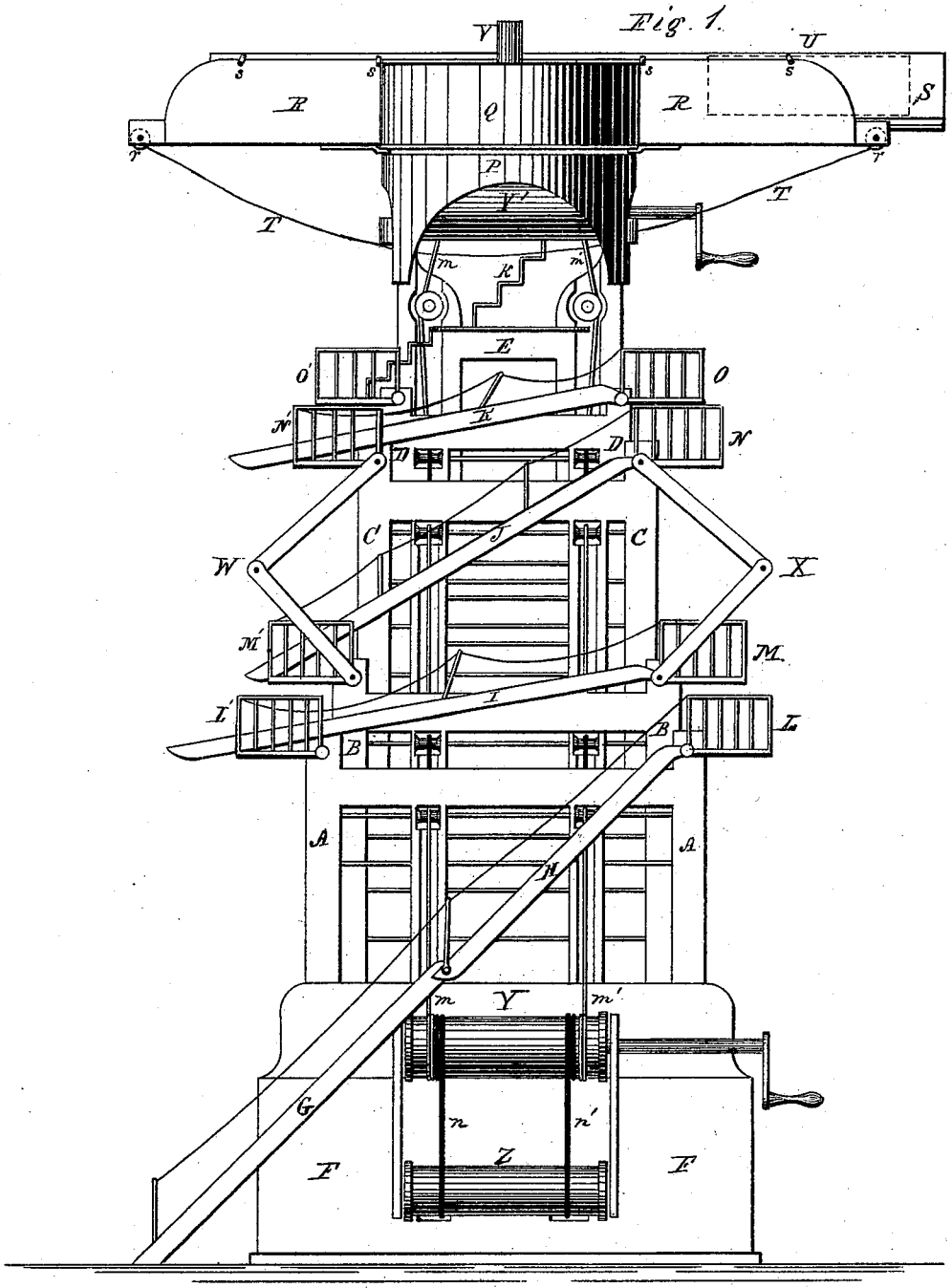
3 Sheets—Sheet 1.

T. McCLUNIE.

FIRE-ESCAPES.

No. 180,252. Patented July 25, 1876.

Fig. 1.



Witnesses.

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Inventor.

Thomas McClunie

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3 Sheets—Sheet 2.

