

(No Model.)

V. HOLMQVIST.
EXTENSION LADDER.

No. 475,279.

Patented May 17, 1892.

FIG. 1.

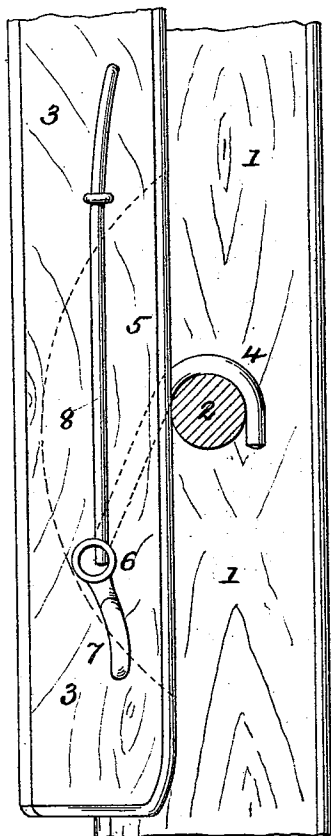


FIG. 2.

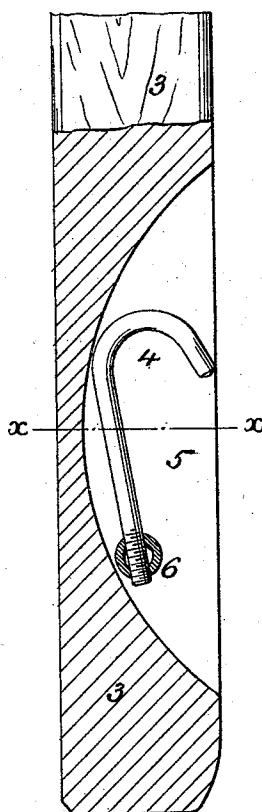
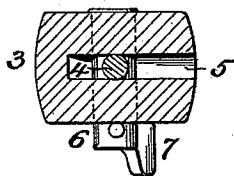


FIG. 3.



ATTEST:

Geo. H. Arthur

W. H. Holmes

INVENTOR:

Victor Holmqvist,

by

Robert J. Burns
Attorney.

UNITED STATES PATENT OFFICE.

VICTOR HOLMQVIST, OF CHICAGO, ILLINOIS.

EXTENSION-LADDER.

SPECIFICATION forming part of Letters Patent No. 475,279, dated May 17, 1892.

Application filed November 8, 1890. Serial No. 370,803. (No model.)

To all whom it may concern:

Be it known that I, VICTOR HOLMQVIST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Extension-Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that type of holding devices for extension-ladders that forms the subject-matter of Letters Patent No. 427,992; issued to me May 13, 1890, for improvement in extension-ladders; and the present improvement has for its objects to provide a cheap and effective arrangement of the holding-hooks embodying the features of the housing of the hooks, so as to avoid the accidental bending of the same in use, a strong and durable pivotal attachment of said hooks to the side bars or stiles of the adjustable ladder-section, and simple and convenient means for operating said hooks. I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is detail vertical section of an extension-ladder illustrating my present invention; Fig. 2, a detail vertical section through the side bar or stile of the movable ladder section; Fig. 3, a cross-section of the same at line *x x*.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the side bar or stile of the lower or main ladder-section, 2 one of the cross rods or rounds of the same, and 3 the side bar of the upper or movable ladder-section.

In the present invention the hook 4, that engages the cross-rounds 2, is pivoted within a vertical recess 5 in the side bar of the movable ladder-section by means of a cross-rod or trunnion 6, that has bearing in the walls of the recess 5, the straight shank of the hook being screw-threaded, as shown, and screwing into said trunnion 6, as shown, so as to form an attachment. Other means of attachment may be substituted without departing from the spirit of my invention.

The end of the trunnion 6 projects from the inside of the stile 3 and is provided with a thumb-projection 7, by which the holding-hook is manipulated, 8 being a spring attached to the inside of the stile or side bar 3, with its free end engaging in a suitable socket in the trunnion 6, so as to cause the holding-hook in its normal condition to lay wholly within the recess 5 free from any injury during transportation, &c. In use suitable bushings may be inserted in the side bars 3 to form bearings for the trunnion 6, if deemed necessary, without departing from the spirit of my invention.

The vertical recess 5 is preferably of a segmental shape, as shown, so as to be capable of ready formation by means of a circular saw, and in the present invention it is very material that the recess does not extend clear through the ladder-stile, so that a closed-top recess will be formed to prevent the ready entrance of moisture, dust, &c., to the holding-hook, and at the same time leave the stile at the recess-point of ample strength to resist strain in use.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in an extension-ladder, of the adjustable ladder-section provided with a vertical closed-top recess in its side bar or stile and a holding-hook located in said recess and having a cross-rod or trunnion by which it is pivoted in said side bar or stile, substantially as set forth.

2. The combination, in an extension-ladder, of the adjustable ladder-section provided with a vertical recess in its side bar or stile, a holding-hook pivotally arranged in said recess, a pivotal cross-rod or trunnion to which the shank of the holding-hook is secured, and a spring attached to the side of the ladder-stile, with its free end engaging a socket in the trunnion, substantially as set forth.

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

VICTOR HOLMQVIST.

Witnesses:

ROBERT BURNS,
GEO. H. ARTHUR.