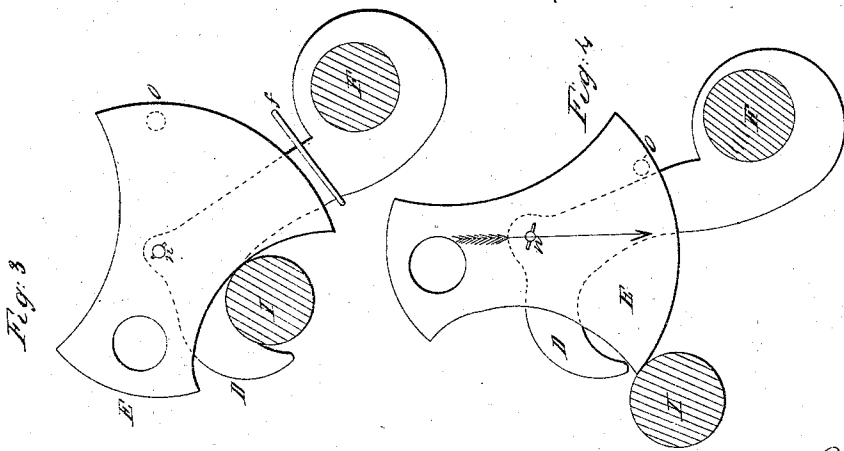
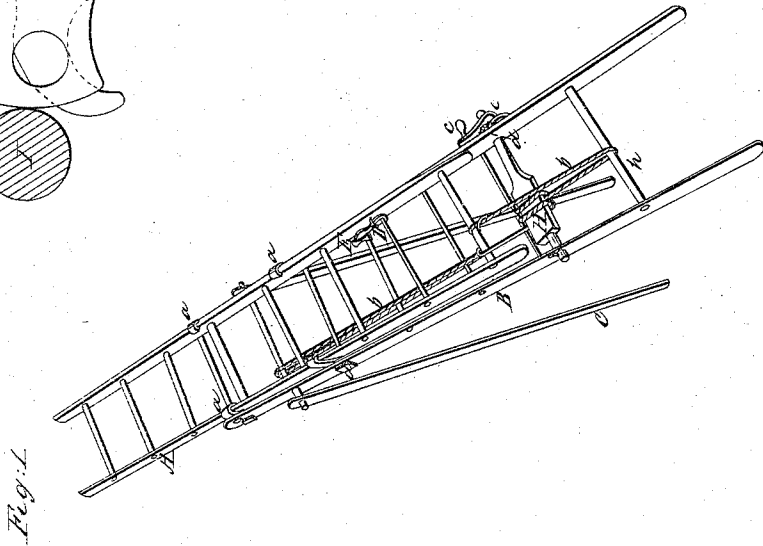
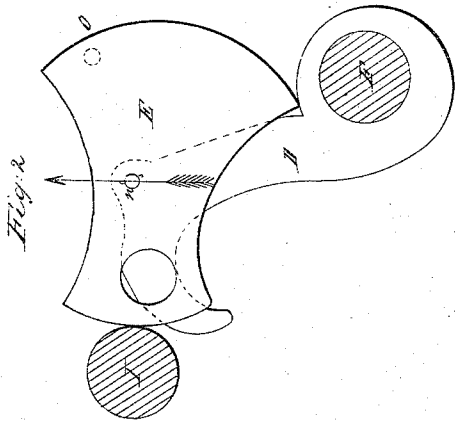


*P. M. Ackerman.*

*Extension Ladder.*

*N<sup>o</sup> 65,525.*

*Patented Jun. 11, 1867.*



*witnesses*  
*P. J. Dodge*  
*W. H. Hulborn*

*Inventor.*  
*P. M. Ackerman*  
*By W. C. Dodge*  
*Attorney*

# United States Patent Office

P. M. ACKERMAN, OF WEBSTER, NEW YORK.

Letters Patent No. 65,525, dated June 11, 1867.

## IMPROVEMENT IN LADDERS.

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, P. M. ACKERMAN, of Webster, in the county of Monroe, and State of New York, have invented certain new and useful Improvements in Extension-Ladders; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference thereon, like letters indicating like parts wherever they occur.

