

No. 796,915.

PATENTED AUG. 8, 1905.

W. L. KETCHUM.
LADDER.

APPLICATION FILED DEC. 13, 1904.

Fig. 1

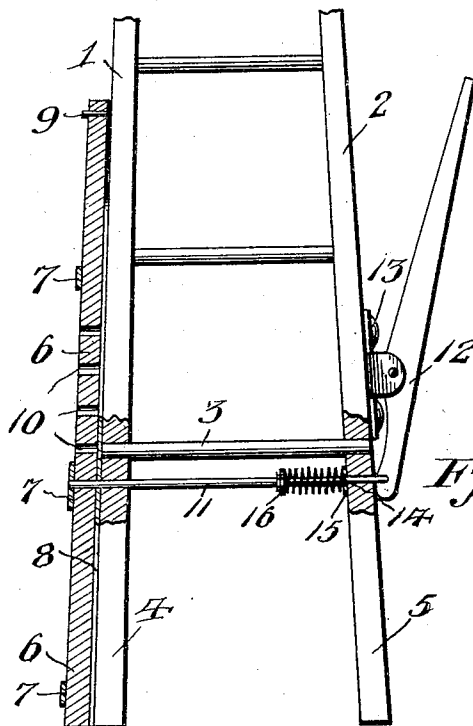
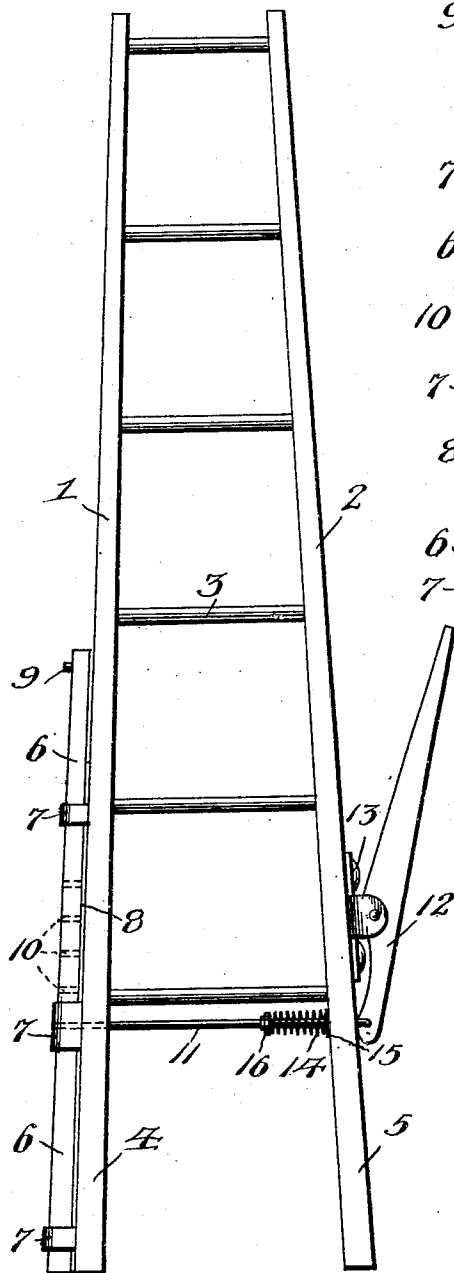


Fig. 2.

Fig. 3.

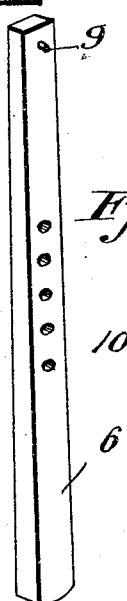
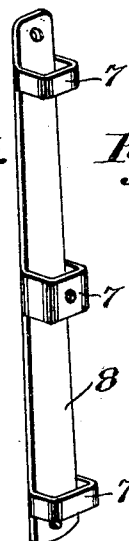


Fig. 4.



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WILLIAM LEON KETCHUM, OF CLYDE, NEW YORK, ASSIGNOR OF THREE-FOURTHS TO JAMES M. PITKIN, JR., PATRICK S. WHITE, AND EDWARD F. COWLES, OF NEWARK, NEW YORK.

LADDER.

No. 796,915.

Specification of Letters Patent.

Patented Aug. 8, 1905.

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To all whom it may concern:

Be it known that I, WILLIAM LEON KETCHUM, a citizen of the United States, residing at Clyde, in the county of Wayne and State of New York, have invented new and useful Improvements in Ladders, of which the following is a specification.

This invention relates to improvements in ladders, and particularly to an extension-leg for step-ladders and means for adjustably securing the leg to the ladder-frame.

In picking apples upon hillsides and performing other work where the use of a ladder is required and where the ground or other surface on which the ladder rests is uneven or inclined some means must be employed to compensate for the shortness of the ladder at one side in order that the ladder may be securely supported in the desired position. This is usually accomplished by placing a block, stone, or other object between the supporting-surface and leg on the short side, a method of supplementing the length which is not always secure and is inconvenient in many ways.

The object of my invention is to provide an extensible leg or section which may be instantly adjusted to overcome the above-mentioned objection and which may be readily applied to ladders already in use.