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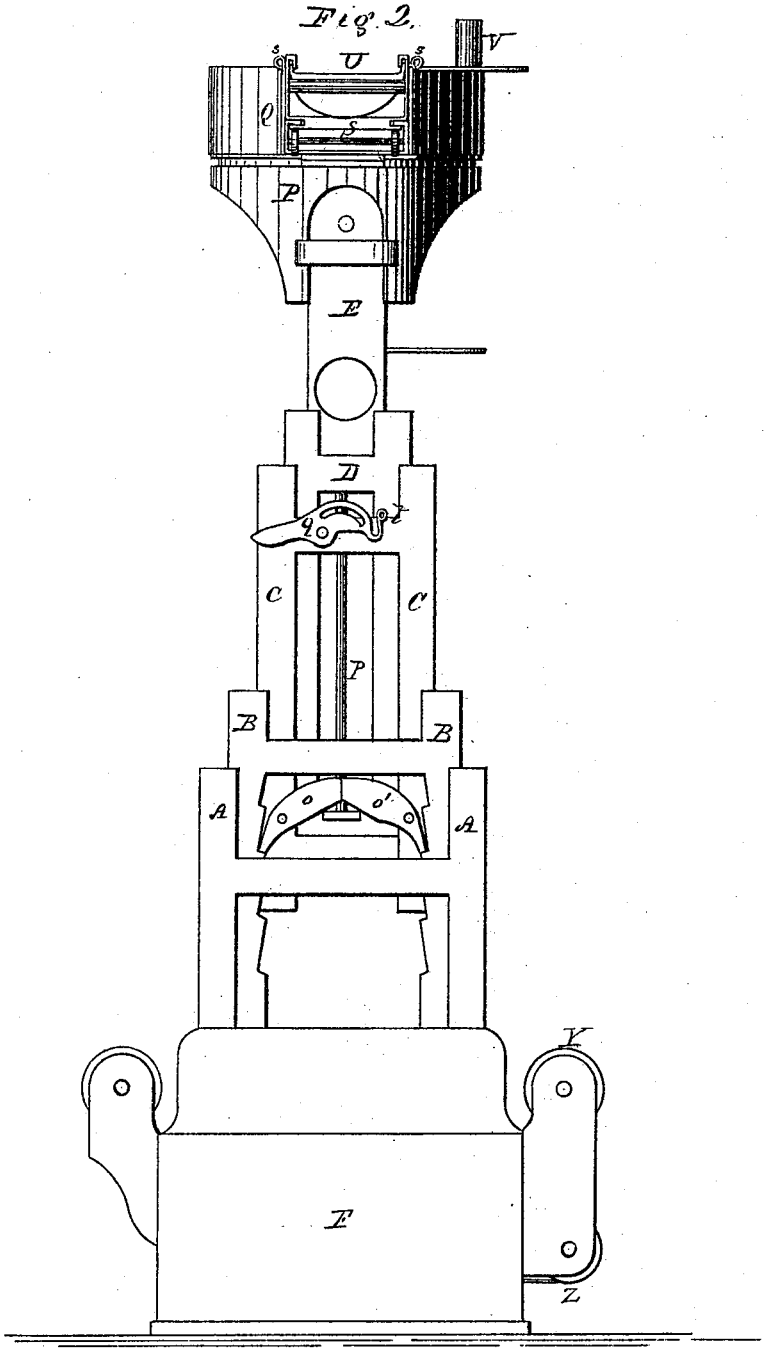
Fig. 2.



Witnesses.

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3 Sheets—Sheet 3.

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FIRE-ESCAPES.

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Fig. 4.

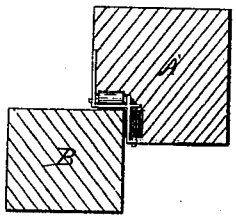


Fig. 3.

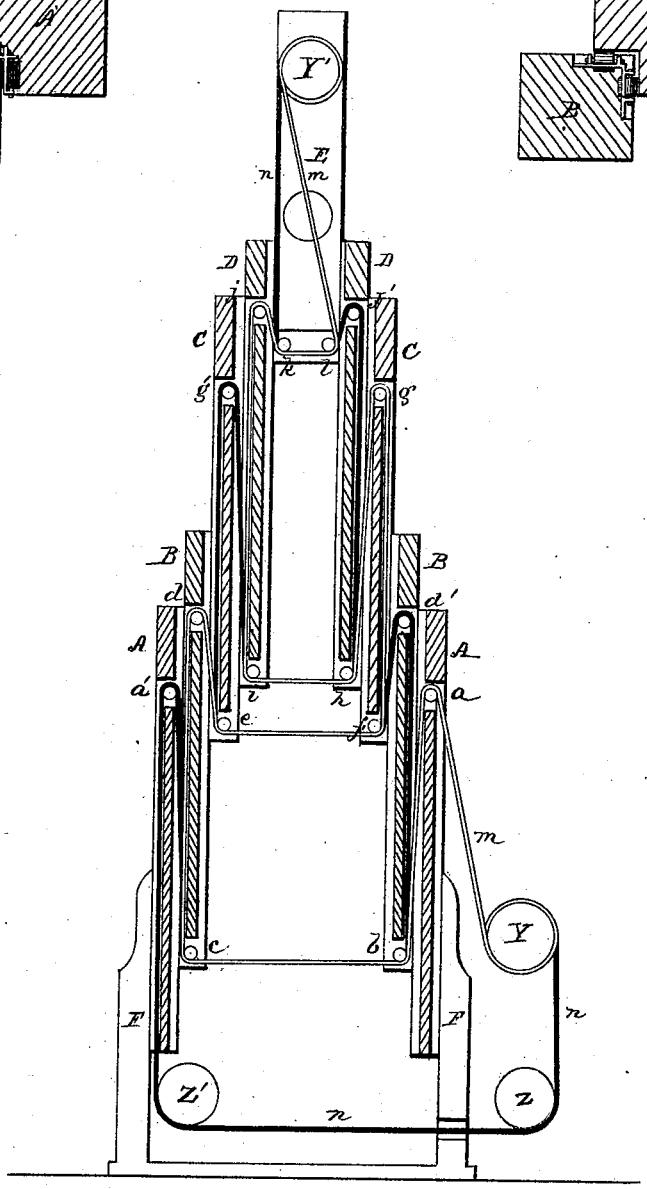
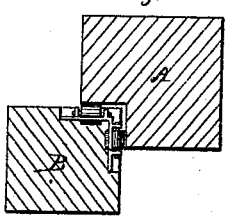


