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G. W. QUINN

2,113,282

LADDER

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Fig. 1.

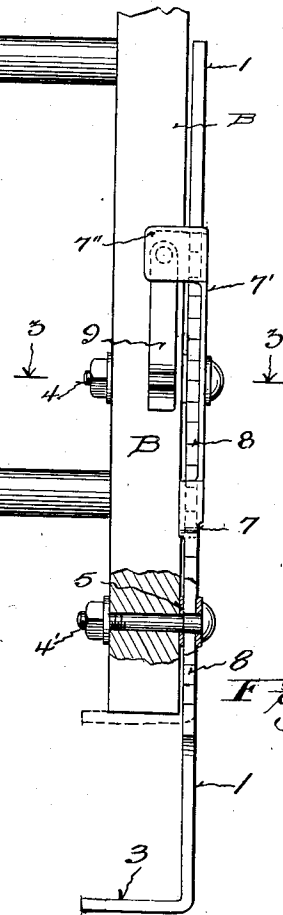
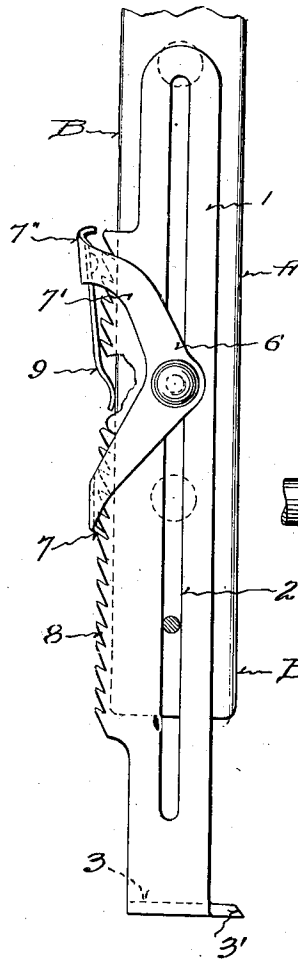
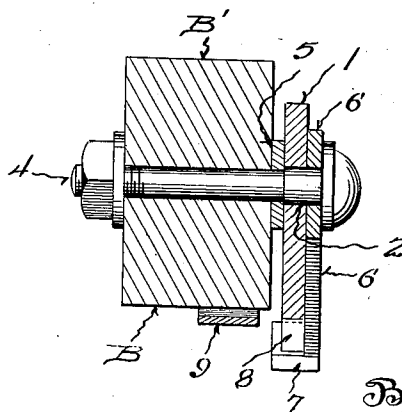


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE

2,113,282

LADDER

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2 Claims. (Cl. 228—63)

My invention refers to ladders of all types, and it has for its primary object to provide a simple, economical, and effective extension or adjustable leg for the bottom of ladder rails, whereby the ladder is leveled, irrespective of an uneven ground support.

The specific object of my invention is to provide a metallic flat adjustable leg at the lower end or ends of the ladder, which can be quickly adjusted for height, the structural features being such that there are no parts projecting beyond the outer face of the ladder rails, which might be engaged by the apparel of the operator.

A further specific object of my invention is to provide a pair of standard bolts, which will secure the leg and all associated parts through the medium of a slot in said leg.

With the above and other minor objects in view, the invention consists in certain peculiarities of construction and combination of parts, as hereinafter set forth with reference to the accompanying drawing.

In the drawing:

Figure 1 represents a side elevation of the ladder rail equipped with an extension leg embodying the features of my invention, with parts being broken away and in section, to more clearly illustrate structural features.

Figure 2 is a face view of the same, with parts broken away and in section, to more clearly illustrate structural features.

Figure 3 is a cross section of the same, the section being indicated by line 3—3 of Figure 2.

Referring by characters to the drawing A represents any standard ladder rail having slidably fitted to its outside face a metallic flat leg strap 1, the same being provided with a longitudinal retaining and guide slot 2. The bottom of the leg is provided with an intumed ground-gripping foot 3, preferably having a spur 3' extending therefrom.

Extending through the rail is a pair of bolts 4—4', the outer ends of which bolts project through the leg slot 2. The bolts are also provided with washers 5 between the leg and outside face of the ladder rail, whereby the leg, when adjusted up and down, will have a metallic bearing at these points, to effectually eliminate friction, and permit easy up and down adjustment of said leg. It will be noted that the rounded heads of the bolts, in conjunction with washers, are positioned outside of the leg, and due to their formation present slight obstructions which might contact with parties working around the ladder.

