

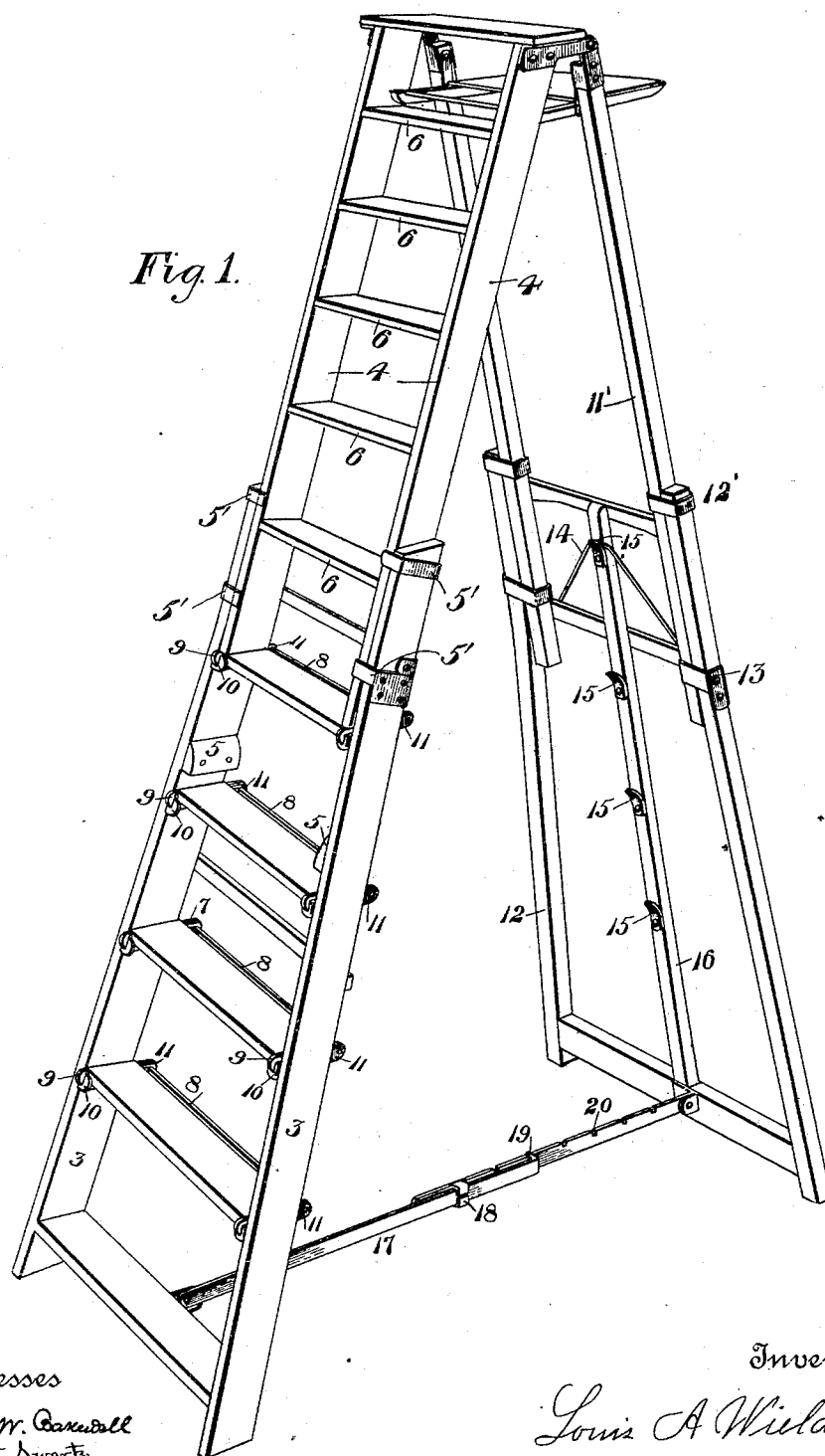
(No Model.)

2 Sheets—Sheet 1.

L. A. WIELAND.
STEP LADDER.

No. 489,059.

Patented Jan. 3, 1893.