Figure 1 is a view in elevation of a ladder equipped with my invention. Fig. 2 is an enlarged elevation view of the lower end of the ladder, the extension-leg and coacting parts appearing in vertical section. Fig. 3 is a detail view of the extension-leg detached. Fig. 4 is a similar view of the bracket-plate which carries the extensible leg.

Referring now more particularly to the drawings, the numerals 1 and 2 represent the side pieces or bars of an ordinary ladder, which are connected, as usual, by the intermediate rounds 3, the bars 1 and 2 being extended at the lower end of the ladder to form supporting-legs 4 and 5, as in ordinary constructions of this kind.

In accordance with my invention I adjustably mount upon one of the side bars of the ladder structure an extension-leg which may be projected beyond the lower supporting-leg of the bar to increase or supplement the length thereof, so that the ladder may stand upright upon an inclined surface. The extension-leg 6 is shown in the present instance applied to

the lower end of the bar 1 and mounted to slide longitudinally in keepers or guide-pieces 7, carried by a bracket-plate 8, suitably secured to the outer surface of said bar. Preferably three of such guide-pieces, in the form of stirrups or loops, are provided and arranged at each end and centrally upon the bracket-plate 8, and the extension-leg 6 is made of greater length than said plate to project a desired distance below the leg 4 and is provided at its upper end with a stop-pin or projection 9, which is adapted to engage the upper stirrup or guide-piece 7 and limit the downward movement of the extension-leg. This stop-pin may be detachably fitted in a socket in the extension-leg, so that the latter may be conveniently detached from the bracket when occasion requires.

The leg 6 is provided with a series of equidistantly-spaced openings 10, adapted to be engaged by the free end of a locking rod or bolt 11, which latter is mounted to slide transversely of the ladder-frame through openings formed in the legs 4 and 5, as clearly shown in Fig. 2, and is pivotally connected at its opposite end to an operating-lever 12, fulcrumed upon a suitable securing-bracket 13, secured to the outer side of the bar 2. The latch-bolt 11 is normally held projected by a coiled or spiral expansion-spring 14, which surrounds the same between a plate or washer 15, bearing against the inner side of the leg 5, and the washer or head 16, fixedly or adjustably mounted upon the rod 11, and is adapted to be retracted to withdraw its locking end from engagement with the registering opening in the legs 6 by means of the operating-lever 12, as will be readily understood.

By mounting the extensible leg 6 in the manner above described upon the side bar 1 it will be seen that upon retracting the latch-bolt 11 the leg 6 will be released, so that it may be adjusted downward to extend any required distance within its limit of adjustment below the ladder-leg 4 and locked in such adjusted position by releasing the lever and permitting the bolt to engage another one of the openings 10. Hence when the ladder is to be rested upon an uneven or inclined surface and the leg 4 cannot be brought into engagement with the same to support the ladder in a vertical or erect position the shortness of the leg 4 may be compensated for by adjusting the exten-

sion-leg 6 downwardly to the required extent. By simply reversing the position of the ladder, so that the bar 1 will be on the right or left hand side thereof, the leg 6 may be brought into position to compensate for the shortness of the ladder on either side thereof.

It will be observed that when the extension-leg 6 is adjusted for use it will be firmly held in position and securely support the ladder, and that as it may be instantly adjusted for use it affords a convenient means for overcoming the objections incident to the employment of blocks, stones, or other devices commonly employed for supporting the ladder on its short side. The extension-leg and its supporting and locking means may be conveniently applied to ladders already in use, as no change beyond boring openings in the legs 4 and 5 for the passage of a locking-bolt 11 is required to mount it upon any ordinary ladder.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be understood without a further extended description.

Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A ladder provided upon one of its side bars with a sliding extensible leg, operating means on the other side bar of the ladder, and a locking-bolt slidable in said bars and connected at one end to said operating means and having its opposite end arranged to engage the extensible leg to lock the same in adjusted position.

2. In combination, a ladder, an extensible leg on one of the side bars of the ladder, a locking device to secure the extensible leg in adjusted position, and controlling means for

said locking device supported on the other side bar of the ladder.

3. In combination, a ladder, a bracket-plate secured to one of the side bars of the ladder and provided with spaced guides, an extensible leg slidable in said guides, a locking device to secure the extensible leg in adjusted position, and controlling means for said locking device supported on the other side bar of the ladder.

4. In combination, a ladder, an extensible leg slidably mounted upon one of the side bars of the ladder, said leg having a series of locking-seats, a bolt slidable in said bar in a plane transverse to the ladder-frame and adapted to engage said seats, a spring for projecting said bolt, and an operating device on the other side bar of the ladder for operating the bolt.

5. A ladder provided upon one of its side bars with a sliding extensible leg and upon its other side bar with a bracket, a spring-actuating bolt slidable in the side bars of the ladder and having a locking end to engage the leg and hold it in adjusted position, and an operating-lever pivoted to said bracket and the other end of the bolt substantially as described.

6. In combination, a ladder, an extensible leg slidably mounted upon one of the side bars of the ladder, said leg having a series of locking-seats, a bolt slidable in both side bars of the ladder and having a locking end to engage said seats, a head on the bolt between the said side bars, a spring surrounding the bolt between said head and the companion side bar to that on which the leg is mounted and acting on the head to hold the bolt projected, and a lever on said companion side bar for retracting the bolt.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM LEON KETCHUM.

Witnesses:

M. A. STOW,

IRA CONVERSE.