Dec. 29, 1942. A. BIERY 2,306,797

ATTACHMENT FOR LADDER

Filed March 31, 1942

Fig. 1.

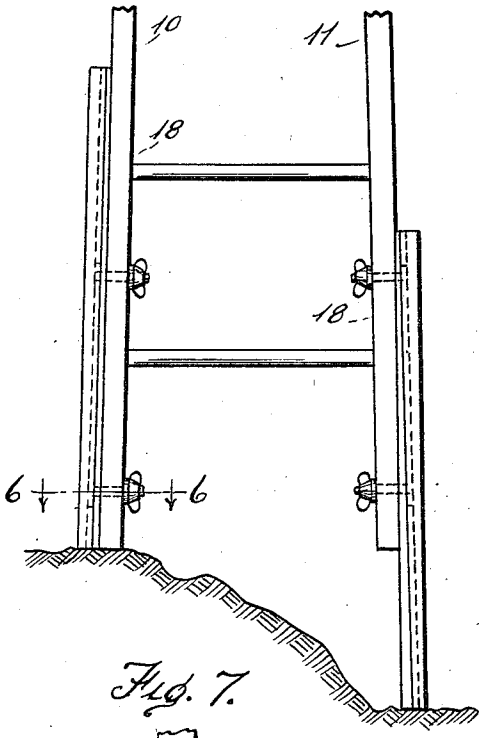


Fig. 2.

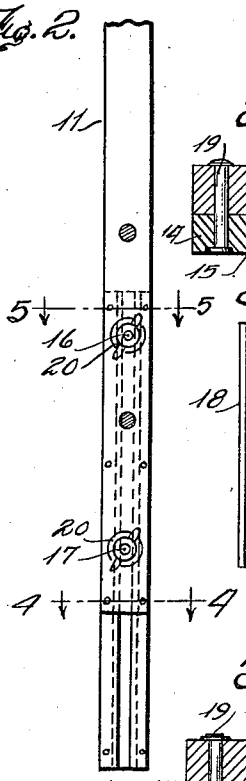


Fig. 4.

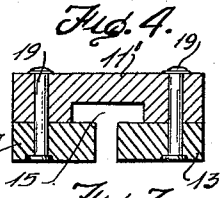


Fig. 3.

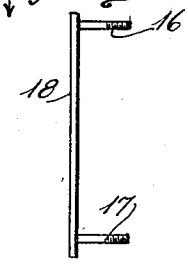


Fig. 5.

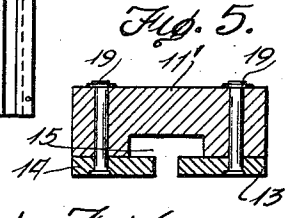


Fig. 7.

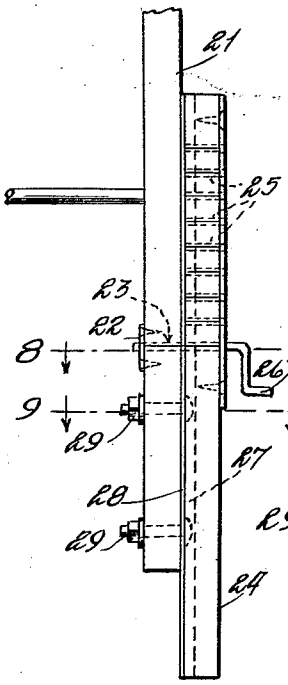


Fig. 8.

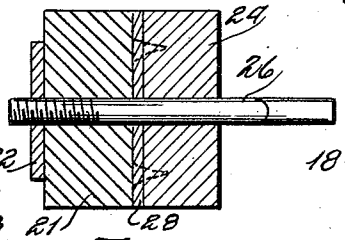


Fig. 6.

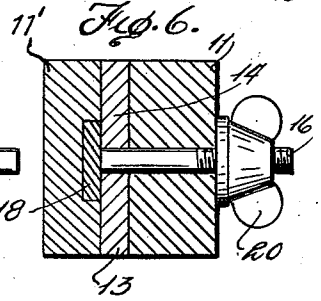
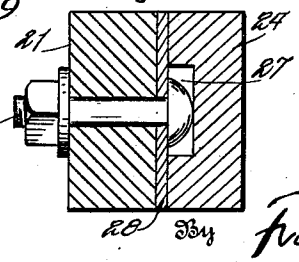


Fig. 9.



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Patented Dec. 29, 1942 2,306,797

UNITED STATES PATENT OFFICE

2,306,797

ATTACHMENT FOR LADDERS

Arthur Biery, Pine Island, Minn.

