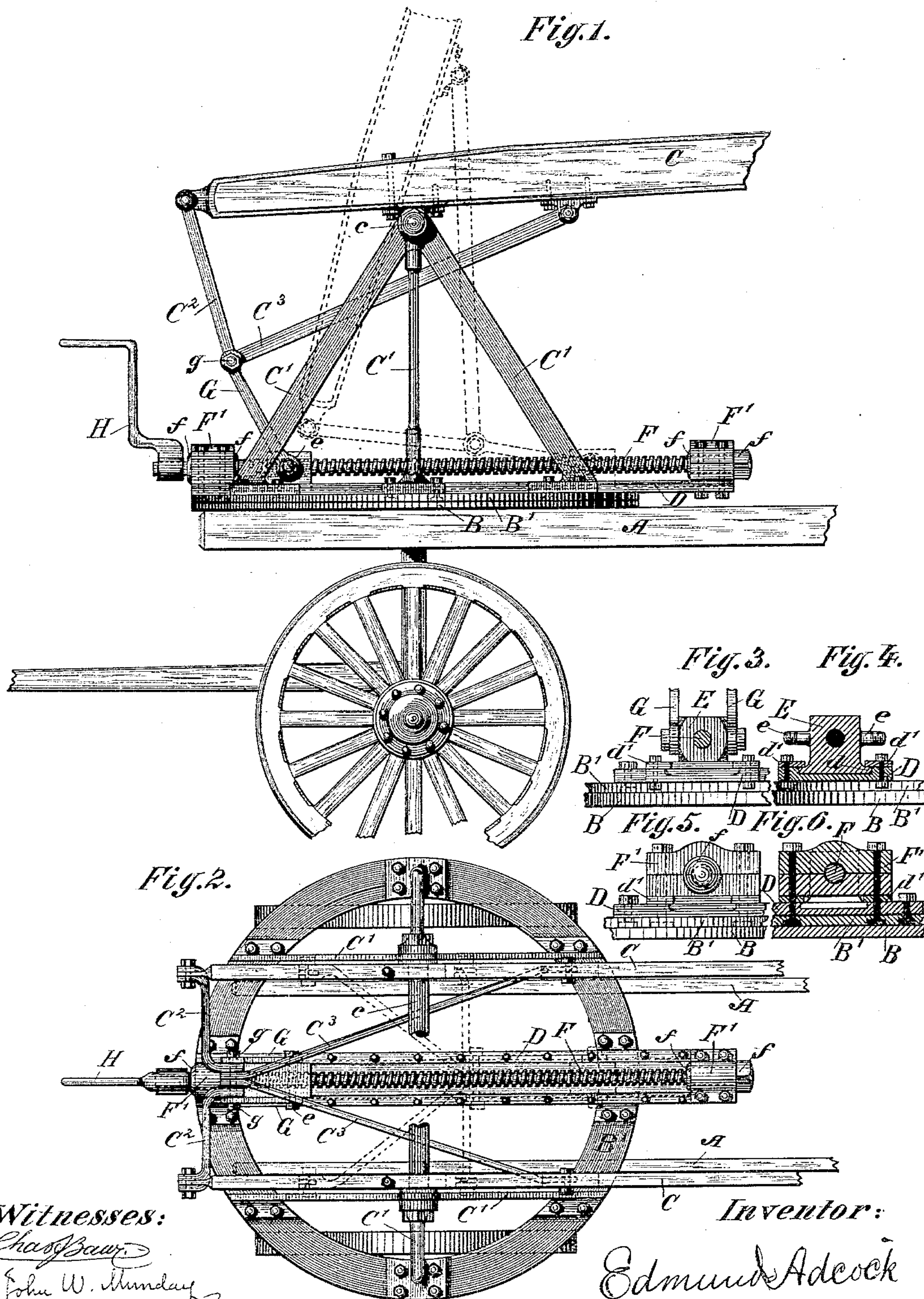


(No Model.)

E. ADCOCK.  
FIRE EXTENSION LADDER.

No. 319,047.

Patented June 2, 1885.





