

J. C. MOORE.  
Ladder.

No. 224,462.

Patented Feb. 10, 1880.

Fig. 1.

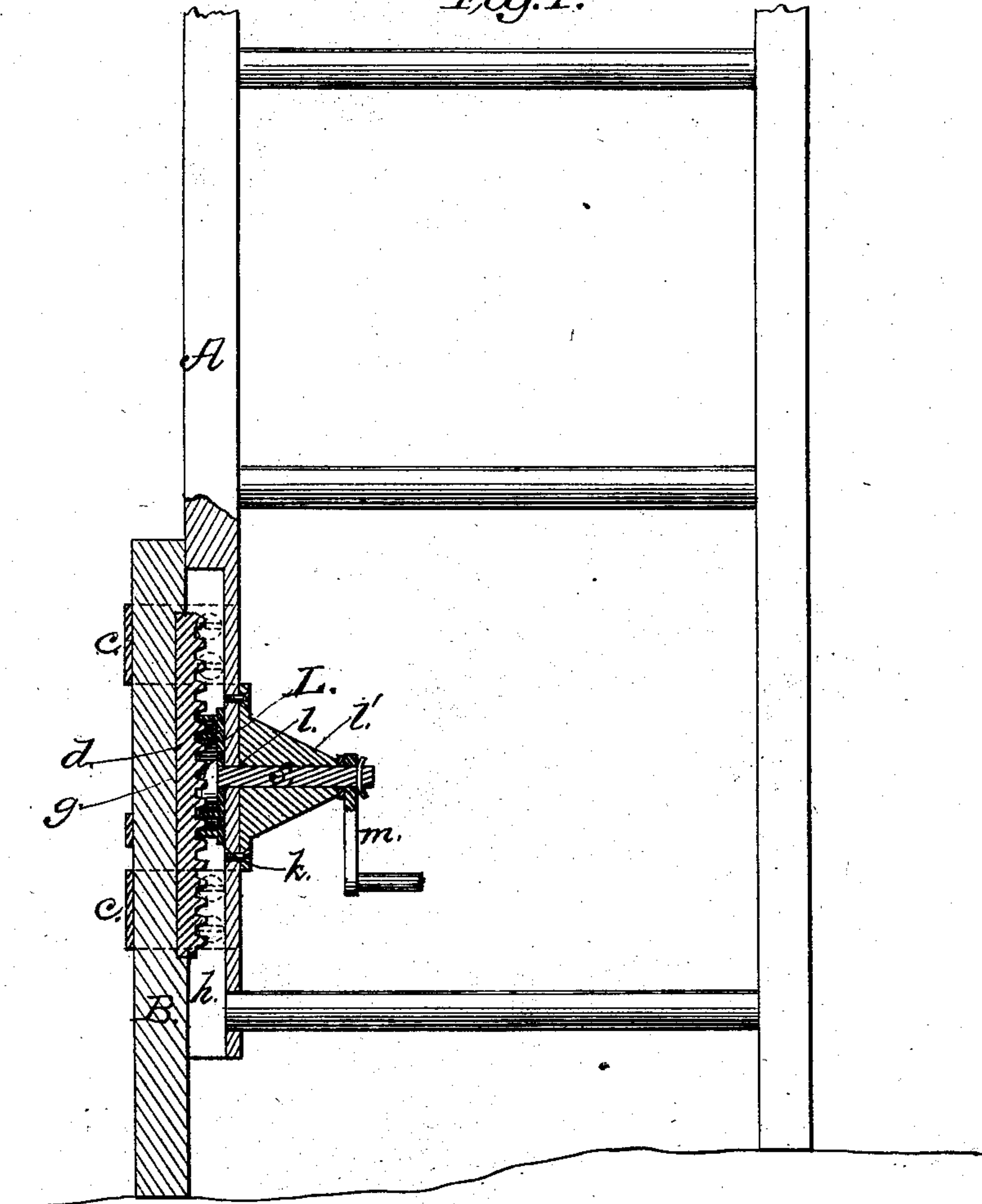