Fig. 5.



Witnesses.

Wendell R. Curtis

John J. Peters

Inventor.

Thomas McClunie

by Thos. G. Ellis attorney

UNITED STATES PATENT OFFICE

THOMAS McCLUNIE, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **180,252**, dated July 25, 1876; application filed April 3, 1875.

To all whom it may concern:

Be it known that I, THOMAS McCLUNIE, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

The object of my invention is to provide a reliable and efficient fire-escape, that can be moved from place to place with ease for use, and that can be extended upward to any desirable height for access to the windows or roof of a burning building, and at the same time be safe and commodious for ascent and descent.

My invention consists in an extensible telescopic frame structure, which can be placed on wheels for ease of transportation; in the method of raising and lowering the several lengths or stories; and in the mechanical details of construction, that will be hereinafter more fully described.

In the accompanying drawings, on three sheets, Figure 1 is a front view of the machine complete. Fig. 2 is a side view with the railings, stairways, and some of the minor details removed, in order to show more clearly the construction and operation of the mechanism for holding the machine in place when extended. Fig. 3 is a section through the working parts of the machine, showing the method by which it is raised or extended, and the arrangement of the ropes or chains by which this motion is effected. Figs. 4 and 5 are rollers placed at the upper and lower corners of each frame or story to facilitate the motion.

A B C D E are rectangular frames, fitting one into the other telescopically, the outer corners of each fitting into the interior corners of the one below. The lower frame A is stationary, and rests upon the base F, to which it is firmly attached. This base F is intended to rest upon wheels, for convenience of transportation, in the ordinary manner of a wagon-body. It can be used without wheels when intended only for local use. G H I J K are stairways leading from story to story of the machine. There are two sets of these, one on each side, leading down in opposite directions. There is also a stairway, R′, in the extreme upper compartment. L M N O and L′ M′ N′ O′ are balconies on the sides of the machine, serving as landings to the stairways, each balcony being at the foot of one of the stairways leading from above, and at the head of one leading to the next landing below. They are so arranged that a person descending one stairway crosses over by the balcony to the other side of the machine to descend the next flight. The head of the machine P is made circular, and is furnished with a turn-table arrangement upon its upper surface, upon which rests the circular box Q. Across the top, through Q, and extending out some distance on each side, is the channel R, within which slides the extension-channel S. This moves out and in from either end of R, and is for the purpose of reaching horizontally into a window, or to a point at some distance from the center of the machine. The movement is effected from the machine by means of the cord T, which is attached to the middle of the slide S, and passes over pulleys *r r* at the outer ends of the channel R, to the interior of the machine in the top compartment under P. The slide S is made to move easily on suitable rollers. Within S is a car or basket, U, which moves freely from end to end, on suitable slides or rollers, for the purpose of drawing persons or property from the end of the channel S to the center of the machine without danger of falling, through fear or accident. Upon the circular box Q is a socket, V, for the purpose of placing a rotating derrick so as to reach higher and still farther out when required, as in the case of very high buildings.

Ladders of ordinary construction, or of any form ordinarily used from the ground as fire-escapes, can be placed upon the box Q, and thereby gain the whole additional height of the machine, in addition to any practicable length of ladder.

Upon Q and R are rings or loops *s*, for the purpose of attaching guys, either to support the machine and prevent it from oversetting, or to sustain ladders above the top, as before described. W and X are jointed braces, reaching from top to top of the successive stories or frames. They are made with a joint in the middle, and bend to one side when the frames are lowered, and become nearly or quite straight when the frames are fully raised, so

as to strengthen and stiffen the whole structure. As each story is raised it thus becomes a firm base for the support of the structure above.