Witnesses

Thomas W. Baxendale
Warren W. Swartz

Inventor

Louis A. Wieland

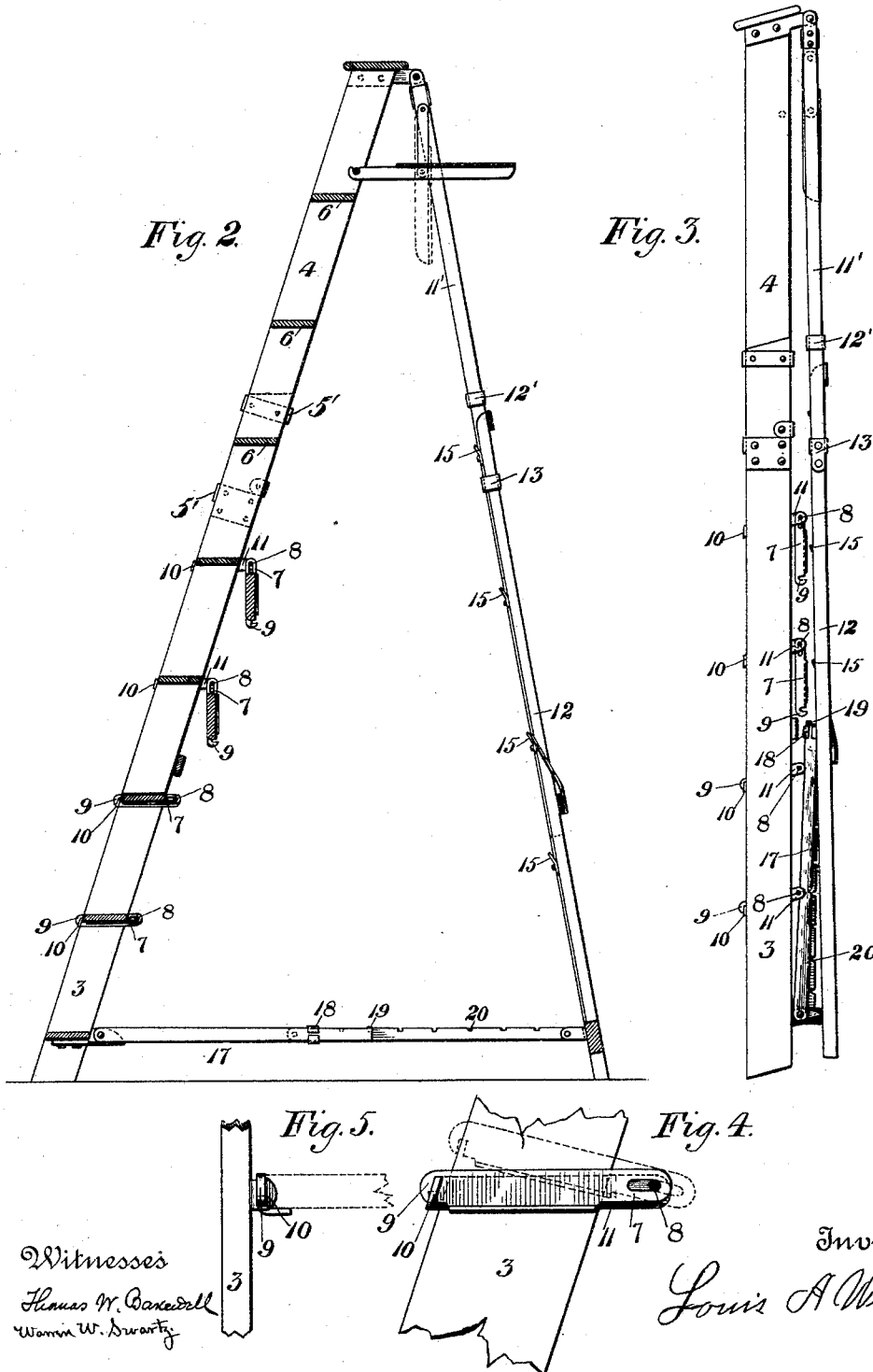
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UNITED STATES PATENT OFFICE.

LOUIS A. WIELAND, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO P. C. DEAN, OF SAME PLACE.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 489,059, dated January 3, 1893.

Application filed August 17, 1892. Serial No. 443,287. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. WIELAND, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Step-Ladders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a perspective view of a step-ladder constructed in accordance with my invention. Fig. 2 is a side elevation thereof in vertical section. Fig. 3 shows in side elevation the ladder closed. Fig. 4 is a detail view showing the detachable step-holding device in side elevation; and Fig. 5 shows the same in front elevation.

Like symbols of reference indicate like parts in each.

