

2. Sheets, Sheet. 1.

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Fire Escape.

No. 113,502.

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Fig. 1.

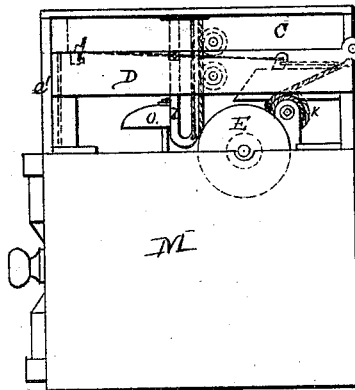
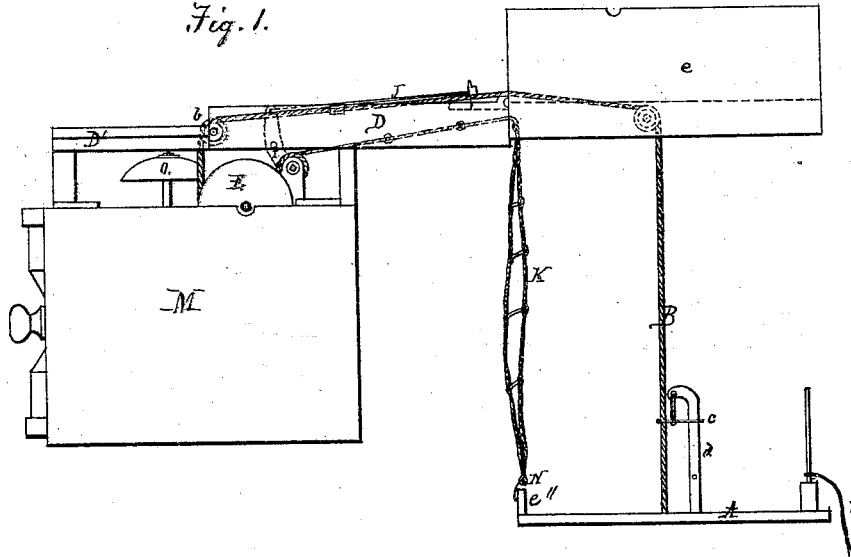


Fig. 2.

Witnesses.

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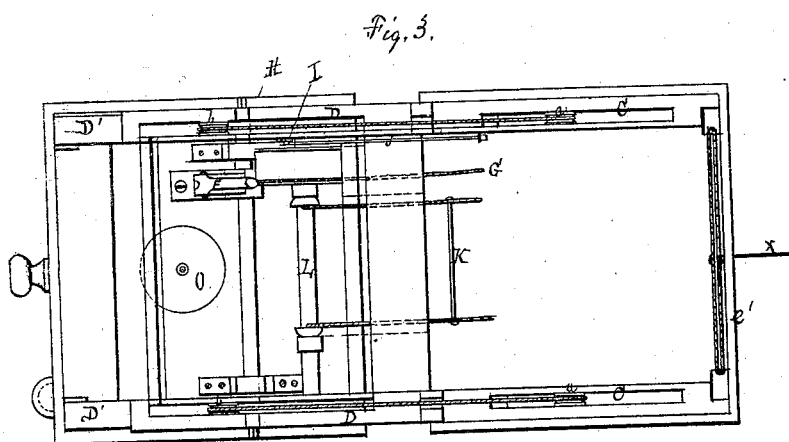
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WILLIAM GARDNER, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 113,509, dated April 11, 1871; antedated March 30, 1871.

IMPROVEMENT IN FIRE-ESCAPES.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM GARDNER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in "Fire-Escapes," of which the following is a specification.

The first part of my invention relates to the combination of the supporting beams of a fire-escape and the car and tackle which supports it in such a manner that the whole can be compactly folded together when not in use, and readily unfolded, in order to hold the car at the required distance from the wall of the building when in use.

The second part of my invention relates to the combination of a fire-escape with a safe, so that the two shall constitute one article, and so that the safe shall counterbalance the weight of the parts of the fire-escape which project from the window.

In the drawing—

Figure 1 is a side elevation when opened.

Figure 2 is a side elevation when shut, with a portion of the side removed.

