



# United States Patent Office.

ARTEMAS ROGERS, OF PANESVILLE, ILLINOIS.

Letters Patent No. 93,642, dated August 10, 1869.

## IMPROVED EXTENSION-LADDER.

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

*To all whom it may concern:*

Be it known that I, ARTEMAS ROGERS, of Panesville, in the county of Lake, and State of Illinois, have invented a new and useful Improvement in Extension-Ladders; and that the following description, taken in connection with the accompanying plate of drawings, hereinafter referred to, form a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim, and desire to have secured by Letters Patent.

My invention relates to that class of ladders commonly known as extension-ladders; and consists in certain modifications of the details of the same, and a novel arrangement of mechanical devices, whereby the said ladder may be extended and lowered with the greatest facility, or adjusted at the requisite height, by means of hooks attached to the rungs or rounds of the said ladder, and a cord passing through a circular slot in the rungs aforesaid.

In the accompanying plate of drawings, which illustrates my invention, and form a part of the specification thereof—

Figure 1 is a front elevation, showing the ladder partially extended.

Figure 2 is a section taken in the line A B of fig. 1.

The said ladder is constituted in two parts or members, marked, respectively, A and B.

The lower member is provided with rungs or steps, C, of the usual form, and shafts, D D', of cylindrical form, having their bearings in the circular slots E in the standards F.

The lower shaft D is furnished with the crank G, of the usual form, by means of which it may be revolved in its bearings.

Through the centre of the shaft D', and to the right of the centre of shaft D, are cut the circular slots H and H'.

A line, I, of suitable flexibility and strength, is rove through the said slot H of the shaft D aforesaid, and made fast thereto.

It, to wit, the line aforesaid, is then led upward between the rungs C, of the lower member B, and the rungs K, of the upper member of the said ladder; thence, through the circular slot H' of shaft D'; thence, to the rear and over the roller D"; thence, to the rear of the shaft D'; and thence, downward, between the rungs C of the lower member, and the rungs K of the upper member of the said ladder, to lower round K', of the upper member aforesaid, to which it is made fast.

The movable or upper member A is of such a width as to slide easily between the standards F of the said lower member, and is secured in position by means of

the guide-plates L, which are bolted flush with the inner side of the standards F, and bent at right angles to fit the contour of the sides of the said upper member.

To the shaft D', which has its bearings at E in the standards F, are secured the hooks M, the said hooks being made to circumscribe the periphery of the said shaft, and bolted securely thereto.

The said hooks are provided with a flexible shield or shields, N, which prevents the said hooks from catching in the clothes of the operator, and also causes them to recede when the ladder is lowered, as will be hereinafter fully described.

Having thus designated the component parts of my invention, I will proceed to describe its operation.

The upper member A, so constituted, as aforesaid, to slide easily within the standards F of the said lower member, and the guide-plate L of the same, is secured in position by the hooks M, in the manner following, to wit:

The said hooks, having been secured, as aforesaid, to the loose round or roller D', are held in position nearly at right angles to the direction of the said ladder, by the force of tension exerted by the cord I, which passes through the circular slot H'.

When the said upper member of the ladder is raised, the rungs or rounds of the same press upon the under curved side of the hooks M, and cause the said hook to revolve with its axis the roller D' to such an extent as to allow the said rungs to pass upward.

When the said upper member is lowered, the said rungs press downward upon the shield N, hereinbefore described, causing the said hooks to describe a partial revolution, and to offer no obstruction to the descending upper member aforesaid.

In order to secure the said upper member in any position within the scope of its movement, the same is raised, in the manner aforesaid, until the desired height is reached. A round of the said upper member is then made to catch between the shield N and hook M. The said upper member is then slightly lowered, and the said rung rests upon and is firmly held by the hook M.

Having thus described my invention, I will set forth my claim, in the following clause:

I claim, and desire to secure by Letters Patent, the hook M, with its shield N, in combination with the rope I, and rollers D, and the roller D', with the circular slot H', arranged and constructed substantially as herein described, and for the purpose set forth.

ARTEMAS ROGERS.

Witnesses:

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