

C. Eaton.

Ladder.

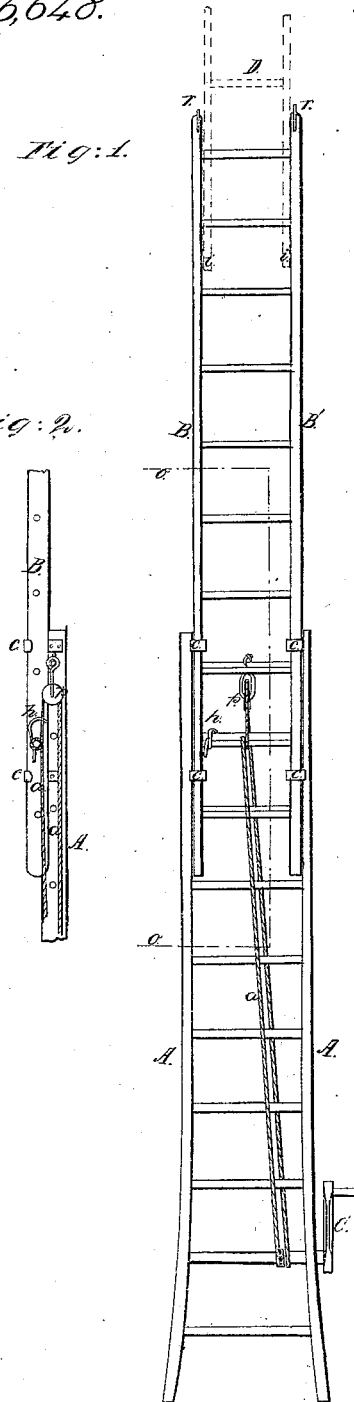
Nº 46,648.

Patented Mar. 7, 1865.

Fig: 1.

Fig: 2.

Fig: 3.



Witnesses:

*J. M. S. Doughtyborough
J. H. de Welling*

*Inventor:
Calvin Eaton*

UNITED STATES PATENT OFFICE.

CALVIN EATON, OF WEBSTER, NEW YORK.

IMPROVED EXTENSION-LADDER.

Specification forming part of Letters Patent No. 46,618, dated March 7, 1865.

To all whom it may concern:

Be it known that I, CALVIN EATON, of Webster, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Extension-Ladders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of an extension-ladder containing my invention. Fig. 2 is an inside view of that portion of the principal splice described within the red lines *o* in Fig. 1. Fig. 3 is a side view of the top of one rail, showing its disk or friction-roller *r*, and the red lines *D* representing a temporary splice.

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

This invention relates to that class called "extension-ladders;" and it consists in making the upper section narrow enough to move freely between the rails of the lower section, and in providing the top of each upper rail with a suitable friction-roller; also, in the peculiar construction of a temporary splice to be applied to the top of the upper section.

To enable others to work my invention, I will describe its construction and operation.

A and *A'* in the drawings represent the rails of the lower section; *B* and *B'*, those of the upper section; *C*, the crank of the windlass. The rails *A* and *A'* are spread at the foot, as shown in Fig. 1, so as to constitute a lateral brace to steady it while in use. The metallic clips *c* are attached rigidly to the inner face of the rails *A* and *A'*, and they are so bent as to just clasp the edge of the rails *B* and *B'* and leave room for them to slide freely between the hooks thus formed and the rounds of the lower section.

The hook *h* is hinged to a round near the lower end of the upper section, and the space between that round and the next one above it should be somewhat greater than the others, whereby when the other double rounds are in a proper relative position the hook shall have more of a draft and a less crushing

strain or tendency than it otherwise would have upon the parts. The pulley-block *p* is suspended from the upper round of the lower section, and the elevating-cord *a* is fixed to a round near the foot of the upper section, as shown in the drawings, and is passed two or three times around the windlass to prevent it from slipping.

The top of the rails *B* and *B'* is provided with friction-rollers *r*, which should be made very thin, and their periphery may be made smooth or serrated, as desired.

The red lines *D* in Figs. 1 and 3 represent the construction and manner of attaching a short section for temporary use when an extra length is required. The foot of the rails of this section are split, as seen in Fig. 3, so that they may be slipped over the two top rounds of the upper section of the ladder proper, and a strap may be buckled around the parts on each side at the point *i*; or a cord may be applied, or a small bolt may be put through the points of the split rails at *i*. The several sections may be made of any desired length.

This ladder, while folded, may be raised against a brick or stone wall, or a clapboarded building and the extension run up with perfect ease, the friction-rollers *r* effectually preventing the ends of the rails from catching. By making the upper section to fit between the rails of the lower one the ladder is rendered much stiffer and stronger and more compact and portable, also less top-heavy, than when the sections are all of a width and the rails of each made to slide upon the others.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the detachable section or extension *D*, constructed as set forth, with the main ladder, in the manner and for the purposes shown and described.

CALVIN EATON.

Witnesses:

WM. S. LOUGHBOROUGH,
ASA H. BILLINGS.