

F. A. LEHMANN.
LADDER ATTACHMENT.
APPLICATION FILED NOV. 16, 1918.

1,346,831.

Patented July 20, 1920.

Fig. 1.

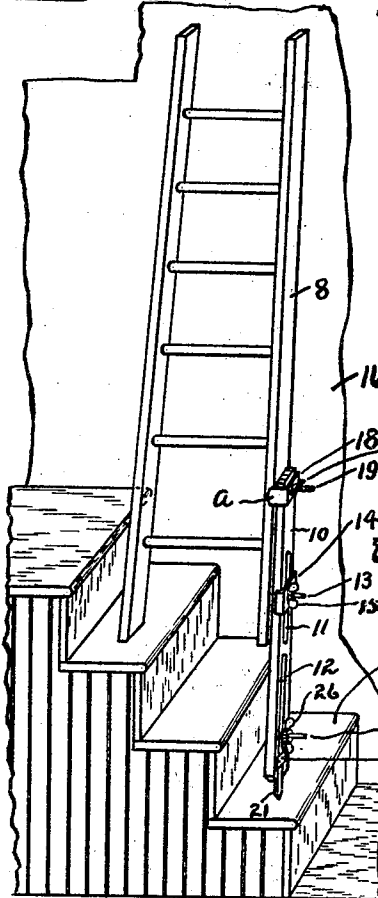


Fig. 2. Fig. 3. Fig. 4. Fig. 5.

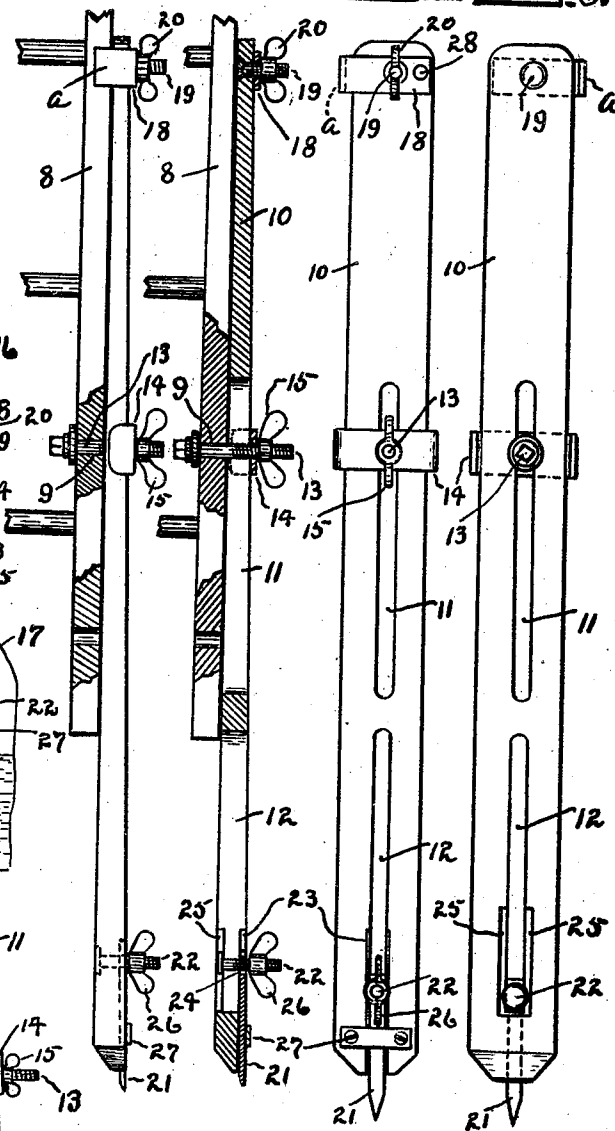


Fig. 6.

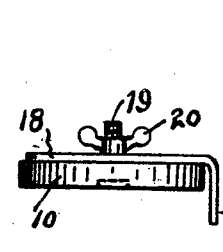
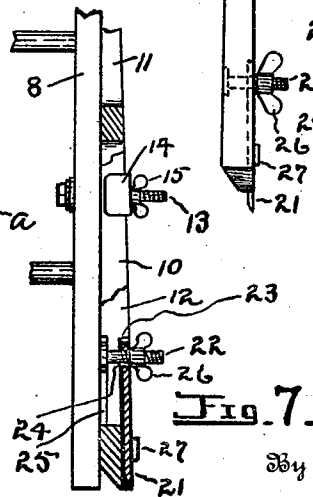


Fig. 7.



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LADDER ATTACHMENT.

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To all whom it may concern:

Be it known that I, FERDINAND A. LEHMANN, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Ladder Attachments, of which the following is a specification.

This invention relates to an attachment for supporting a ladder or step-ladder when used upon inclines, so that the rungs or steps may be maintained in a horizontal position, and has for its object, broadly, to provide an appliance for this purpose consisting of few and simple parts so that it may be economically manufactured, will be convenient in use and durable in wear. The invention includes an attachment which may be secured to the ladder to remain permanently thereon and will be useful when the support for the ladder is inclined, as upon stairways or the like, and which, on account of certain adjustable features, will permit use of the ladder where the support is horizontal.

The invention consists of the novel construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the accompanying drawing, wherein,—

Figure 1 is a perspective view showing the device applied to a ladder, the inclined support being a stairway. Fig. 2 shows a broken away part of a ladder with the device mounted thereon. Fig. 3 is a view similar to that shown in Fig. 2, the device being in longitudinal section. Fig. 4 shows the outer side of the device, and Fig. 5 is a view of the inner side of the same. Fig. 6 is an end view of the device. Fig. 7 is a broken away view, partly in section, showing the lower part of the device and part of a ladder.

