

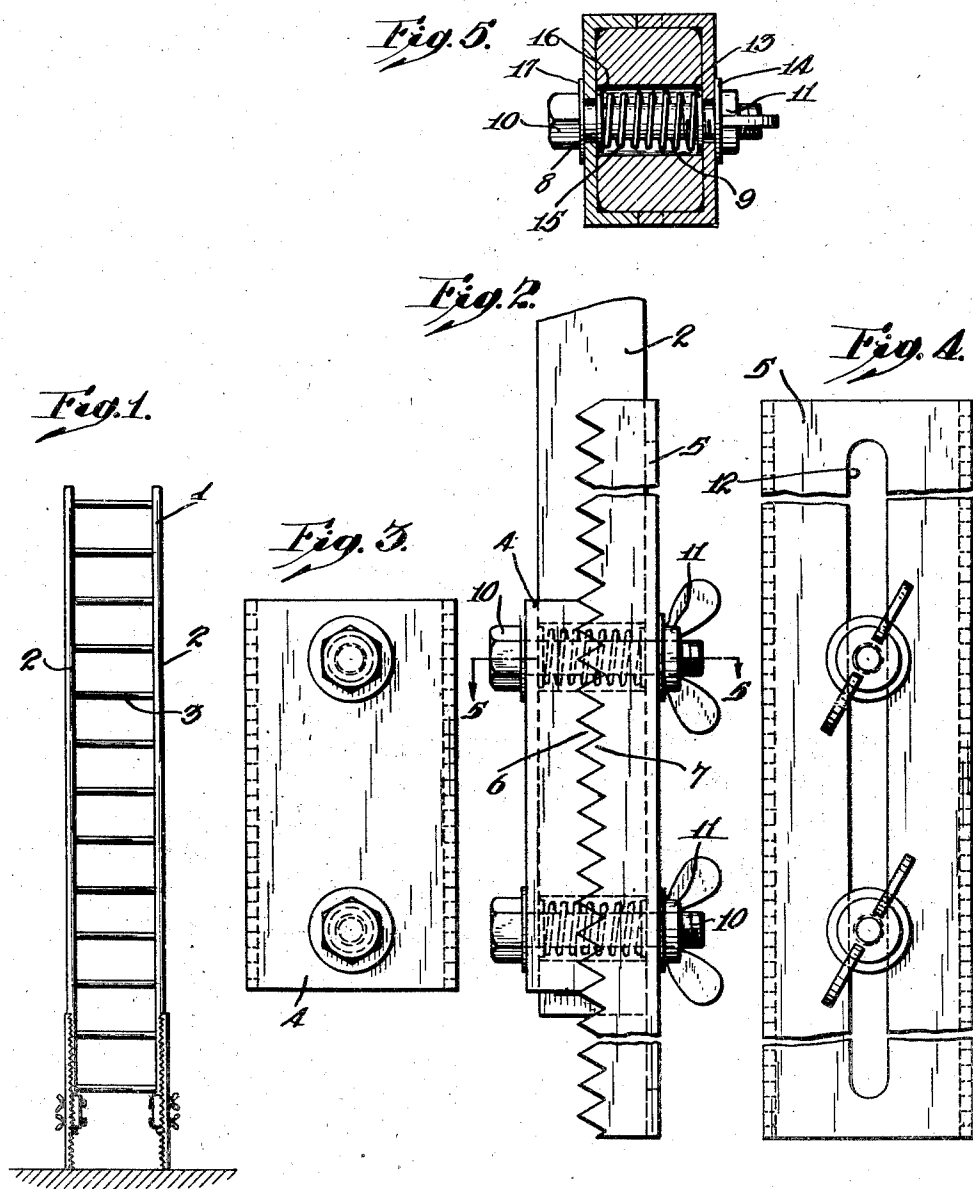
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LADDER LEVELING ATTACHMENT

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LADDER LEVELING ATTACHMENT

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4 Claims. (Cl. 228—63)

This invention relates to attachments for ladders and pertains particularly to an attachment by means of which one side rail of a ladder may be lengthened or shortened as necessary to take care of inequalities in the ground or a sloping condition of an underlying supporting surface.

The present invention has for its primary object to provide an attachment by means of which the side rails of a ladder may be lengthened or shortened so as to facilitate the mounting of the ladder in proper or vertical position upon sloping or uneven ground, in which novel means is provided for facilitating the quick changing of the parts of the attachment whereby the desired adjustment may be made.

Another object of the invention is to provide an attachment for the rails of a stepladder which comprises two separable units, one of which is fixed to the rail while the other is movable thereon relative to the first unit and wherein novel means is provided to effect the automatic separation of the movable from the fixed unit when holding or securing elements are released.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in elevation of a ladder with the attachment embodying the present invention applied thereto.

Fig. 2 is a view in edge elevation of one rail of the ladder showing the attachment in elevation.

Fig. 3 is a view of the exterior surface of a fixed element of the attachment.

Fig. 4 is a view in elevation of the outside of the movable element of the attachment.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 2.

