frame, out of a window and letting the ladder run down the same, as in case of fire. A crank, E², is then applied, either to the shaft E or to the shaft of the windlass, to wind up the ladder.

The shaft F, geared to the shaft E by gear-wheel F², carries a wheel, F', which is provided with a zigzag groove around its periphery. In this groove engages a small roller, G', mounted on a pendulous lever, G, turning on the center *g*, supported on the lever P, pivoted on the frame-work A. The weight G² may be adjusted up and down on the lever G, and set in the position most desirable by the aid of the pinching-screw G³. A fourth shaft, H, is also supported in fixed bearings in the framing A. It engages by a small gear-wheel, H', with the gear-wheel F². This shaft carries a double-flanged wheel or pulley, H², the periphery of which is embraced or partially embraced by a strap, I, of steel or iron, which tends to spring away from the wheel, but may be drawn into contact therewith by a light chain, *i*, attached to the free end of the strap I. This chain may be dropped out of the window, and may be operated by a person descending the ladder, or from the ground.

The folding tongue J is connected to a swiveling axle on which two of the wheels *a* are mounted. This facilitates the movement of the machine about in the hall and the proper directing of it to be thrust out of the window.

The flexible ladder M is made of iron or steel, in the form of two chains, *m*, composed of flat plates with rounded ends, secured together with stout rivets, leaving sufficient flexibility for the easy winding of the chains on the windlass. These chains are connected at proper distances apart by rigid metallic bars *m'* serving as rungs, the whole constituting a fire-proof and reliable flexible ladder.

L L are weights, of any convenient form and size, applied to insure a sufficient stability when the ladder is unwound and heavily weighted.

The machine may be stored in any convenient part of the hall or passage. It may be covered with a tarpaulin of canvas or other suitable material to keep off dust and preserve the bearings in good condition.

A' A' are uprights turning on knee-joints at *a' a'*. Ordinarily these are folded down out of the way; but in case the ladder is lowered these uprights are raised to a vertical position, and serve as supports to aid people in descending the ladder. A² A² are steps provided on each side of the framing, near the front, to facilitate climbing.

Our machine is protected from all destructive influences, and with a use of only two or three times a year, to insure its condition, will last indefinitely. It may be thrust out of any window and be moved and worked by a single man.

The pendulum G may be kept engaged under all conditions, so as to vibrate when the ladder is being raised as well as when it is being lowered; but we prefer, under most conditions, to disconnect the pendulum when the ladder is to be raised. This is particularly important when it is to be raised rapidly in the case of fire,

either to bring up hose or to repeat the operation of lowering helpless persons who are not able to descend the ladder by the rungs in the ordinary manner. The disconnection is effected by lowering the lever P, on which the pendulum center *g* is fixed. This lever P turns on the center *p*, and may be held in the required condition by any reliable fastenings.

We claim as our invention—

1. In a portable fire escape, the wheel F', having a zigzag groove in the periphery thereof, in combination with the pendulum-lever G, pivoted to the lever P, and having an adjustable weight, and with the windlass B, carrying a flexible ladder, M, arranged to serve as herein specified.

2. The rigid framing A A*, mounted on wheels *a*, and adapted to be conveniently placed, with the stout arm A* protruding from the window of a building, in combination with the roller C on the arm A*, and with the windlass B, flexible ladder M, and weights L, arranged to serve as herein specified.

3. The steps A² and hinged uprights A', in combination with the frame A A*, flexible ladder M, windlass B, and operating means E² and its connected shaft and gearing E E', as herein specified.

In testimony whereof we have hereunto set our hands, at New York, N. Y., this 9th day of February, 1882, in the presence of two subscribing witnesses.

JAMES ROBERTS.
N. W. PALMER.

Witnesses:

CHARLES C. STETSON.
B. E. D. STAFFORD.