

PATENT OFFICE

Jan. 16, 1923.

W. MARTIN.
SIDEHILL LADDER.
FILED JAN. 19, 1920.

1,442,694

2 SHEETS-SHEET 1

Fig. 1.

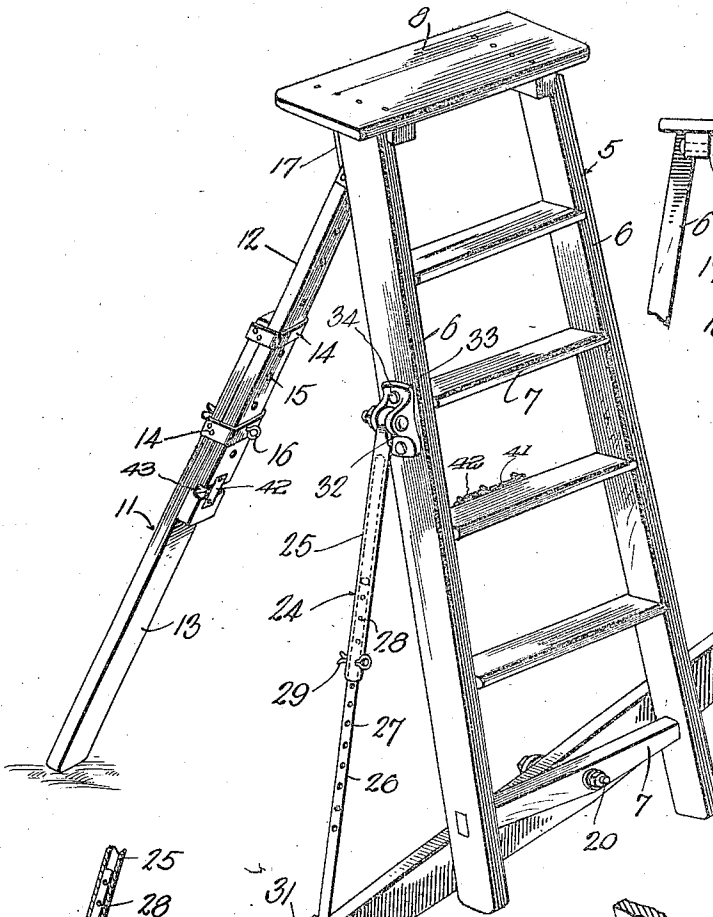


Fig. 2.

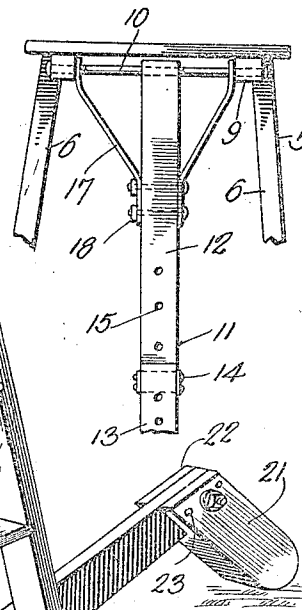


Fig. 4.

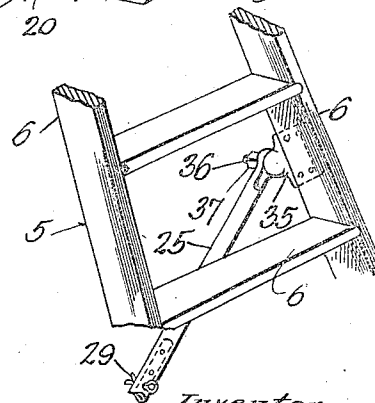
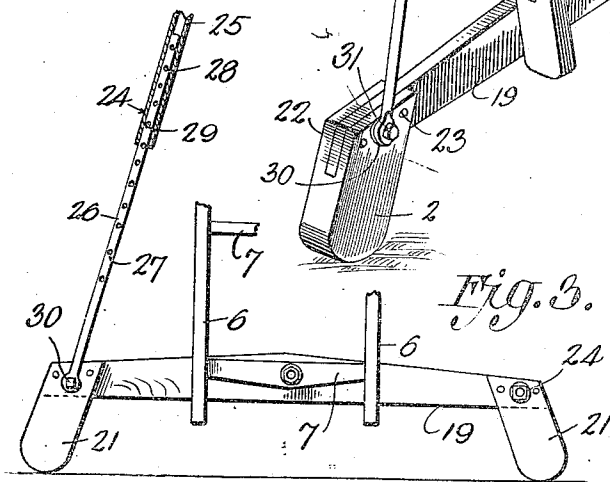


Fig. 3.