Figure 3 is a plan.

A is the car, supported by ropes B B, which pass over sheaves *a a* in the beams C, through a slot in the sliding beams D, and over sheaves *b b* in the beam D' to the winding-drums E E.

The too rapid descent of the car is prevented by the brake F, which is caused to act upon the shaft which connects the winding-drums, by means of the check-rope G.

The car is held in any desired position by means of the ratchet-wheel H and pawl I, the pawl being operated by means of the rod J.

A rope-ladder, K, is attached at one end to the car, and at the other end to its drum L.

The sliding beams D are so connected to the beams D' that they can slide upon them longitudinally, so as to bring them from the position shown in fig. 2 to the position shown in fig. 1, and thereby cause their ends to project from the window.

The beams C are hinged to the ends of these sliding beams, and consequently move with them.

The beams D' are firmly secured to the upper part of the safe M, the weight of which serves to counterbalance the weight of the car and of the projecting portions of the apparatus.

O is an alarm-bell for the purpose of giving an alarm in case of fire to persons in other parts of the house.

X is a line to be thrown out to a person below to guide the car past any obstruction, such as a balcony, &c.

As the bottom of the car should be drawn up snug to the beams C the sustaining ropes are attached directly to the bottom of the car; but, in order to make the car less liable to tip, these ropes pass through

eyes in the pieces *c c*, which are free to traverse on the uprights *d d*, and are connected to the top of these uprights by a spring, so that, as the car descends, the pieces *c c* are brought by the springs to the top of the uprights, and thus the sustaining ropes act as if they were connected directly to the upper part of the uprights.

The operation of this apparatus is as follows:

When not in use the beams C are folded back upon the sliding beams D, which rest directly on the beams D'. The sustaining ropes are wound each upon its drum, and the rope-ladder and check-rope lie in the space between these sets of beams.

The bottom of the car rests upon the beams C and form a covering for the whole. The sides are covered in the apparatus shown by pieces *e e* and *e'*, secured directly to the beams C, and the piece *e'* secured to the car; but all these pieces may be secured to the car; and I prefer that construction, as thereby the car itself forms a complete cover for the whole apparatus.

When the apparatus is to be used the beams C are brought into the position shown in fig. 1 by being turned upon their hinges and by sliding out the sliding beams D. These sliding beams are then chocked to prevent the weight upon the car from operating to slide them back. The pawl I is caused to engage with the wheel H and held in its place by means of the rod J, the end of the cross-piece on that rod being inserted in a hole made to receive it, and the car is then loaded with passengers or freight. The brake is then held firmly against the shaft by means of the check-rope, and the pawl released from the wheel H. The descent of the car is then regulated by means of the brake, actuated by the check-rope.

When the car is large this check-rope is wound upon a drum attached to the car itself, and this drum is governed by a brake, so that the weight of the car itself can be either wholly or partially brought upon the brake F.

The beam D', instead of being secured to a safe, may be, of course, secured in any other suitable way.

The weight of the safe, in ordinary cases, will be sufficient to sustain the rest of the apparatus; but the safe may, of course, be secured to the building, as shown in my patent of December 17, 1867, or in any other suitable way.

I prefer to attach the rope-ladder to the car, but I also supply it with a weight, N, so that it may be used without lowering the car.

Instead of using the separate drum L for the rope-ladder it may be wound upon a drum upon the main shaft. The hinged beams may lie upon one side of the sliding beams, in which case the slot in the sliding beams for the sustaining ropes is unnecessary, as those ropes then lie on one side of the sliding beams.

I claim as my invention—

1. The combination of the stationary ways D', sliding beams D, and folding beams C, each constructed and operating as described, with the car, sustaining ropes, and winding mechanism, as above described.

2. The arrangement of the ways D', beams D and C, car, ropes, and winding mechanism with a safe, when the whole constitutes one article of furniture and is constructed as above described.

3. The uprights *d*, pieces *c c* and their springs,

in combination with the car and its sustaining ropes, as described.

4. The combination of the car A and pieces *e e e'* and *e''* with the folding beams C, sliding beams D, ways D', ropes, and winding mechanism, as and for the purpose above specified.

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Witnesses:

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