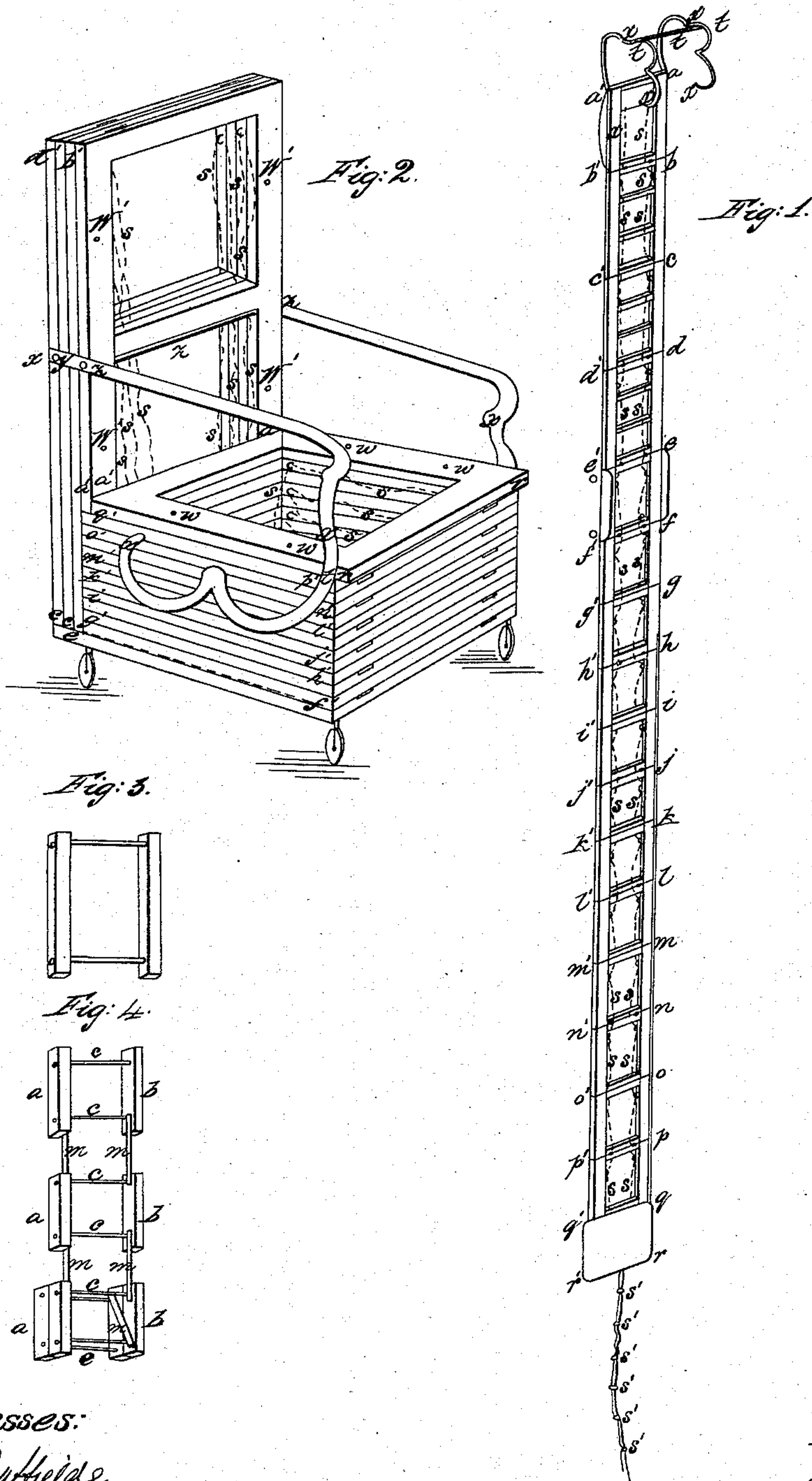


R. C. PIKE.

Fire Escape.

N^o 43,261.

Patented Jan. 21, 1864.



Witnesses:
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UNITED STATES PATENT OFFICE,

ROBERT G. PIKE, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO
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IMPROVEMENT IN FIRE-ESCAPE LADDERS.

Specification forming part of Letters Patent No. 43,261, dated June 21, 1864.

To all whom it may concern:

Be it known that I, ROBERT G. PIKE, of the city of Middletown, county of Middlesex, and State of Connecticut, have invented and made a new and useful Contrivance for Facilitating Escape from Burning Buildings, which I call the "folding-ladder chair," the same having the conveniences of a chair and ladder combined; and the following is a true and exact description thereof, reference being had to the accompanying drawings, making a part of this my specification.

My invention consists of a ladder formed in sections, proportioned and hinged together so as to be easily folded into the form of a chair or seat. These sections are made, like frames, of strong wood, bolted or otherwise firmly fastened at the corners, and for an ordinary-sized arm-chair they are about three-fourths of an inch thick, from two to three inches wide on the sides and ends, (or rung-pieces,) making a frame or section about eighteen inches square. Twenty-four of these hinged together so as to fold alternately one upon the other will make a cube or pile for a seat eighteen inches square and eighteen inches high, without casters and cushions. Eleven more of them hinged together will form a back four and one-half feet high by fifteen inches wide. United they all make a length extending over fifty-two feet. Arms are attached to the sides in such manner that they can be easily turned around to serve as hooks for holding the ladder in place on the window-sill. Ropes are attached, so adjusted along its length that they cannot become entangled, and are entirely within the chair. Casters are also placed on the bottom. Its construction will be more readily understood by reference to the drawings.

