

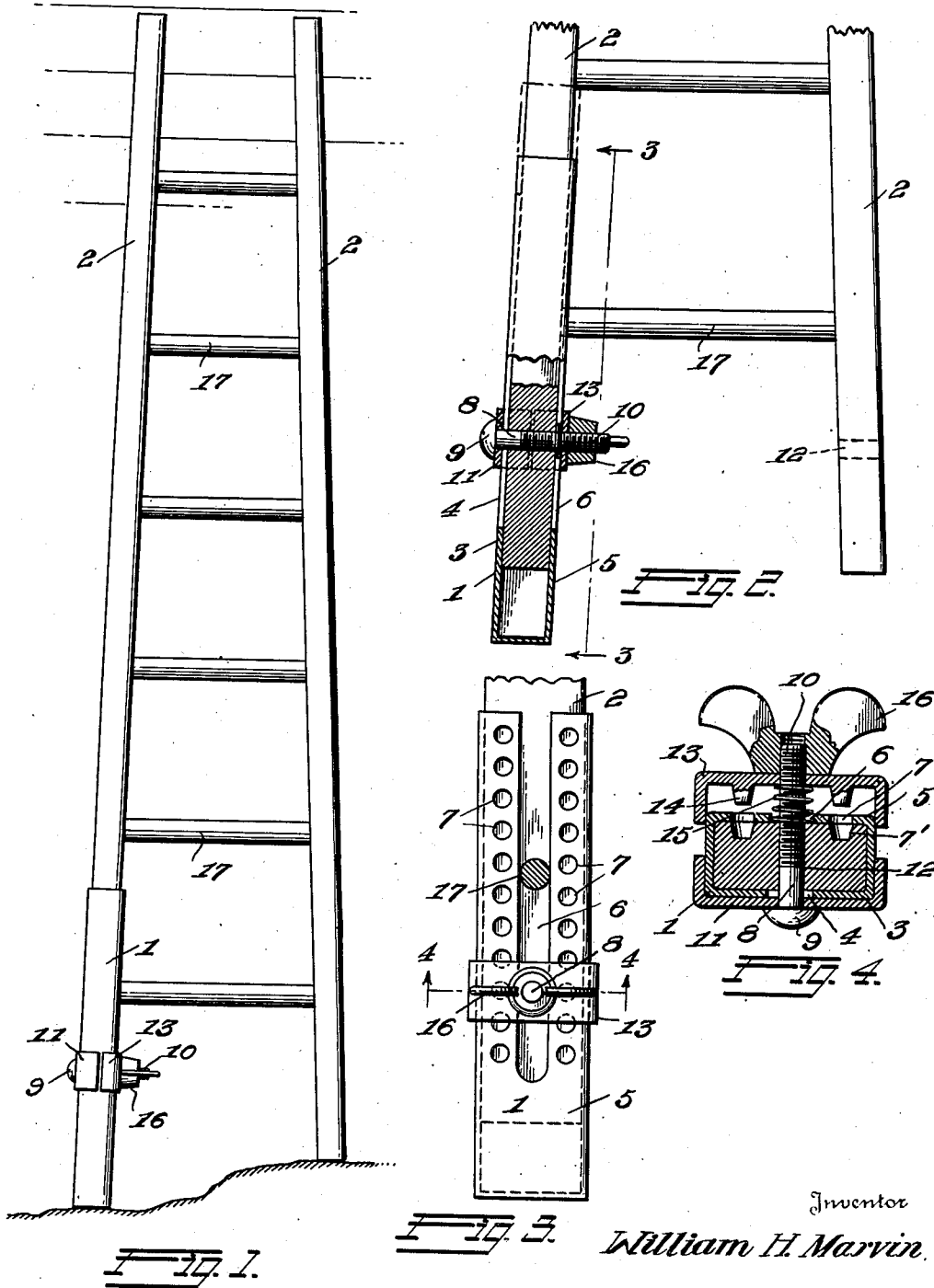
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FOOT EXTENSION BRACKET FOR LADDERS

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FOOT EXTENSION BRACKET FOR LADDERS

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3 Claims. (Cl. 228—63)

This invention is directed to a foot extension bracket for ladders, whereby the ladder may be adjustably accommodated to irregular ground supports, to thereby maintain a firm upright stability irrespective of such irregularity.

A primary object of the invention is the provision of a ladder foot extension bracket designed to be removably secured to the foot of one or the other ladder uprights, with the extension bracket longitudinally adjustable lengthwise of and relative to the upright, to thereby temporarily increase the length of such upright to a degree to compensate for any irregularity on the surface on which the ladder is resting.

A further object of the invention is the provision of means whereby the adjustability of the bracket provides for definite increments of bracket movement in each adjustment, and further provides and insures a positive lock for the bracket relative to the ladder upright in any position of adjustment.

A further object of the invention is the provision of a bracket of the type defined, wherein the bracket proper and its locking means are held to the ladder through the provision of a single bolt, whereby the bracket as a whole may be readily and conveniently applied, removed, or transferred with slight labor or loss of time.

The invention is illustrated in the accompanying drawing, in which:—

Fig. 1 is a view in elevation of a ladder with the bracket applied to one of the uprights and adjusted to lengthen such upright to compensate for a depression in the supporting surface.

Fig. 2 is an enlarged broken elevation of the ladder, with the bracket in adjusted position, the bracket and ladder upright being shown partly in section to illustrate the connecting means.

Fig. 3 is a view in side elevation of a part of the ladder upright and applied and adjusted bracket, the view being taken on the indicated line 3—3 of Fig. 2.

Fig. 4 is a transverse section through the ladder upright the bracket, and bracket-securing means, the line of section being indicated at 4—4 in Fig. 3.