Application March 31, 1942, Serial No. 437,059

2 Claims. (Cl. 228—63)

This invention relates to ladders, and particularly to means for supporting ladders even though the base or ground to which the ladder is applied is uneven in character. In other words, the invention relates to an attachment for ladders which will hold the ladder level, regardless of the contour of the ground which supports it, within predetermined bounds.

It is an object of the invention to provide a ladder and adjustable extensions for the side bars or stiles, including novel means for holding the extensions in different positions of adjustment, and also including means by which movement of the stiles or side bars with relation to the extensions increases the gripping action of the members which retain them assembled.

It is a further object of the invention to provide a plate attached to each of the stiles which coacts with an extension for each stile, as will presently appear, the said plate being provided with binding instrumentalities which force the plate into contact with the surfaces of the extension so that the members are frictionally bound together, the frictional engagement being increased if the ladder has a tendency to move longitudinally of the extension.

It is a still further object of the invention to provide instrumentalities of the character indicated which are efficient and satisfactory in use and comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawing forming part of this application, wherein like characters denote corresponding parts in the several views, and in which:

Figure 1 illustrates a view in elevation of a fragment of a ladder showing the extensions applied thereto, one of said extensions being projected beyond the lower end of the ladder stile;

Figure 2 illustrates a sectional view through the center of the ladder showing the stile and extension thereon;

Figure 3 illustrates a detail view of a plate associated with the assembly;

Figure 4 illustrates a sectional view on the line 4—4 of Fig. 2;

Figure 5 illustrates a sectional view on the line 5—5 of Fig. 2;

Figure 6 illustrates a sectional view on the line 6—6 of Fig. 1;

Figure 7 illustrates a view in elevation of a fragment of a ladder with a modified extension;

Figure 8 illustrates a sectional view on the line 8—8 of Fig. 7; and

Figure 9 illustrates a sectional view on the line 9—9 of Fig. 7.

In the drawing 10 and 11 denote the stiles of a ladder, each of which at its lower end has apertures to receive threaded studs or bolts 16 and 17 which project from a plate 18 located in the outer surfaces of the stiles. The extension portions of the ladder which are detachably applied to the outer surfaces of the stiles and which are adjustable on the plate 18 comprise a main strip of material 11' having a channel or recess 15 in its inner face or surface, to which member 11' are secured battens 13 and 14 whose inner edges are in spaced relation to each other so that a clearance is formed between them in order that the extension may slide with respect to the stile to which it is applied with the plate 18 located in the channel 15 and the bolts 16 and 17 located in the space between the inner edges of the battens. Thus the extension is slidable on the plate and bolts and can be adjusted longitudinally of the stiles to any appreciable or desirable degree within the range of movement of the parts.

The battens or strips are secured to the member 11' by mechanical fastenings 19, such as rivets or the like, so that a strong and durable structure is thus produced by which the extension is secured in different positions of adjustment by the employment of wing nuts 20 threaded on the bolts and these serve to draw the plate 18 into intimate contact with the inner surfaces of the battens and through the friction thus produced the extensions are held at different positions of adjustment, as stated. It is shown that the battens at the lower ends are thicker than they are at the upper ends so that if there is a tendency of the ladder to move longitudinally of the support, the friction between the contacting parts will be increased and more firmly couple the ladder to the supports.

In the modification shown in Fig. 7, the stile 21 has a threaded plate 22 secured to its inner surface and the stile has an aperture 23 registering with the threaded plate. The extension 24 in this form has a plurality of apertures 25, one of which is intended to register with the aperture 23, according to the adjustment of the extension on the stile and when proper adjustment has been attained, a threaded crank or

handle 26 is inserted through the holes or apertures of the extension and stile, and when the threads of the crank engage the threads of the plate, the extension is held at different positions of adjustment. As a means for steadying the extension on the stile, the extension is provided with a channel 27 covered by a slotted plate 28 on the extension and bolts such as 29 extending through the stile have their heads located in the channels 27 and the plate 28 moves on the shanks of the bolts, and when the extension and stile are secured together by the threaded crank or handle, the parts are held rigidly adjusted.

I claim:

1. In an equalizer for ladders, a plate having means for its attachment to a stile of a ladder, an adjustable extension on the plate comprising a member having a channel to receive the plate, battens secured on said member having their inner edges in spaced relation to each other and partially covering the channel, the said member being slidable on the plate and its attaching means, the said attaching means being operable to clamp the plate into contact with the inner surfaces of the battens.

2. In an equalizer for ladders, a plate applied to the outer surface of a stile and having threaded members projecting through the stile, nuts on the said extension bearing against the inner surface of the stile, an extension slidable on the said plate and comprising a slotted member to receive the plate, and battens secured to the said member with their inner edges overlying a portion of the slot, the inner edges of the said battens being in spaced relation to form a clearance for the members projecting from the plate, the said battens being tapered upwardly from their lower ends.

ARTHUR BIERY.