# UNITED STATES PATENT OFFICE.

EDMUND ADCOCK, OF CHICAGO, ILLINOIS, ASSIGNOR TO E. B. PRESTON  
AND GEORGE E. PRESTON, OF SAME PLACE.

## FIRE EXTENSION-LADDER.

SPECIFICATION forming part of Letters Patent No. 319,047, dated June 2, 1885.

Application filed April 25, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND ADCOCK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fire Extension-Ladders, of which the following is a specification.

This invention relates to extension-ladders, and more particularly to the mechanism for raising and lowering the same. These ladders as used by fire-departments are often of great length and are frequently required to sustain the weight of one or more men while in inclined positions, so that great strain is thrown upon the mechanism which elevates the ladder and holds it in its elevated or inclined position.

The object of the present invention is to provide a simple, strong, and perfectly-rigid mechanism or means for elevating, lowering, and holding the ladder in any inclined position; and to this end it consists, in connection with a screw and its traveling nut, of a slideway—like that, for example, of a lathe—bolted or secured firmly to the turn-table, and in which said traveling nut moves back and forth. The lower end of the main ladder or its brace is connected to this traveling nut by a pivoted link. By this means the slideway, which may be made perfectly stiff and rigid, receives and sustains all transverse strains, and prevents any vibration of the screw.

In the accompanying drawings, which form part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a plan or top view. Figs. 3 and 5 are end or front and rear views of the slideway and traveling nut. Fig. 4 is a cross-section through the slideway and traveling nut, and Fig. 6 is a section through the box or bearing at the end of the screw.

In said drawings, A represents the truck; B, the bed-plate or stationary ring of the turn-table, secured to the frame of the truck; and B' is the revolving ring or plate of the turn-table upon which the ladder is mounted.

C is the main ladder, and c the shaft or pivot upon which it turns and is supported.

This shaft c is journaled and supported at each end in suitable bearings on the standards C', which are secured by suitable bolts to the revolving ring B'.

The lower end of the ladder is strengthened by brace-arms C<sup>2</sup> C<sup>3</sup>.

D is the slideway plate or bar, rigidly secured by suitable bolts or otherwise to the revolving ring B' of the turn-table.

The groove or way in which the traveling nut or block E slides back and forth is preferably made by forming a groove, d, in the plate D, by rolling or otherwise, and then bolting the overlapping plates d' on each side. The slide or nut E of course conforms in cross-section to the slideway in which it travels.

F is the screw by which the slide E is moved back and forth to raise and lower the ladder. It is journaled at each end in suitable boxes or bearings, F', bolted securely to the slideway plate D, and it is provided with collars or shoulders f to hold it in place longitudinally.

The sliding nut or block E is provided with suitable trunnions or pivot-bolts, e, by which it is pivotally connected with the links G, which are pivoted at their other ends to the brace-arms C<sup>2</sup> C<sup>3</sup> at their angle by a bolt, g.

H is the crank or lever by which the screw is turned.

By this means not only is the mechanism made very strong and rigid and all transverse strains prevented from coming upon the screw, but the mechanism is adapted to operate at the best advantage for the easy and expeditious raising and lowering of the ladder; and when the ladder is elevated to any position, it is there firmly and rigidly held, as the screw and nut are prevented from vibration or movement by the slideway.

In the drawings simply the lower end of the main ladder is shown, as the invention is equally applicable to any of the customary forms or constructions of extension-ladders.

The brace-arms C<sup>2</sup> C<sup>3</sup> not only serve to strengthen the lower end of the ladder about its support or pivot, but also to throw the line of draft more nearly on a line with the direction of the screw.

I claim—

1. The combination, with a hinged or piv-  
oted ladder, of a turn-table, a slideway se-  
cured to said turn-table, a sliding block or  
5 nut traveling in said way, a screw, and a piv-  
oted link connecting said sliding block and  
ladder, substantially as specified.
2. The combination, with pivoted ladder

C, of brace-arms C<sup>2</sup> C<sup>3</sup>, turn-table ring B',  
slideway D, sliding nut or block E, screw F, 10  
and pivoted link G, substantially as specified.

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Witnesses:

JOHN W. MUNDAY,  
CHAS. J. BAUR.