



# UNITED STATES PATENT OFFICE.

ABRAHAM S. MILLER, OF REPUBLIC, OHIO, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO FRANK P. WILBER, OF SAME PLACE.

## IMPROVEMENT IN LADDERS.

Specification forming part of Letters Patent No. **166,883**, dated August 17, 1875; application filed  
July 12, 1875.

*To all whom it may concern:*

Be it known that I, ABRAHAM S. MILLER, of Republic, in the county of Seneca and State of Ohio, have invented a certain new and Improved Ladder, of which the following is a specification:

My improved ladder is constructed with an upright pole or standard, extensible in height, and supported on a base-beam resting at one end on the ground or on a stake driven therein, and at the other end adjustable on a standard, so that the ladder may be set firm on uneven ground. An expansible brace is employed to stay the ladder in vertical position by connection with a tree, building, or other object. This brace is constructed with a grappling-hook and point to hold the ladder, and with a clamp to fix its other extremity to the tree or other object; or, in case it is to be applied to a building, the brace may be fixed thereto at its inner end by a screw, as hereinafter described. The rounds in the ladder extend on each side from the vertical standard. An adjustable platform is further provided, to be hung from the ladder-rounds by hooks.

In the accompanying drawing, Figure 1 is a perspective view of a ladder, illustrating the invention applied to a tree. The same figure shows also the modification in the brace or side, adapted for application to a building. Fig. 2 is a perspective view of a portion of the extension-brace on a larger scale.

A represents a vertical pole or standard mortised or securely fixed in any other manner to a base-beam, B, resting at one end by a stake, C, on the ground, and supported adjustably at the other end by a post, D, which is provided with any necessary number of perforations *d* to receive a pin, E, which is passed through corresponding apertures in the base-beam B, and is made to support the end of the base-beam at any required height to plumb the ladder-standard A. The base-beam may further be held to the ground by an iron hook or staple, F, if desired. A' represents an extension of the ladder-standard fixed to the main standard A by clips G, so as to avoid the necessity of using and handling more length of ladder than is needed. H may represent the wall of a house, in connection

with which the ladder is to be used. I is a brace or stay-bar, formed at one end with grappling-hooks J, adapted to embrace the ladder-standard A, and catch over either of the projecting rungs or rounds *a*. The rounds *a* may be made of either wood or iron. The other extremity of the brace or stay-bar may be fixed to the wall H by an eyebolt or screw, K, which may be quickly inserted therein, and from which the stay-bar springs freely to admit of hooking it over the ladder-rounds. For use in connection with a tree, scaffolding, pole, or other object which can conveniently be grasped, the stay-bar is preferably constructed as shown at L L', and in the separate view, Fig. 2. The two bars, L L', are fastened together by clips M, and a screw, N, serves to admit of extending the stay-bar in length, as may be needful. Another bar, O, is pivoted at *o* to the stay-bar L near one end thereof, and forms, in connection with the said stay-bar, a clamp to grasp the tree. Stud P P project from the faces of the two bars where they embrace the tree or pole T, so as to hold the stay-beam securely thereto, and a clamp for the stay-bar to the tree or pole is effected by means of a cord, Q, running through an eye or pulley, R, and held by an eccentric-catch, S, when drawn tight. The stay-bar L L' is fixed to the grappling-hooks U, and a stud or point V to the extremity of the bar L', the said bar being swiveled to the grappling-hooks to facilitate adjusting the clamp L O to any limb that may be selected. W represents a seat or platform suspended by cords X, and a double hook, Y, from any one of the ladder-rounds, as may be required. The cord may be run through a pulley attached to the hook Y or through the eye of the said hook, so as to admit of readily running the seat of the platform up or down.

This ladder is intended for all purposes for which ladders are ordinarily employed. For fruit-gathering it possesses great superiority. By means of the long brace or stay it may be adjusted to the main trunk of the tree or to any limb, and at any desired distance therefrom, so as to place the gatherer within convenient reach of the extremities of the limbs, where, as is well known, the best fruit grows,

and which are inaccessible with ladders of ordinary construction. At the same time it supports the ladder and its burden entirely free of the branches, so that they will sustain no injury. As a painter's ladder it also possesses great superiority. By attaching it to the wall by means of the base-beam and screw, as shown, one ladder can be made to do the work of several old-style ladders generally employed by painters, and, being vertical, it is fixed with all parts of its height at one and the proper distance from the wall, so that it requires no moving. Hence, the whole distance from the top of the building to the base may be painted in a very short time, the platform W being readily lowered or raised, as required. As the ladder is used in vertical position it reaches to a greater altitude than a common inclined ladder of the same length. The following is claimed as new:

1. The combination of a vertical ladder-standard and a brace or stay-beam for securing the same to any object with which it may be used, substantially as herein described.
2. The combination of the standard A, base-beam B, and adjusting-post D, substantially as set forth.
3. The combination, with the brace or stay-bar L', of the swiveled hooks U, substantially as set forth.
4. The combination of the adjustable seat or platform W, suspension-cord X, hook Y, and vertical ladder A, substantially as set forth.

ABRAHAM S. MILLER.

Witnesses:

EMMA LAPHAM,  
S. LAPHAM.