Inventor.
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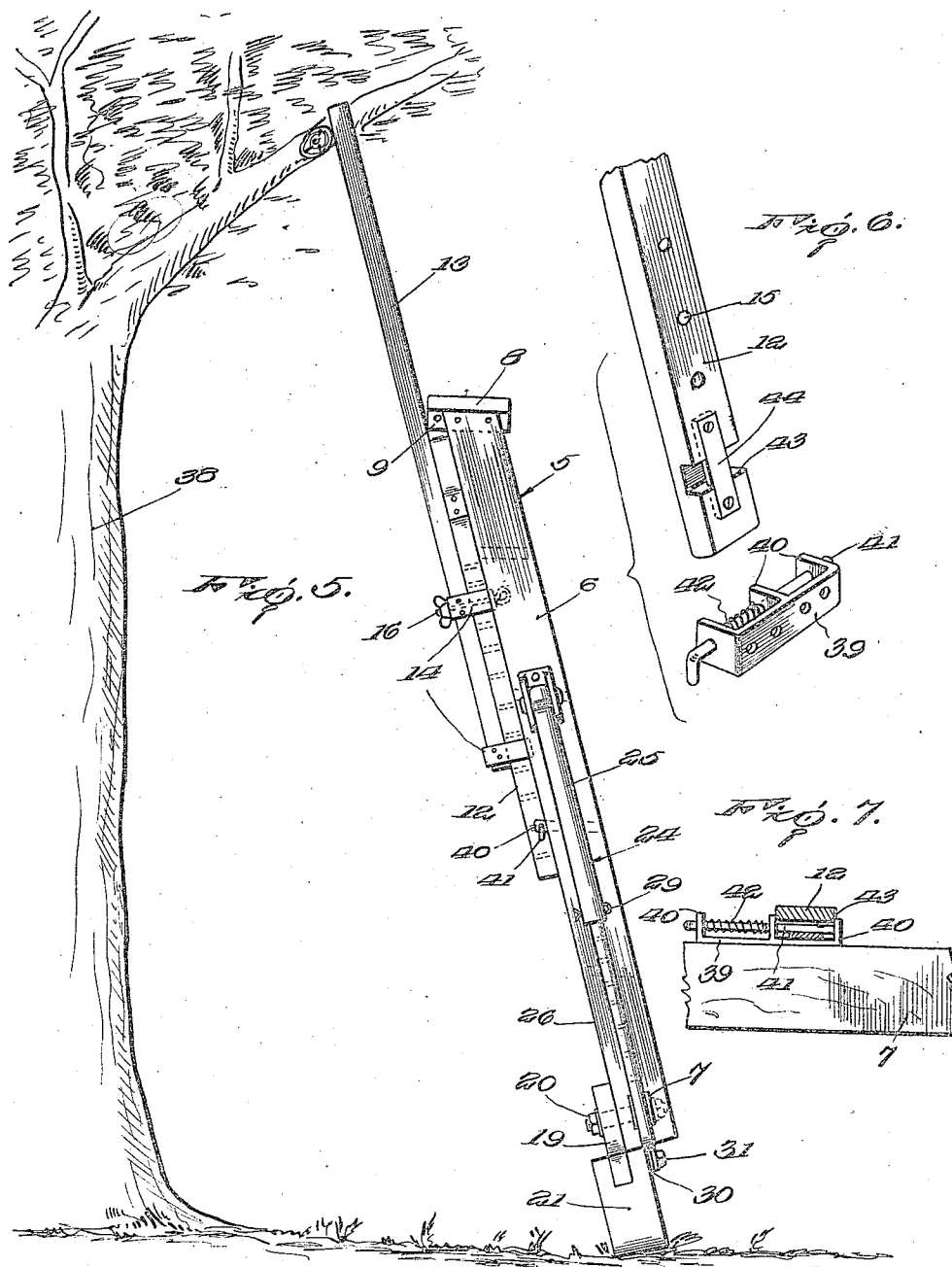
by Lacy Lacy, Atty's

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2 SHEETS-SHEET 2



UNITED STATES PATENT OFFICE.

WEAVER MARTIN, OF LAFAYETTE, OREGON.

