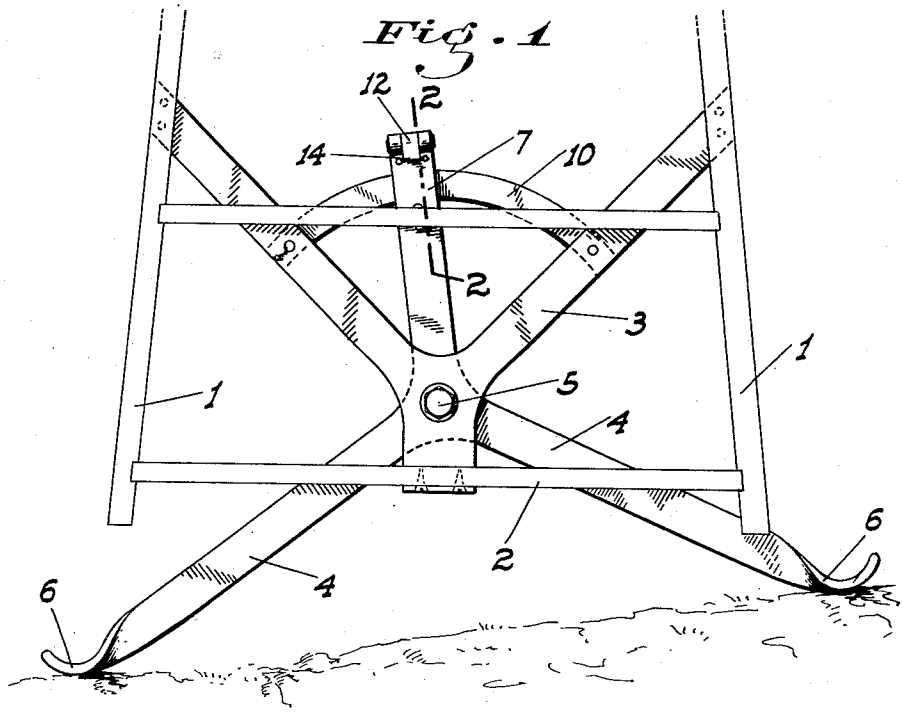
Nov. 4, 1930. J. H. HARRISON 1,780,386

LEVELING ATTACHMENT FOR LADDERS

Filed Sept. 14, 1929

Fig. 1



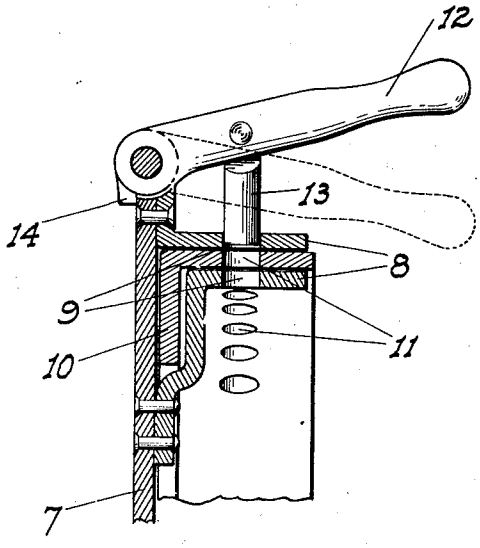


Fig. 2

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LEVELING ATTACHMENT FOR LADDERS

Application filed September 14, 1929. Serial No. 392,681.

This invention relates to step or similar ladders, my principal object being to provide a device, which may be built into the ladder or put out as an attachment, by means of which the ladder may be set and will remain in a proper vertical position even when the ground surface adjacent the same is uneven or has a considerable slope; and which may be easily adjusted so as to conform to different degrees of slope or unevenness relative to a vertical plane.

I have particularly designed this device for step ladders such as are used in fruit picking work in orchards, in which it frequently occurs that the ground about the trees is not level, and it is hard to set an ordinary ladder so that it will not upset, due to its being out of plumb, unless one leg or the other is blocked up. The leveling device however, is also very useful for ladders such as are used by exterior painters, window washers and the like, whose ladders lean against buildings or walls on the outside of the same, and under which conditions it frequently occurs that the adjacent sidewalk or street has a horizontal slope relative to the building.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1, is a fragmentary front elevation of a ladder at its lower end, showing my improved leveling attachment mounted thereon.