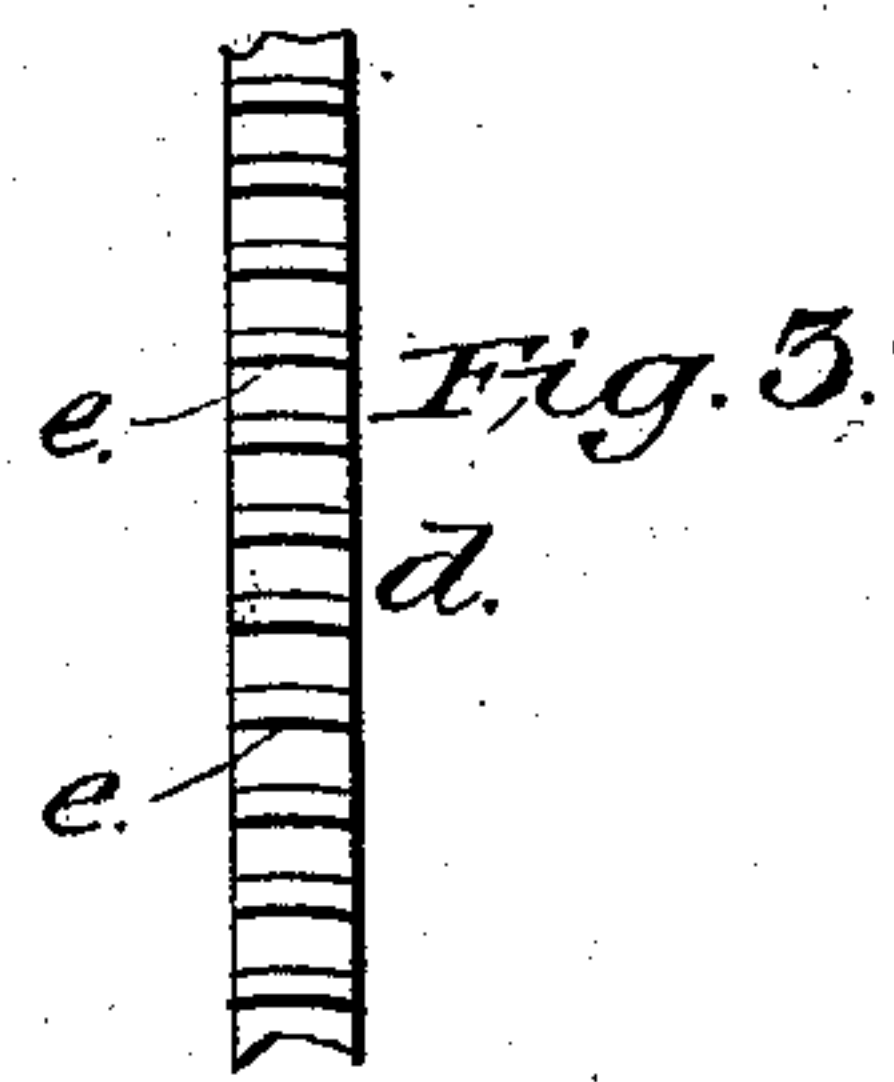
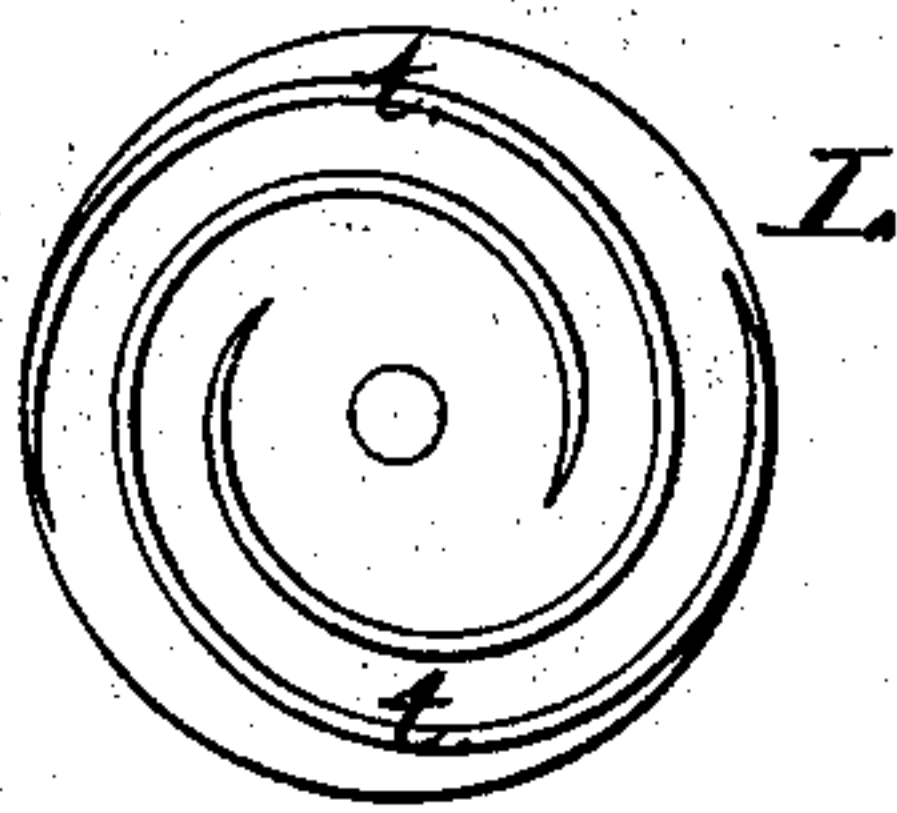