Figure I represents the ladder extended for use. Fig. II represents the same ladder on a larger scale, folded so as to form a chair or seat, but divested of its cushioned or boarded seat and back.

The same letters make the same parts in these two figures.

a b, b c, c d, &c., are the sections, hinged together at *b b', c c', d d',* and so on, so as to fold in the requisite direction.

Fig. II represents a chair, say, three feet high and fifteen inches wide on the back, fifteen inches square on the seat, and (without

the boards, cushions, or casters) nine inches high. This, with the cushions and casters, would be about the height of a common chair. The sections are three-fourths of an inch thick; twelve of them—that is, from *e* to *q* in Fig. I—make the seat as represented in Fig. II, and fourteen of them—that is, three sections of triple length and one section of double length, from *a* to *e*, in Fig. I—make the back as represented in Fig. II. This back is joined to the seat by hinging the outer section of the back to the lower section of the seat, as represented at *e* in Figs. I and II. The three back-sections extend only to the lower section of the seat, which is made one and one-half inch longer to admit of thus hanging the seat to the back. The upper section of the seat *q r* holds the board or cushion, which is fastened by screws at *w w w w*, and it is set forward three-fourths of an inch or more to give space for the front section of the back *a' a*, to which the back-board or cushion is fastened by screws at *w' w' w' w'.*

Fig. I shows the cushions at *a b* and *q r*.

In Fig. I, *e' f'* and *e f* are moldings on each side along the bottom, to relieve the plain side and cover the notch at *e*. Its outline is seen in dotted lines in Fig. II. *x x x* are the arms of the chair, crooked, as represented, so as to serve as hooks for the ladder. They are made strong and stiff, of brass or iron, and firmly held to the back by the rod *z z z*, which extends from side to side through the front section of the back at a proper height from the seat, so as to permit the arms to turn in a vertical plane when the ladder is extended. Near the back end of the arm is a slot cut half-way down to catch and hold to a pin, *y*, fastened into the outer section of the back, so as to keep the sections of the back, as well as the arm itself, in place. These two arms are braced together by a rod or strip, as represented at *t t t*, Fig. I, and a channel is cut across the under side of the top section to catch and receive this rod when shut down, and thus hold the arms firmly to the chair.

Any device or form may be given to the arms, provided they preserve the general form of a hook.

In Fig. II, *o'* is a small hasp, which holds the seat to the back. A similar hasp is on the other side. To open the chair into a ladder, we lift these hasps, raise the cushion and the

arms, and the chair is easily extended, the arms swinging round the end *a' a*, as represented in Fig. I.

The dotted lines *s s s*, &c., are the ropes fastened to the iron rod on which the arms turn; thence, extending the whole length of the ladder, passing in and out so as to cross the rungs on the hinged sides, so that when the sections are shut the rope falls on the inside out of sight. It is held in place by staples, around and through each of which it takes a turn. The ropes are tied together at the bottom and can be continued, if required, in knotted lengths, as at *s' s' s'*, &c., which may be wound on a hook inserted under the cushion. The sections *c d* and *d e* require to be channeled a little to allow these ropes to pass when folded. These ropes should be about one-fourth of an inch in diameter where two are used, but relatively larger where only one is used, the object and use of the rope being to strengthen the ladder against any latent defect in the hinges or sections, while it also serves to partially stiffen it when extended, particularly when it is drawn taut by persons standing at the foot of the ladder.

I have thus described the simplest form of my contrivance. It may be varied to suit the taste. The arrangement of the sections and mode of hinging may be varied without deviating from the principle of the invention. Thus the seat may be set on end and attached to the back, so that the open top will be open front. The seat-sections also may be cut into such lengths and hinged so as to wind up, over

and over, into a seat. The sections themselves may be made by forming the rung pieces of iron rods firmly fastened into the wooden sides, as at Fig. III, and these sections may be connected by hinges or joints formed as strips of iron with an eye in each end, through which the rungs pass, the strips being on each side within the ladder and serving to elongate it when opened as represented at Fig. IV.

a b, *a b*, *a b*, &c., are the sections, and *m m*, &c., are the hinges or strips turning on the rungs *c c c*, &c.; but all these are only variations, without changing the principle or nature of my invention, and for reasons of economy and convenience I prefer the plan described in Figs. I and II.

Now what I claim, and desire to secure by Letters Patent, is as follows:

1. Dividing a ladder into sections and joining them together by hinges or any similar joint, in such manner that the sections may be folded flat upon each other, into the form of a seat or chair, substantially as described.
2. Forming and attaching the arms together and to the chair or ladder in such a way that they may be used for hooks to sustain the ladder.
3. The application of one or two ropes to a ladder, substantially in the manner and for the purpose as described.

ROBERT G. PIKE.

Witnesses:

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