L. N. MILLENER.

Improvement in Extension Ladders.

No. 123,834. Patented Feb. 20, 1872.

Fig: 1.

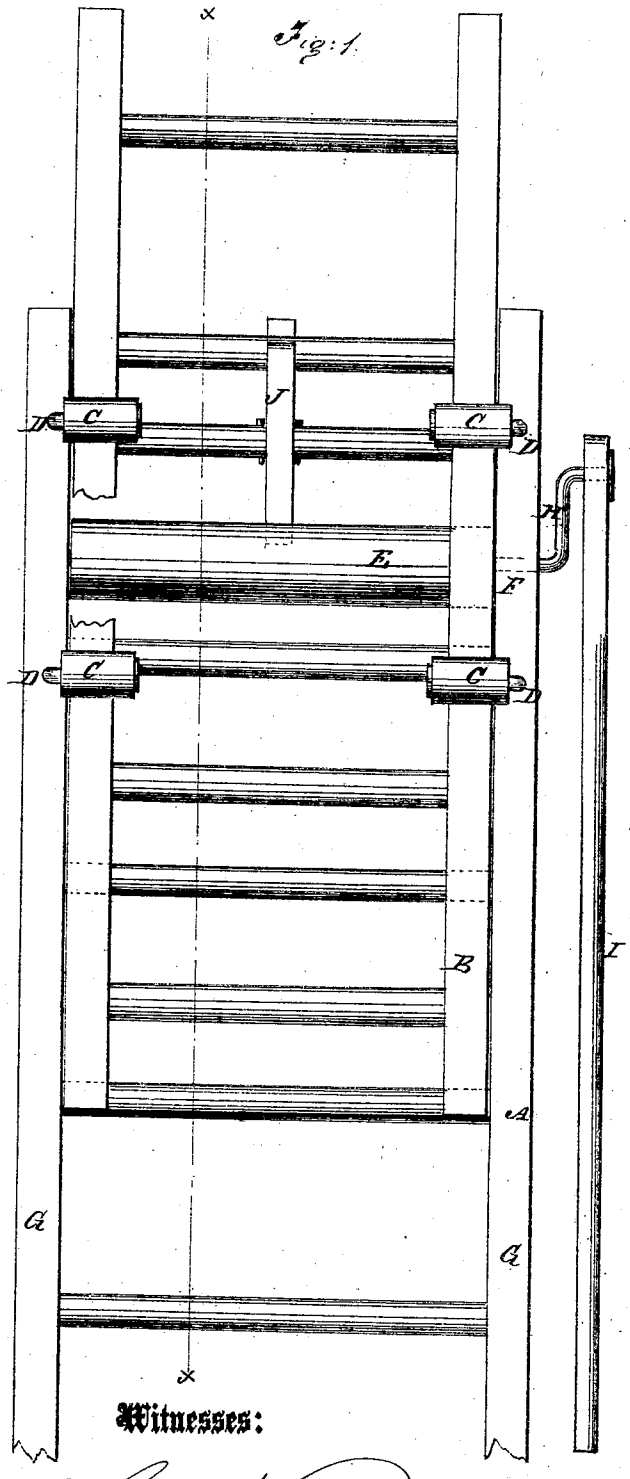
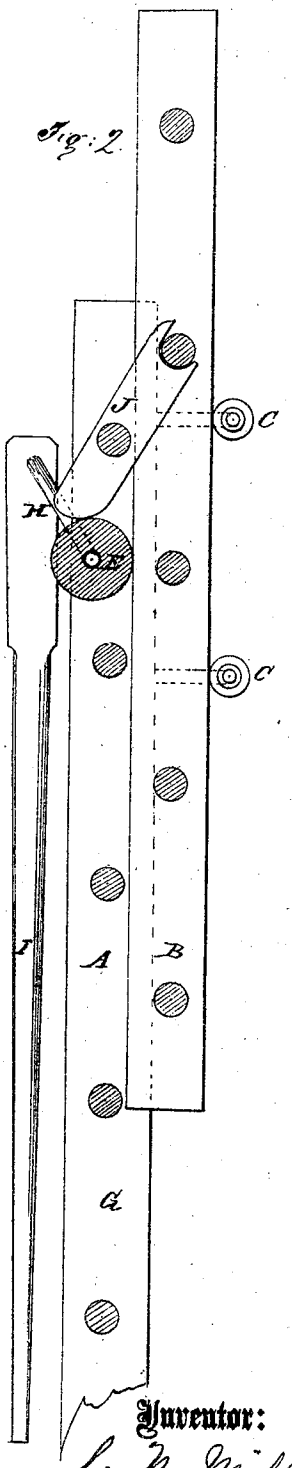


Fig: 2.



Witnesses:

Chas. Nida.

Geo. W. Mabee

Inventor:

L. N. Millener

Per Munn & Co

Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS N. MILLENER, OF ADAMS' BASIN, NEW YORK.

IMPROVEMENT IN EXTENSION LADDERS.

Specification forming part of Letters Patent No. 123,834, dated February 20, 1872.

Specification describing a new and useful Improvement in Extension Ladders, invented by LOUIS N. MILLENER, of Adams' Basin, in the county of Monroe and State of New York.

This invention relates to the construction of ladders, which may be extended in length; and it consists in the construction, arrangement, and combination of parts hereinafter described.

In the accompanying drawing, Figure 1 is a plan view of the ladder. Fig. 2 is a longitudinal section of Fig. 1 taken on the line *x x*.

Similar letters of reference indicate corresponding parts.

This extension ladder consists of two parts, A being the stationary part and B the movable part, which latter is made to slide up and down between the side pieces of the stationary part. C represents friction-rollers attached to the stationary part A by bolt-irons D. E is a a roller, which is fast on the crank-shaft F. This shaft passes through and revolves in the side pieces G G of the part A. This roller is placed between the two pairs of the friction-rollers C, and the movable part B is confined and works up and down between them, as seen in the drawing, the sides of the part B being in contact with all the rollers. H is a crank, to which may be attached a rod, I, by which the roller E may be revolved to raise or lower the part B. This, as will be seen, may be done from the ground, so that a person on the ladder may be elevated to exactly the required height by another person below. J is a hook on the top round of the stationary part A for holding the other part B in any required position. The friction-roller bolt-irons D are fastened through the sides of the part A by screw-nuts, so that there may be more or less friction on the part B. The construction and arrangement is plainly seen in the drawing.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The roller E, crank H, friction-rollers C, and crank-rod I, when the same are arranged in combination with the parts of an extension ladder, to operate as and for the purpose described.

LOUIS N. MILLENER.

Witnesses:
J. H. BAXTER,
L. C. WARD.