

E.O. SHEPARDSON.

FIRE EXTENSION LADDER.

117117

PATENTED JUL 18 1871

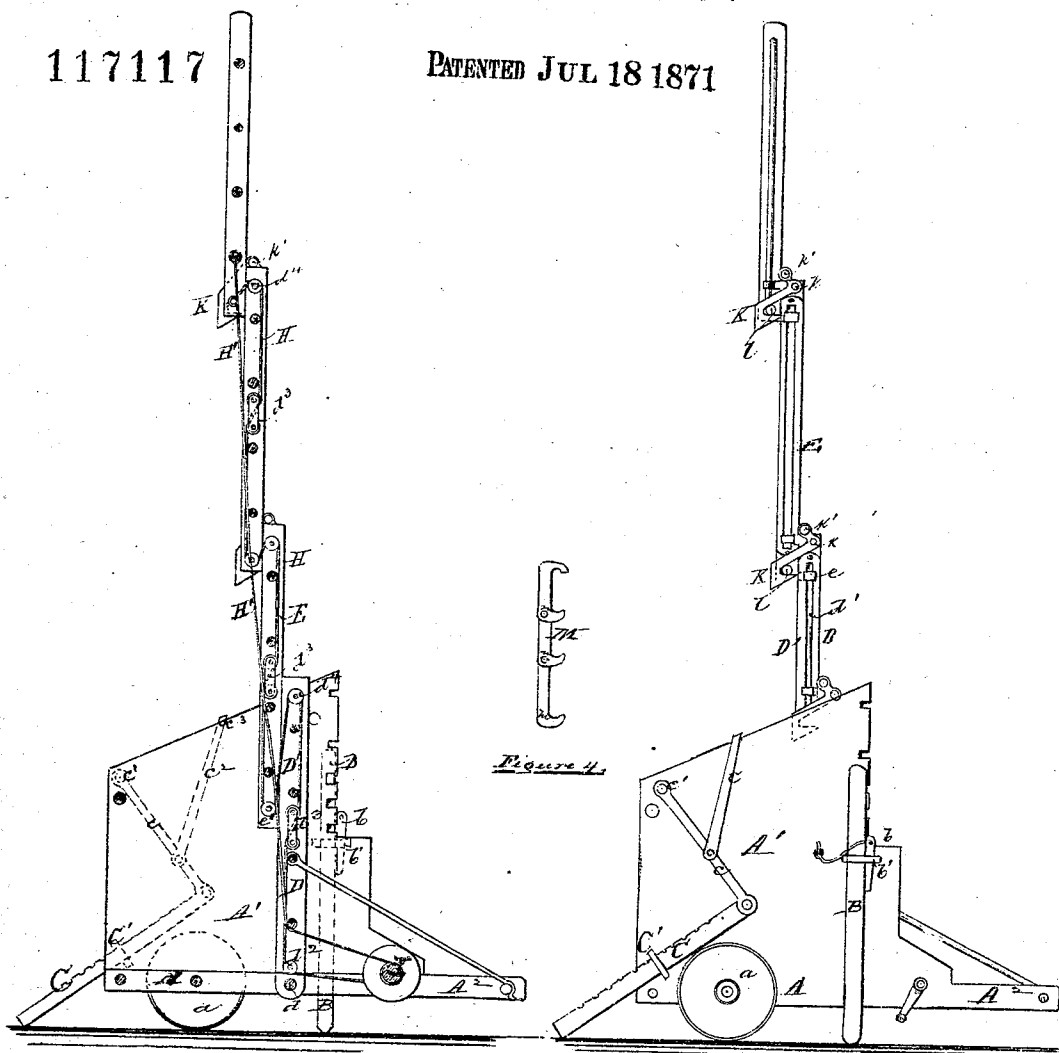


Figure 4.

Figure 1.

Figure 2.