Referring now to the drawing for a more particular description, numeral 8 indicates a stile or side member of a ladder, provided adjacent to its lower end, as best shown in Figs. 2 and 3, with an aperture 9. I provide an extensible ladder foot 10 preferably tapered toward its upper end, and having slots 11 and 12 formed therein to open on its sides, these slots being disposed in alinement.

A single slot may be substituted for the slots 11 and 12, if desired, but the two slots, as shown, are preferred, since it provides a stronger construction, and permits the use of wood or similar material, which, when

secured to the ladder, will not add appreciably to its weight.

At 13 is indicated a bolt which is disposed in the aperture 9 of member 8, and it will be understood that the foot may be mounted upon the ladder by means of this bolt and may be adjusted longitudinally of the ladder, since said bolt may be disposed in any part of the slots 11 or 12. The bolt 13 carries a yoke 14 for a seating upon the outer side and edges of the foot and by means of a wing-nut 15 the foot may be pressed firmly against the side of member 8, and when the ladder is thereafter used, leaning against a wall 16 while supported upon a stairway 17, said ladder will adequately sustain any weight incident to its use, the stresses being sustained, in part, by the pressure occasioned by use of the wing-nut 15 and, in part, by reason of the upwardly convergent walls of the foot.

Numeral 18 indicates an L-shaped bracket pivotally mounted upon the upper end of the foot by means of the bolt 19, the head of the bolt preferably being of disk-form and being countersunk in the inner side of the foot; and by means of the wing-nut 20 the bracket may be pressed against the side of the foot; and it will be understood that when a ladder is in use and is disposed inclinedly to the wall 17, the wing *a* of the bracket 18 will bear upon the edge of said member 8 in a manner to prevent any swinging movement of the foot on the bolt 13 in one direction, and this is the function to be discharged by said bracket.

It will be noted that the bracket 18 may be swung substantially 180 degrees so that its wing *a* may engage either edge of member 8, as may be required, this being of great advantage when it is necessary to support the ladder upon a stairway with its stiles disposed inclinedly for engaging either of the opposed, vertical walls of a hallway. It is obvious that, by removing the wing-nut 20, the bracket 18 may be swung in an arc of 180 degrees, its wing *a* being moved from its engagement with one edge of member 8 and moved into engagement with the opposite edge of said member 8, and by this simple adjustment, the device may be used as a support upon a stairway or the like in instances when it is required to incline the ladder against either of the opposed walls, as mentioned.

In order that the device while in use will

be prevented from sliding on ice or other smooth surfaces, I provide an impaling-member or tooth 21, adapted to be adjusted longitudinally of the foot under control of a bolt 22 while disposed in a recess 23, said recess being formed in line with the slots 11 and 12 and opening on the lower end of the foot, the bolt 22 engaging in the slot 12 and in an aperture 24 formed in the tooth, near its inner end, the head of the bolt preferably being of disk-form and seated in a recess 25, opening on the slot 12, as best shown in Fig. 5.

As thus described the tooth may be readily adjusted longitudinally of the foot so that its lower end will not protrude beyond the lower end of the foot, as shown in Fig. 7, or it may be so disposed that it will project a suitable distance, as plainly shown in the drawing, said tooth sliding in the recess 23, and the bolt sliding in the recess 25, the wing-nut 26 operating to press the tooth against the foot, when adjusted, to prevent any movement thereof. Numeral 27 indicates a holder or plate which is secured upon the lower end of the foot to maintain the lower part of the tooth in its groove.

The L-shaped bracket 18 operates to maintain the foot substantially parallel with member 8, during use of the ladder. At 28, best shown in Fig. 4, is indicated an aperture provided for said bracket, this being convenient in connection with the bolt 19, so that the bracket may be adjusted transversely of the foot, since the stiles of ladders as well as the struts may have different widths.

It will be understood that changes in form, size, proportion and minor details may be made in accordance with the appended claims, as may be found to be of advantage. While shown and described in connection with ladders, the device may, of course, be used for other purposes. It will be noted

that the device may be readily applied and adjusted so that ladders may be used where the base support has greater or lesser inclinations. Also it will be seen that the pressure of the foot upon the side of the stile of a ladder, occasioned by the wing-nut 15 may be quite limited, since the foot is provided with the pair of opposed, upwardly convergent walls, which, in combination with the bolt 13 and parts carried thereby, operates effectively to prevent any movement of the foot longitudinally of the ladder.

What I claim as my invention and desire to secure by Letters Patent is,—

1. In combination with a ladder, an extensible ladder foot, means whereby said foot may be adjusted longitudinally on said ladder, a bracket carried by the upper end of said foot and having a right angularly bent wing adapted to engage the ladder to prevent the rotation of the foot thereabout, said bracket being rotatable through 180 degrees to permit the wing to engage the opposite edge of the ladder, and means to hold the bracket in either position of adjustment.

2. In combination with a ladder, an extensible foot adjustably carried thereby and having a longitudinal slot therein with recesses in the lower portions of the walls of said slot, a tooth adjustable in one of said recesses, a bolt having a flat head movable longitudinally in the other of said recesses, the bolt passing through said slot and engaging said tooth, a nut on the bolt for tightening the same to hold the tooth in any position of adjustment, and a strap over the recess to confine the tooth in place.

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

FERDINAND A. LEHMANN.

Witnesses:

HIRAM A. STURGES,
C. A. WILBUR.