SIDEHILL LADDER.

Application filed January 19, 1920. Serial No. 352,351.

To all whom it may concern:

Be it known that I, WEAVER MARTIN, a citizen of the United States, residing at Lafayette, in the county of Yamhill and State of Oregon, have invented certain new and useful Improvements in Sidehill Ladders, of which the following is a specification.

This invention relates to improvements in ladders and more particularly to a ladder having novel means whereby the same may be positioned vertically on a hillside or other incline.

An important object of this invention is to provide a ladder having a relatively large base pivotally supporting the ladder and adapted to be adjusted whereby the ladder may be positioned at any desired angle with relation to the base.

A further object of the invention is to provide a ladder of the class described which is of highly simplified construction, convenient to adjust and cheap to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a perspective of a ladder embodying the invention,

Figure 2 is a fragmentary rear elevation of the same,

Figure 3 is a fragmentary front elevation of the same,

Figure 4 is a fragmentary perspective of the ladder having a slightly modified form of adjusting means,

Figure 5 is a side elevation of the ladder extended,

Figure 6 is a group perspective of a locking device embodied in the invention, and

Figure 7 is a detail horizontal section through the ladder illustrating the locking device.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 5 generally designates a ladder having a pair of standards 6 connected by spaced parallel rungs or steps 7. The ladder which may be of any desired type is provided with a top 8 to which is secured a pair of depending aligned apertured ears 9 forming a support

for a transverse shaft or rod 10. A bracing leg or prop generally designated by the numeral 11 is provided with a pair of adjustable sections 12 and 13 slidably connected by a pair of spaced U-shaped straps 14 which as illustrated in Figure 1 are rigidly secured to the lower section 13. The upper and lower sections 12 and 13 are provided with openings or apertures 15 which are adapted to be brought into registration for receiving a locking device 16 which in this case is a cotter pin. However, the locking device 16 may be in the form of a spring pressed latch carried by either of the sections and adapted to engage the coacting section. As illustrated in Figure 2, the upper end portion of the section 12 is rotatably connected to the shaft 10 by a pair of outwardly diverging bracing bars or rods 17 rigidly secured to the section 12 at a point spaced from its upper end by a pair of bolts 18. As is obvious from Figure 1, the prop 11 may be positioned at a desired angle for correspondingly positioning the body portion of the ladder.

To permit of the use of the ladder on a hillside or other incline, a beam 19 is horizontally pivoted to the bottom rung 7 of the ladder through the medium of a detachable bolt 20. The lower rung 7 has its rear side flush with the rear side of the standards 6 and is therefore in contact with the adjacent side of the beam for providing a frictional contact between the ladder and the beam whereby when the ladder is arranged at an angle, movement of the same with relation to the beam is eliminated. Further, the lower end portions of the standards extend beyond the under side of the beam to such an extent that regardless of the position of the ladder with relation to the beam the standards will always be in contact with the adjacent side of the beam. The outer end portions of the beam 19 are rigidly connected to anchoring legs 21 which are preferably positioned at an angle of about 45° so that when the beam is positioned on the side of a hill one of the anchoring legs 21 will be disposed at a slight angle to the ground and will therefore be prevented from slipping or breaking as would be the case in the event that the legs 21 were positioned at right angles to the beam. The upper end portions of the anchoring legs 21 are bifurcated to provide attaching portions 22 arranged on opposite sides of the beam 19

and rigidly secured to the same by fastening devices 23 which may be bolts, nails or the like.

An adjusting device 24 clearly illustrated in Figures 1 and 3 is adapted for securely positioning the ladder in an upright position when it is desired to use the same on a hillside. The adjusting device 24 includes a tubular member 25 slidably receiving a solid section 26 which is provided with transverse openings 27 adapted to align or register with transverse openings 28 for the reception of a locking device 29. The locking device 29 in this case is in the form of a cotter pin though it is obvious that the same is capable of various modifications or other mechanical expressions. The lower end portion of the solid section 26 is flattened and apertured to provide an ear 30 through which is extended a pivot element 31 connected to one of the anchoring members 21. The upper end portion of the tubular section 25 is connected to a pair of apertured ears 32 forming a part of a bracket 33 which is rigidly secured to the adjacent side of the ladder by fastening devices 34. The adjusting device also serves to secure the ladder in a set position when on level ground. I do not, however, restrict myself to the specific construction of the adjusting device as shown.