Fig. 2, is an enlarged cross section taken on the line 2—2 of Fig. 1.

Referring now more particularly to the numerals of reference on the drawings, 1 denotes the side rails and 2 the rungs or steps of an ordinary step or similar ladder. Disposed behind the ladder is a Y shaped frame 3, which is secured in a suitable manner at the bottom to the lowest rung and at its upper ends to the side rails some distance above.

Disposed behind the frame is a rigid inverted V shaped bar, forming auxiliary legs 4, which are pivoted in common on the frame by a bolt 5 or the like at a point centrally of the width of the ladder and adjacent the bottom of the frame. The lower ends of these legs are formed as or provided with feet 6 which are flat in the horizontal plane transversely of the ladder and are adapted to rest on the ground. The auxiliary legs project some distance below the bottom of the ladder proper, the side rails being cut off somewhat if necessary below the lower rung so that said rails will not engage the ground.

Projecting upwardly from and formed with or secured to the leg units at the top and symmetrical thereto is an arm 7, projecting radially relative to the pivot bolt 5 adjacent its upper end. This arm is provided with a pair of vertically spaced plates 8 which project rearwardly or away from the ladder. These plates are provided with vertical alined holes 9. Disposed behind the arm 7 and extending concentric with the bolt 5 is a quadrant 10, preferably of angular cross section and which is secured at its ends on the frame 3. The horizontal portion of this quadrant projects between the plates 8 and is provided with a row of holes 11 along the same to register with the holes 9.

A rearwardly projecting hand lever 12 is pivoted or hinged at its forward end on to the upper end of the arm 7, and carries a depending pin 13 flexibly connected thereto intermediate its ends and adapted to project through alined sets of holes 9 and 11. This lever tends to drop of its own weight, so that the pin will remain engaged with the holes without the use of springs and without the danger of its coming out of itself. It is limited in its upward movement by a stop 14 formed with its hinge knuckle, to engage the arm 7, and so arranged that when the lever is raised its full extent, the pin will be clear of the quadrant but will still be engaged with the hole in the upper plate. In this manner the pin can never get out of place.

To set the attachment it is only necessary

to rest the feet 6 on the ground, hold the pin released from the quadrant while moving the ladder to an upright position, when the lever is released to allow the pin to engage the adjacent hole in the quadrant. The parts are then rigid with each other until again intentionally readjusted.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A ladder leveling device including an auxiliary leg unit extending across the ladder to a point below the bottom of the same, ground engaging feet at the outer lower ends of the leg unit, means pivotally supporting said unit on the ladder for oscillating movement in a plane parallel to the same, a quadrant fixed on the ladder concentric with the axis of oscillation of the leg unit, and a member mounted in fixed connection with the leg unit to releasably engage the quadrant at different points in the length thereof.

2. A ladder leveling device including an auxiliary leg unit extending across the ladder to a point below the bottom of the same, ground engaging feet at the outer lower ends of the leg unit, means pivotally supporting said unit on the ladder for oscillating movement in a plane parallel to the same, a quadrant fixed on the ladder concentric with the axis of oscillation of the leg unit, a plate fixed with the leg unit and disposed in concentric and cooperating relationship with the quadrant, said quadrant having a row of holes and the plate having a hole to register with the quadrant holes selectively, and a pin movably mounted in connection with the plate and projecting through the plate hole to removably pass through any selected quadrant hole.

3. A ladder leveling device including an auxiliary leg unit extending across the ladder to a point below the bottom of the same, ground engaging feet at the outer lower ends of the leg unit, means pivotally supporting said unit on the ladder for oscillating movement in a plane parallel to the same, a quadrant fixed on the ladder concentric with the axis of oscillation of the leg unit, a plate fixed with the leg unit and disposed in concentric and cooperating relationship with the quadrant, said quadrant having a row of holes and the plate having a hole to register with the quadrant holes selectively, a pin movable radially of the quadrant and adapted to project through the plate hole and one of the quadrant holes simultaneously and a horizontal lever pivoted at one end in connection with the leg unit and from which the pin depends.

4. A structure as in claim 3, in which stop means is arranged in connection with the lever to limit the movement thereof in a pin retracting direction to prevent the pin being drawn entirely clear of the plate-hole.

In testimony whereof I affix my signature.

JOHN H. HARRISON.