The movement of the separate frames forming the stories is facilitated by rollers. These are shown in Figs. 4 and 5.

Fig. 4 shows the rollers that are placed at the inner top corner of the four pivots of the frame, and Fig. 5 shows the rollers that are placed at the outer lower corners of the next frame above. By means of these rollers the frames are held in line without lateral motion, and at the same time move easily up and down.

The arrangement for raising and lowering the several parts of the telescopic frame is shown in Figs. 1 and 3. There are four cords or chains for hoisting, *m m' n n'*, which pass over rollers, and are attached to the drums Y Y' at the bottom and top of the machine.

Fig. 3 shows the manner in which these cords act, being a section of the frame through the cord *m*. It also shows the cord *n* in black, except where it passes behind *m*. Starting from the drum Y, the cord *m* passes over the pulley *a*, under the pulleys *b* and *c;* then upward over the pulley *d*, and under the pulleys *e* and *f;* then upward over the pulley *g*, and under the pulleys *h* and *i;* then upward over the pulley *j*, and under the pulleys *k* and *l;* then upward and around the drum Y'. In this way it passes from the top of each story or frame under the bottom of the one above, so that by tightening the cord the frames are extended or raised. The cord *n* passes from the drum Y under the rollers Z Z', to carry it to the other side of the machine, from which it passes upward on the other side of the machine, in the same manner as the cord *m*, over the pulleys *a' c b d' f e g' i h j' l k*, to the drum Y'. The cords *m' n'* pass from Y to Y' in the same manner. It will thus be seen that if either of the drums Y Y' is turned by a winch, or in any other convenient manner, the cords will be all shortened, and the frame drawn out and extended upward. The machine can thus be raised either from the top or bottom, as is most convenient. The hoisting-cords, instead of passing under both sides of each frame, can, if desired, be so arranged as to pass under one side only. In this case they will remain on the same side of the frame and not cross over, as shown in the drawings. The cord *m* would run over the pulleys *a b d' f g h j' l* to the upper drum, and the others in a similar manner. There can also be duplicate drums at the bottom of the machine, to wind the cords upon opposite sides, if desired. The several frames are held in place, when raised to any degree, by the following mechanism, (shown for one story in Fig. 2:) *o o'* are pawls working in notches upon the inside of the upright posts of the frame B. The pawls are pivoted to the frame C, and fall into the notches by the counterpoise-weight of their rear ends. They are lifted out of the notches by the rod *p*, which passes upward to the cam-lever *q*. This is provided with a slot, through which a pin passes to the rod *p*, and gives motion to it, up or down, according as the handle of *q* is depressed or raised. The lever *q* is also provided with a ring, *t*, to which a cord is attached, to draw that end of the lever upward from some point above. By drawing this cord, or depressing the handle of the lever *q*, the rod *p* is raised, and the pawls *o o'* are released, so that the frame C can be lowered. When nearly down, the handle of *q* strikes upon the top of the frame B, and drops the rod *p*, so as to re-engage the pawls ready for another ascent.

The machine is intended to be furnished with guy-ropes, leading to the ground from the top compartment, when the height requires it. The ends of the hoisting-cords can be used for this purpose when the machine is raised by the upper drum, by letting them turn two or three times around the drum and then drop over the side.

What I claim as my invention is—

1. The combination of the several frames with end balconies across the structure and rigid side stairways, provided with hand-rails, said stairways being jointed at the ends of the balconies at the top and sliding at the bottom, so as to fold up when the frames are closed together, substantially as described.

2. The jointed braces W X, in combination with a series of telescopice frames, substantially as and for the purposes herein described.

3. The combination of the cords *m*, &c., with the drums at the top and bottom of a telescopic fire-escape, and with pulleys at the top and bottom of each story or frame, substantially in the manner described, so that the whole structure is extended by shortening the cord, as specified.

4. The combination of the cords *m*, &c., with a drum at the top of a telescopic fire-escape, whereby it is raised from the top, substantially as herein described.

5. The combination of a continuous cord, *m*, &c., passing over the top and under the bottom, and on both sides of each frame, so as to lift it equally, with a series of telescopic frames, arranged as a fire-escape, and with a drum at the bottom, for the purpose of extending the said frames upward, substantially as described.

6. The combination of the lever *q* with the top of the frame B, whereby the ratchets and pawls are re-engaged automatically as the frames close, and are left in a proper position to act when the frames are extended, substantially as described.

7. The carriage U, in combination with the extensible gangway S of a telescopic fire-escape, substantially as described.

THOS. McCLUNIE.

Witnesses:

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WENDELL R. CURTIS.