In the modified form of the invention illustrated in Figure 4, the telescopic member 25 is extended to the opposite side of the ladder and is connected to a bracket 35 having a pivot bolt 36 extending rearwardly therefrom. A nut 37 is threaded on the pivot bolt 36 and is adapted to secure the upper end portion of the tubular member 25 in position. This form of the invention is especially adapted for use where a relatively short ladder is employed and it is desired to provide means whereby the same may be adjusted over a comparatively wide range. Obviously in extending the tubular member across the rear side of the ladder the entire adjusting device 24 would necessarily be of an increased length and would therefore be capable of greater movement. However, the upper end portion of the tubular member 25 may be secured to the rear side of one of the steps with equal expediency.

If desired the prop 11 may be locked to the rear side of the ladder to permit the prop to be engaged with the crotch of a tree when desired. More specifically, the lower section 13 of the prop may be reversed in its position with relation to the upper section 12 by simply sliding the U-shaped straps 14 off of the upper section and reapplying the straps to the upper section with the lower end of the lower section 13 in the position illustrated in Figure 5 wherein the upper section 13 is shown extended above the top of the ladder and engaging one limb of a tree 38. By this construction the rear

prop may be utilized for securing the ladder in a substantially upright position at a point spaced from the trunk of the tree so that access may be had to the outer portions of the tree branches. However, the section 13 may be arranged in the position illustrated in Figure 5 when it is desired to put the ladder to other uses than the specific use illustrated. When the prop is employed in the manner illustrated in Figure 5, the lower section 12 is locked to one of the rungs of the ladder by a locking device 39.

With reference to Figures 6 and 7, it will be noted that the locking device 39 is in the form of a base plate having a plurality of spaced apertured ears or lugs 40 which receive a bolt 41 normally pressed forwardly by a coil spring 42. The lower end portion of the section 12 is received between two of the ears 40 and is provided in its inner side with a transverse groove 43 which receives the locking bolt 41. A strap 44 is extended across the groove or slot 43 and is adapted to retain the locking bolt within the groove so that the upper section 12 is securely locked to the ladder. It will be noted that the strap or plate 44 is countersunk so as not to interfere with the sliding movement of the U-shaped straps on the upper section 13.

When the ladder is to be used as illustrated in Figure 5, the lower section 13 is removed from engagement with the upper section 12 so as to permit the lower section 13 to be reversed and reapplied to the upper section. When in the position illustrated in Figure 5, the section 13 which now becomes the upper section, may be adjusted longitudinally of the ladder with as much convenience as when the same was in the position illustrated in Figure 1. This enables the section 13 to be engaged with any relatively stationary object within the limits of the adjustment of the prop. When it is desired to return the section 13 to its lower position, the same may be disengaged from the section 12 and subsequently re-engaged with said section 12 with its free end downwardly instead of upwardly as was formerly the case. The locking bolt 41 is of course disengaged from the upper section 12 so as to permit the prop to be positioned as desired.

Assuming that it is desired to use the ladder on a hillside, the ladder may be adjusted to the desired incline with relation to the slope of the hill and may be readily secured in position by the adjusting device 24. To compensate for any inequalities in the hillside, the length of the prop may be adjusted to the proper length. Also if it is desired to arrange the ladder on a hillside with the bracing leg 11 facing the top of the hill, the length of the leg may be lessened for positioning the ladder at a slight incline.

It is to be understood that the form of the invention herewith shown and described is

to be taken as a preferred embodiment of the same and that such minor changes may be made as will remain within the spirit of the invention and the scope of what is
5 claimed.

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

10 A ladder comprising stiles, a connecting member extending between the lower portions of the stiles above the lower extremities thereof and having its rear face spaced forwardly from the plane of the rear edges of the stiles, a supporting beam extending
15 transversely of the stiles and bearing against the rear edges thereof, supporting feet se-

cured rigidly to the end of the beam and diverging downwardly therefrom, a bolt fitted pivotally through the intermediate portion of the beam and through the connecting member and adapted to bind the said 20 beam against the rear edges of the stiles, and a telescopic brace having its upper end pivotally secured to a stile at a fixed point, the end of the brace and the pivotal mounting thereof being entirely in rear of the 25 front edge of the stile and the lower end of the brace being pivotally attached to the foot at one end of the beam.

In testimony whereof I affix my signature.
WEAVER MARTIN. [L. s.]