As best illustrated in Figure 3 of the drawing, the head and washer of the upper bolt 4 also serve as a keeper and pivot points for a dog or pawl 6. The nose 7 of the dog is adapted to engage any one of a plurality of ratchet teeth 8, which ratchet teeth form part of the leg 1, and project slightly beyond the juxtaposed front face B of the ladder rail.

The tail portion 7' of said dog is folded over to form an engaging pad 7''. This engaging pad has secured thereto a leaf spring 9, the free end of which engages the front face of the ladder rail, whereby the nose of the dog is held into locking engagement with any one of the ratchet teeth. It will also be observed that the locking faces of the ratchet teeth are prominently undercut, whereby the nose of the dog will be securely locked in connection with said surface to prevent inadvertent release of its engagement.

It will be noted that when it is desired to adjust the leg downwardly, it is effected, for example, by foot pressure of the operator upon the gripping foot 3, which will function similar to a stirrup, whereby said leg is moved downwardly to a set point, and when it is desired to lift the leg, the pad 7'' may be pressed inwardly against the spring pressure, by hand or foot of the operator, whereby disengagement of the nose of the dog with the teeth is effected. Hence, the leg can be raised freely, it being understood that when the said leg is raised or lowered, it is guided by its slot and bolt connection with the ladder rail.

While I have shown said rail as being composed of wood, obviously it may be of metal, or any other suitable material, and the ladder to which the leg is attached may be of the standard step ladder or extension type. In some instances, it may be desirable to equip the ground ends of both ladder rails with these extension feet. Under ordinary conditions, however, one leg may be sufficient, in which case it is raised or lowered to level the ladder, in the event that the opposite rail is supported upon a higher or lower surface with relation to its companion rail. Obviously, this frequently occurs when the ladder is to be used upon uneven ground, or on steps.

It will be noted that in the event the ladder is laid flat upon an inclined roof for working purposes, the spur 3', which projects slightly beyond the companion rail face B', will bite into the roof surface, and prevent the ladder from slipping.

It will also be noted that the foot 3 projects beyond the guide face of the ladder rail. This is for the purpose of utilizing the projecting end as

a toe-hold (indicated in dotted lines), whereby the leg may be pushed down when it is in its closed position. Furthermore, the lip 7" is curved inwardly to prevent the same from catching into obstructions when the ladder is moved about.

While I have shown one specific structure of my invention in detail, it is understood that the same may be varied within the scope of the claims.

I claim:

1. In a ladder having a rail rectangular in cross section, a flat metallic leg fitted to the outer face of the rail, the leg being provided with a longitudinal slot, one edge of the rail having ratchet teeth extending therefrom beyond the juxtaposed face of said rail, upper and lower bolts extending through the aforesaid rail and engaging the leg slot, whereby said leg is confined but capable of longitudinal adjustment, washers between the juxtaposed face of the rail and leg carried by the bolts, a dog pivotally mounted upon the upper bolt and engaging the outer face of the leg, a nose extending from the dog for engagement with the teeth, a tail extending from the dog having an inwardly projecting pad, a spring secured to the pad having its free

end engaging said juxtaposed rail surface, and a foot extending forwardly from the leg for engagement with the ladder-supporting ground, said foot having a gripping spur associated therewith.

2. In a ladder having a rail rectangular in cross-section, a flat metallic leg fitted to the outer face of the rail, the leg being provided with a longitudinal slot, one edge of the rail having ratchet teeth extending therefrom beyond the juxtaposed face of said rail, upper and lower bolts extending through the aforesaid rail and engaging the leg slot, whereby said leg is confined but capable of longitudinal adjustment, washers between the juxtaposed face of the rail and leg carried by the bolts, a dog pivotally mounted upon the upper bolt and engaging the outer face of the leg, a nose extending from the dog for engagement with the teeth, a tail extending from the dog having an inwardly projecting pad, a spring secured to the pad having its free end engaging said juxtaposed rail surface, and a foot extending forwardly from the leg for engagement with the ladder-supporting ground.

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