Figure 1 is a perspective view of my improved ladder complete.

Figures 2, 3, and 4 are side views of my improved locking device, shown in its different positions.

A and B represent two ladders of ordinary construction, except as hereinafter specified, the ladder A being made of proper width to fit between the side-pieces of the ladder B, to which it is clamped by means of the metal hooks *a*, as shown in fig. 1, the hooks being secured rigidly to the ladder B, and the ladder A sliding loosely up and down, as desired. Next to the lower round of the ladder B is constructed, to operate a windlass, for the purpose of raising or lowering the extension portion A, and has a crank, *c*, attached thereto, for operating it. A ratchet-wheel, *d*, and a pawl, *e*, are secured to it, as represented in fig. 1, to prevent it from unwinding, when it is desired to hold the ladder A in place. This windlass H is made flat and wide throughout most of its length, as shown; and it is around this portion that the rope *b* is wound, said rope passing from thence down around the lower round *h* of ladder B, and thence up to the lower round of ladder A, where it is securely fastened, the other portion of the rope passing from the windlass up and over next to the top round of ladder B, and thence down to the lower round of A, where that end is also secured. By making the windlass flat, as represented, it is obvious that the rope will be much less liable to slip on it, and hence needs to be wound a less number of times around it, thus taking less of the rope, and at the same time will move the ladder much further at each revolution. Care must be taken to so proportion the width of the windlass to the spaces between the rounds of ladder B, and to so adjust the rope thereon that the flat surface of the windlass shall be in the same plane as the side bars, when opposite the rounds of B, so as to rotate without coming in contact with said rounds. To the sliding-ladder A I attach a safety-hook, D, which is so arranged as to lock on to the rounds of ladder B, and thus prevent the extension part from slipping. At the same time this hook is so arranged as to permit the ladder A to be elevated or lowered at will, which is done as follows:

I construct the hook D of the form shown in the drawings, and pivot it upon one of the rounds F of the ladder A, I representing one of the rounds of the ladder B. Near the upper end of the hook D is pivoted a button or tumbler, E, one end of which is made heavier than the other, as represented in the drawings. A pin, *o*, is inserted in this heavier portion, in such a position as to rest on the upper edge of the hook when the heavy end drops down, as shown in fig. 4. This tumbler is made of such a length that its lighter end will protrude slightly beyond the point of the hook, as shown in figs. 2 and 3. Now, when the ladder A is slid up the lighter end of the tumbler E will strike against the round I of ladder B, and thus raise the front end of the hook, as shown in fig. 2, and thus lift the hook and pass it over the round I. If the movement of the ladder A be stopped as soon as the point of the hook D has passed the round I, the hook will drop down and catch over the round, as shown in fig. 2, and thus lock the two ladders securely together. When it is desired to lower the ladder A, it should first be raised slightly, just enough to let the heavy end of the tumbler E drop down to the position shown in fig. 4, when it will serve to prevent the hook from catching on the round, and thus enable the ladder A to be lowered to any desired extent. A staple, *f*, serves to keep the hook D in position, and prevent it from falling down or turning over back, the staple being made of proper length to give the hook the necessary play. *c* represents braces, pivoted at their upper ends to the lower ladder B, which may be used or not, as desired. These are more especially useful when the ladder is to be used as a fruit-ladder, or for any similar purpose. If desired, the ladder A may be detached, and each part then used as an ordinary farm-ladder; or A may be kept for use as an ordinary farm-ladder, and B, with the braces attached, kept and used as a fruit-ladder, the two being united when desired.

Having thus described my invention, what I claim, is—

1. The combination of the ladders A and B, the latter being provided with the flat windlass H, and having the rope *b* arranged as shown and described.

2. The hook D, having the weighted tumbler E, provided with the pin or stop *o* pivoted to it, and arranged to strike the rounds of the ladder, and thereby raise the hook and let it pass the round both in ascending and descending, substantially as described.

3. In combination with the ladders A and B, and the flat windlass H, I claim the ratchet *d* and pawl *e*, arranged as set forth.

Witnesses:

L. B. KING,  
R. L. SWIFT.

P. M. ACKERMAN.