Fig. 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JAMES C. MOORE, OF SALTSBURG, PENNSYLVANIA.

## LADDER.

SPECIFICATION forming part of Letters Patent No. 224,462, dated February 10, 1880.

Application filed December 6, 1879.

*To all whom it may concern:*

Be it known that I, JAMES C. MOORE, of Saltsburg, in the county of Indiana and State of Pennsylvania, have invented a new and valuable Improvement in Ladders; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my improved ladder, and Figs. 2 and 3 are detail views.

This invention has relation to means for leveling ladders on uneven ground.

The nature of the invention consists in the combination, with a ladder having a short side bar, of a sliding foot, a rack, and a spiral-toothed wheel engaging said rack, and operating to move and hold said sliding foot, as hereinafter shown and described.

In the accompanying drawings, the letter A designates the short side bar of a ladder, and B the sliding foot, connected to its lower end by means of strong bands *c*, or a socket-plate or other strong guide. To the inside of this slide is secured a rack, *d*, extending centrally and longitudinally, and having its teeth usually somewhat curved from side to side, as shown at *e*. This rack should either form a part of the foot or be strongly fastened thereto. It is preferred to let it into a recess, *g*, in the foot, so that its teeth only will project to engage the wheel L.

In the side bar of the ladder a longitudinal central groove, *h*, is formed to provide a way for the rack-teeth, and at about its middle portion a wider recess, *k*, is made to receive a spiral-toothed wheel, L, having a shaft, *s*, which extends through a bearing, *l*, and is provided with an operating crank or handle, *m*, as shown in the drawings. This bearing *l* is made through the side bar, A, and is usually extended and strengthened by means of a strong cast plate, *v*, fastened to the inside of said side bar.

The wheel L consists of a circular base-

plate, upon which are formed two spiral teeth, *t*, which commence at opposite points near the center and run in parallel spiral directions toward the periphery. Each tooth extends about once around the plate, and is made strong and broad, terminating by gradually-narrowing ends, designed to enter easily between the cogs or teeth of the rack. In this manner any accidental collision of the ends of the spirals with the rack-teeth is avoided, and a certain and smooth movement, when the crank is turned, effected.

As the rack-teeth are arranged across, or nearly across, the vertical diameter of the spiral-toothed wheel, they will be at all times engaged with the more horizontal portions of said spirals, and the engagement will be secure and hold at any point, unless the crank is turned, causing the spirals to move. The spirals therefore fasten the slide safely.

The difference in length between the side bars of the ladder need not be great to accommodate it to the usual uneven surfaces on which it would be found of use—in house-painting and other employments; but this difference is important, because if the side bars were of the same length the ladder would have to be turned to accommodate it to a change in the slope, as from a rise to a fall.

Other devices may be employed to give motion to the sliding foot in adjusting it—as, for instance, a worm-gear operated by a crank and pinion to move the rack of the foot; but the spiral-toothed wheel is preferred.

What I claim, and desire to secure by Letters Patent, is—

The combination, with a ladder having a short side bar, A, of a sliding foot, B, the rack *d*, and the spiral-toothed wheel L, engaging said rack and operating to move and hold the sliding foot, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES C. MOORE.

Witnesses:

HARRY H. ROBINSON,  
T. M. DICKIE.