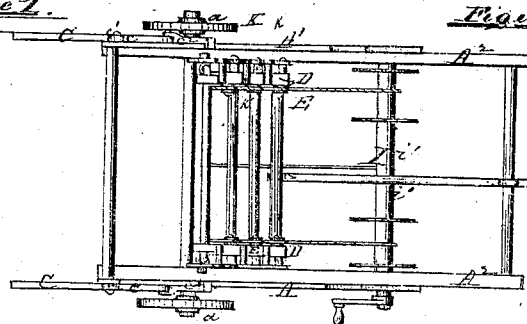


Figure 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

ELIJAH O. SHEPARDSON, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN EXTENSION LADDERS.

Specification forming part of Letters Patent No. 117,117, dated July 18, 1871; antedated July 7, 1871.

To all whom it may concern:

Be it known that I, ELIJAH O. SHEPARDSON, of St. Louis, in the county of St. Louis and State of Missouri, have made certain new and useful Improvements in Fire-Escape Ladders; and I do hereby declare the following to be a full and true description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This improvement relates to peculiar constructions of the car for supporting the other parts; and, secondly, to the construction and operation of the extension-ladder devices.

To enable those skilled herein to make and use my said improved invention, I will now more fully describe the same, referring to the accompanying drawing.

Figure 1 is a sectional elevation. Fig. 2 is a side elevation. Fig. 3 is a top plan, and Fig. 4 shows the hook to bind the ladders in position while the others are being adjusted.

The car A has two main side plates, A¹, joined and braced by suitable cross-bar and supported at forward end upon wheels *a*. In transporting, attachment is made at rear end A² and the car drawn on the wheels *a*. Arrived at the destination, the rear end of the car drops to the ground and the side guides B are forced down to steady the machine. A wedge, *b*, inserted in the staple *b'*, prevents the guide from slipping up when adjusted. The forward end of the car has levers C pivoted by bars *c* to points *c'*. The levers are notched on upper edges to prevent slipping. As these levers are projected forward through the staples C' they will support this end of the machine at any proper inclination. When not used a hook, *c'*, holds up the lever by engagement in the notch *c''* in the upper surface of the side plate A¹. The lower ladder D is pivoted at *d* to the base of the side plates A¹. This ladder is provided with side rails D', in which are guide-slots *d'*. In these slots the ladder E is guided as it is moved out immediately in front of the first ladder, said ladder E being provided with prongs *e* which enter the slots *d'*. The successive ladders are raised by means of ropes or chains H and a windlass, I. The check-rope H' is so at-

tached to the windlass as to be unwound from the latter by the same motion which winds the ropes H thereon. This rope H' playing out permits, but checks, the raising of the ladders. If the ladders are so light that more than one could be raised by the ropes and thus cause danger of falling of one ladder, then a multiple-hook, M, (see Fig. 4,) may be placed on the ladders and each part *m* is simply unhooked as its ladder part rises. This hook is placed across the top rounds of the several ladders and is secured thereto before the elevation of the ladders. The rope H passes under the sheave *d''* at the bottom of the ladder D. It is brought to the rear ladder-face by the set of double sheaves *d''*, and at the top of the ladder it passes the sheave *d''*, (going over its top,) and then under a sheave, *e'*, at the base of ladder E, and so on. The check-rope simply fastens to a round of the topmost ladder and passes down from there to the windlass-drum. In order to retain the ladders, when all extended, a latch, K, is pivoted at *k* to the side and top of each ladder. One arm thereof has a pin, *k'*, which will rest on the top of the ladder to which the latch attaches. A second arm reaches back and hooks under the pin *l* secured in ladder immediately above. This hook, therefore, firmly secures the parts against vertical displacement. The inclination of the ladder may be made such as is convenient, since the lower ladder is pivoted.

Having thus fully described my said invention, what I claim is—

1. The car A A¹ arranged with guides B and levers C and supporting the pivoted ladders D E, substantially as set forth.

2. The hooks or latches K made as herein shown and described, with a pin, *k'*, pivoted at *k* to the upper parts of the ladders and engaging with pins *l* in the ladder next above, all arranged and operating as and for the purpose set forth.

In testimony of which invention I have hereunto set my hand.

E. O. SHEPARDSON.

Witnesses:

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