Referring now more particularly to the drawing, the numeral 1 generally designates a ladder of the character for which the present attachment is devised, such a ladder comprising two side rails 2 and the connecting rounds 3. Each of the side rails has secured to the lower end thereof one of the attachments embodying the present invention. As shown in detail in Fig. 2,

such an attachment comprises the two channel-shaped portions 4 and 5 which are arranged for use with their edges in opposed relation so as to provide a receiving channel therebetween for the ladder rail 2.

The portion 4 of each rail attachment is materially shorter than the portion 5, and each of the portions has the edge of the side thereof provided with a series of teeth, the teeth of the portion 4 being indicated by the numeral 6 while those forming a part of the portion 5 are indicated by the numeral 7, and these teeth are in intermeshing relation when the attachment is secured in the selected adjusted position of the rail.

The portion 4 which constitutes the fixed part of the attachment, has the back wall thereof provided with two bolt openings 8 and these openings are alined with the openings 9 of larger diameter which are formed transversely thru the rail 2 adjacent the bottom or lower end thereof, and bolts 10 pass thru the openings 8 and 9 to the outer side of the rail to receive the securing wing nuts 11.

The outer or shiftable portion of the attachment which is indicated by the numeral 5 has its back wall provided with the longitudinally extending slot 12 thru which the threaded outer ends of the bolts 10 extend, and there are placed against the inner and outer faces of the slotted wall of the portion 5 the washers 13 and 14 which encircle the bolt, the washer 13 being disposed in the adjacent end of a passage 9 as illustrated in Fig. 5, while the outer washer is pressed against the outer side of the slotted wall by the adjacent wing nut.

Within each passage 9 is an expansion spring 15 which surrounds the bolt passing thru the passage. One end of this spring bears against the washer 13 while the other end bears against a similar washer 16 which is positioned against the inner side of the apertured wall of the portion 4. The outer wall of this portion of the attachment may have positioned thereagainst in surrounding relation with the bolt 10, a washer 17 as illustrated so that the head of the bolt will bear against this washer instead of against the adjacent portion of the attachment.

From the foregoing description taken in connection with the illustration of the invention, it will be readily apparent that when the wing nuts 11 of each rail attachment are drawn up on the threaded end of the bolts 10 the two portions 4 and 5 will be drawn together so as to bring the teeth 6 and 7 into meshing relation and also to

closely encase the rail. This drawing together of the two portions will compress the springs 15 and they will be held under such compression as long as the wing nuts are tight. When the wing nuts are loosened, the springs will expand and automatically separate the two parts of the attachment so that the outer or shiftable part 3 can be readily moved longitudinally of the supporting rail 2 to a new adjusted position. Such longitudinal movement is, of course, made possible thru the provision of the elongated slot 12 so that it will thus be apparent that desired adjustments of the parts of the attachments may be readily made without removing any of the elements of the attachments thus obviating the possibility of losing any of the parts.

What is claimed is:

1. A leveling attachment for a ladder rail, comprising a pair of channeled members adapted to be disposed in channel opposed relation with said rail therebetween, interdigitating coupling means between the members, one of said members being fixed relatively to the rail, the other member being of greater length than the fixed member and longitudinally movable to project beyond the adjacent end of the supporting rail, means for securing said members against relative movement, and means effecting the automatic shifting of the longer member relative to the shorter member when said securing means is released, in a manner to disconnect said interdigitating means.

2. A leveling attachment for a ladder rail comprising a pair of elongated bodies disposed against opposite faces of the rail and secured relatively thereto and extending longitudinally thereof adjacent one end, an elongated channeled body adapted to receive the rail adjacent said end with the longitudinal edges thereof each in opposed relation with one of said bodies interconnecting engaging means between said edges and the said adjacent bodies, securing means for said channeled body by which the channeled body is

drawn into engagement with the first bodies, means facilitating movement of the channeled body longitudinally when out of engagement with the first bodies, and resilient means normally urging the separation of the channeled body from the other bodies against the action of the securing means.

3. A leveling attachment for a ladder rail, comprising a pair of channeled bodies arranged in channel opposed relation with the rail passing therebetween, the bodies being mounted on the rail adjacent one end and one body being longer than the other to project beyond the adjacent rail end, the long edges of the bodies being normally in contacting relation, separable interconnecting means between said edges, a bolt passing thru the two bodies and the interposed rail, the said longer body having a longitudinal slot for the bolt facilitating lengthwise movement of the latter body thereon, securing means carried by the bolt for retaining the longer body against movement away from the other body, and spring means constantly urging separation of the longer body from the other body.

4. A leveling attachment for a ladder rail, comprising a pair of channeled bodies arranged in channel opposed relation with the rail passing therebetween, the bodies being mounted on the rail adjacent one end and one body being longer than the other to project beyond the adjacent rail end, the long edges of the bodies being normally in contacting relation, intermeshing teeth formed along said edges, a bolt passing transversely thru the two bodies and the interposed rail, the said longer body having a longitudinal slot for said bolt, a thumb nut threaded on the bolt and adapted to exert pressure against the slotted body to maintain said teeth meshed, and an expansible spring encircling the bolt and constantly exerting pressure against the slotted body tending to effect separation of the bodies.

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