20 The object of my invention is to provide an adjustable step-ladder of simple construction, convenient in use and not apt to get out of order. As shown in the drawings, the ladder is made in extensible and adjustable parts.

25 The front legs of the ladder comprise two lower parts 3, 3, and two upper parts 4, 4, the latter set parallel to each other, and guided in their adjustment between the lower parts by cleats 5', so that they may be moved up or
30 down. The upper section of the ladder thus constituted is provided with fixed steps 6. The steps of the lower part of the ladder are not fixed, but are pivoted and constructed so that they can be set and held in horizontal
35 position, or unfastened and moved out of the path of the upper part of the legs, permitting the latter to be moved down to diminish the height of the ladder. When extended the lower ends of the upper parts of the legs rest
40 upon the topmost one of the steps then set horizontally, so that the steps themselves afford means for holding the ladder in the desired adjustment.

45 The steps are made movable in the following manner: Each step of the lower part of the ladder is provided at its end with a plate 7, having at its rear end a slot by which the step is secured pivotally to a cross-pin or bar 8 so as to be capable of slight horizontal motion thereon, and at the front end said plates
50 have hooks 9, adapted to be engaged with

projections or hooks 10 formed at the ends of plates 11 which are secured to the inner sides of the ladder-legs. The plates 11 also afford means at their rear ends for holding the cross- 55 pins or bars 8. When thus constructed, each step can be permitted to hang vertically from its cross-bar 8, or by turning it into a horizontal position and drawing it forward a little in the slots, as shown by full lines in Fig. 4, 60 the hooks 9 and 10 can be caused to engage and to hold the step horizontal. To release and drop the step, it is raised slightly so as to disengage the hooks, and is then moved back on the cross-bar or pin and finally dropped 65 into the vertical position shown in two of the steps in Fig. 2, in which the upper part of the ladder is shown to be supported by the third step from the bottom. In Fig. 1, I show the upper part of the ladder resting on the top 70 step of the bottom part, the ladder being therefore extended to full height. As shown in the drawings, the lower parts of the ladder legs are divergent, not parallel as are the upper parts thereof, and the upper parts are 75 guided and confined by the blocks 5, which are fixed to the inner sides of said divergent leg-parts. In this way a broader, securer foundation is afforded to the latter. The rear legs of the ladder, also made extensible and 80 adjustable, are made of upper parts 11', and lower parts 12, held together by cleats 12' and 13, so that they can be moved longitudinally relatively to each other, and the legs lengthened or shortened as desired. When adjusted 85 in proper position to conform to the adjustment of the front legs, they are held by suitable means, such as by a bail 14, secured to one of the leg parts, and adapted to engage projections or hooks 15 on a middle post 16 90 of the other. For the purpose of giving a broad rear support to the ladder, the lower parts of the legs below the cleats 13 may be divergent. The rear legs of the ladder are pivotally connected at their upper ends to the 95 front legs as shown, and to brace and hold the ladder when adjusted, I connect the lower parts of the front and rear legs by a brace-rod 17 pivoted at its ends to the ladder, and divided at the middle, one part of the brace-rod passing through and adapted to slide tele- 100 scopically within a swiveled guide-piece 18 on

the other. At the end of one of the parts of the brace-rod is a hook 19, adapted to be engaged with any one of a series of notches 20 in the other part thereof. This construction 5 makes it possible to adjust the brace-rod to any desired length and to hold it in such adjustment, and yet permits the legs of the ladder to be folded together as shown in Fig. 3.

The advantages of my invention will be appreciated by those having occasion to use it. 10

The ladder is cheap, light, easy to make, and can be adjusted in length and its legs opened or closed readily.

I claim:—

- 15 1. In an adjustable step-ladder, legs having upper and lower extensible parts, the lower part having pivoted steps, and means for holding them detachably in horizontal posi-

tion, the lower ends of the upper parts of the legs being longitudinally movable in the path 20 of the pivoted steps, and being adapted to be upheld thereby; substantially as and for the purposes described.

2. In an adjustable step-ladder, legs having upper and lower extensible parts, the lower 25 part having pivoted steps, loose pivot-bearings permitting horizontal motion of the steps, and detachable hooks; substantially as and for the purposes described.

In testimony whereof I have hereunto set 30 my hand this 12th day of August, A. D. 1892.

LOUIS A. WIELAND.

Witnesses:

W. B. CORWIN,
H. M. CORWIN.