The improved foot extension bracket comprises a hollow body 1, preferably of thin rigid metal, open at the top and closed at the bottom. The body has an interior shape and dimension corresponding to that of the upright 2, the body being thus designed to fit the foot of the ladder upright in a manner to prevent undue relative play, while permitting relative longitudinal movement at will.

The outer wall 3 of the bracket body is formed with a longitudinal slot 4, extending from a point above the bottom to a point short of the upper end. The inner wall 5 of the body is formed with a corresponding slot 6, which, however, opens through the upper edge of such wall, for a purpose to be later referred to.

The inner wall 5 of the body on each side of the slot 6 is formed with a series of regularly spaced openings 7, with such openings thus presenting a pair of openings aligned transversely of the bracket throughout the extent of the series of openings. The openings may be regularly spaced apart, say one inch or other distance, and this spacing constitutes and defines the increments of bracket adjustment.

A bolt 8, headed at one end at 9 and threaded at the opposite end at 10, extends through a rigid U-shaped clip 11 with the head 9 rigidly secured thereto, the clip overlying the outer wall 3 of the bracket and partly embracing the sides thereof. The bolt passes through the slot 4, an opening 12 in the ladder upright, the slot 6 in the bracket wall 5, and through a second rigid U-shaped clip 13, which overlies the inner wall 5 of the bracket and partly embraces the sides thereof.

The clip 13 is formed or provided on its inner surface, that is the surface next to the wall 5 of the bracket, with projections 14, disposed and sized to snugly engage any pair of openings 7 in the inner wall 5 of the bracket. A spring 15 is arranged on the bolt between the clip 13 and bracket wall 5, this spring serving to move the clip, when the latter is free of holding stress, to withdraw the projections 13 from the openings 7 in the bracket wall. A wing nut 16 on the threaded end of the bolt 8 will, when adjusted engage the clip and move the same toward the wall 5 of the bracket against the tension of the spring 15, seating the projections 14 in the particular pair of openings 7 which may be aligned therewith. This positively locks the bracket to the ladder upright. If preferred, and as shown in Fig. 4, the projections 14 may be of such lengths as to be forced into the uprights 2 in the initial application of the lock, thus adding to the holding effect, or, as obvious openings may be forced in the uprights, as at 7', Fig. 4, to receive the ends of the projections 14.

With the brackets applied to the foot of the upright 2, the wing-nut loosened, the bracket may obviously be adjusted lengthwise the upright to increase the length of the latter to compensate for any ground irregularity. The tightening of the

wing nut will force the clip 13, and thereby the projections 14 toward the wall 5 of the bracket, until such projections 14 seat in that particular pair of openings in alignment with such projections following adjustment of the bracket. If during this adjustment of the bracket a rung 17 of the ladder is met, such rung will find its way into the open ended slot 6 of the bracket wall 5, and this interference with complete adjustment of the bracket is avoided.

While the bolt 8 may engage the wall of opening 12 with more or less friction, the spring 15 due to its reaction on nut 16 through clip 13 creates a greater tendency for the bolt to turn in the opening when turning the nut on the bolt and such possible turning of the bolt is positively precluded by the clip 11 which is rigidly secured to the bolt and embraces the sides of the bracket 1. Furthermore, the spring 15 not only functions to move the clip 13 away from the bracket but further functions to maintain the clip 11 in engagement with the opposite face of the bracket whereby the bracket side engaging portions always preclude turning of the bolt.

With the bracket applied to a straight ladder section of the type illustrated, the application of the compensation may serve on either side by simply reversing the ladder. If application is to an extension ladder, both foot sections will be formed with the bolt opening 12, and the bracket may be transferred from one to the other as conditions require.

The bracket as a whole is of slight projection beyond the surface of the upright and may remain as a part of the ladder for use as required, or used as a ladder attachment to be removed when not required.

Having thus described the invention, what is claimed as new, is:—

1. A foot extension bracket for ladders, comprising a hollow body for slidable engagement over the end of a ladder upright, one wall of the body being formed with successive pairs of openings, a U-shaped clip engaging the opposite wall and sides of the body, a bolt extending through said clip, body and upright, a second U-shaped

clip receiving the bolt and movable lengthwise thereof to and from the first named wall of the body, a pair of projections on the second named clip for interlocking engagement with any one of the successive pairs of openings in the body, and a nut on the bolt for moving the second named clip into engagement with the body.

2. A construction as defined in claim 1, wherein a coil spring encircles the bolt between the upright and second named clip for maintaining the clip in engagement with the nut as same is turned out on the bolt for positive retraction of the projections from interlocking engagement with the openings and for maintaining the first named clip in engagement with the body.

3. In combination with a ladder upright provided with a pair of openings in one face thereof; a foot extension bracket comprising an elongated body slidably engaged over the end of the upright, the hollow body having a closed longitudinal slot in the outer face wall thereof and an open ended longitudinal slot in the inner face wall thereof, the body having longitudinally spaced openings on each side of the open ended slot arranged in transverse pairs for selective alignment of any one pair with the pair of openings in the upright, a bolt extending through the upright and the slots in opposite face walls of the body, a U-shaped clip rigid with the bolt and engaging the outer face wall and opposite edges of the body, a second U-shaped clip receiving the bolt and movable lengthwise thereof toward and from the inner face of the body, the second named clip having a pair of projections for engagement within the pair of openings in the upright and any one of the pairs of openings in the body, a wing nut threaded on the bolt for holding the U-shaped clips in engagement with the body in embracing relation thereto, and a coil spring encircling the bolt between the upright and second named clip for moving the latter away from the body upon unthreading of the nut and for maintaining the first named clip in engagement with the body.

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