March 16, 1926. 1,576,625

A. W. BLODGETT

STEPLADDER

Filed Jan. 14, 1925

Fig. 1.

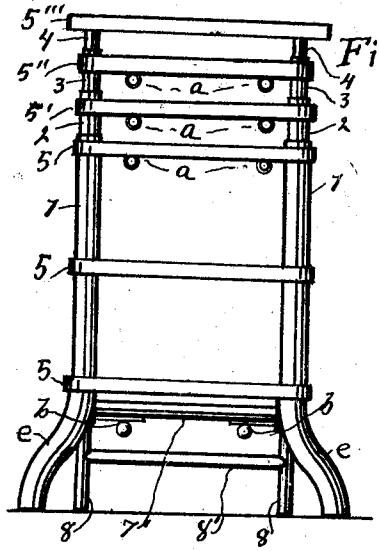


Fig. 2.

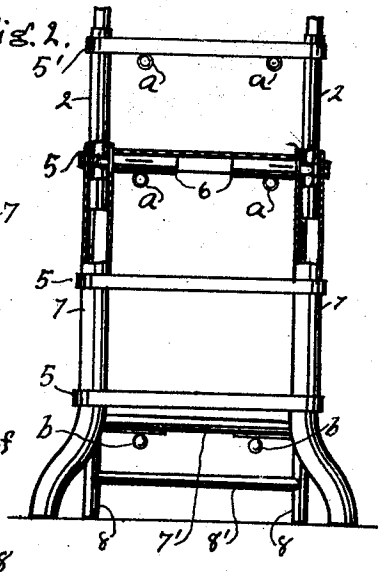


Fig. 5.

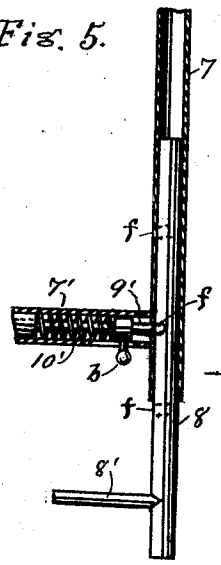


Fig. 6.

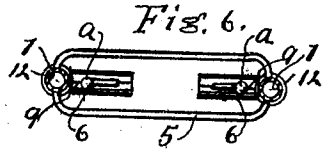


Fig. 4.

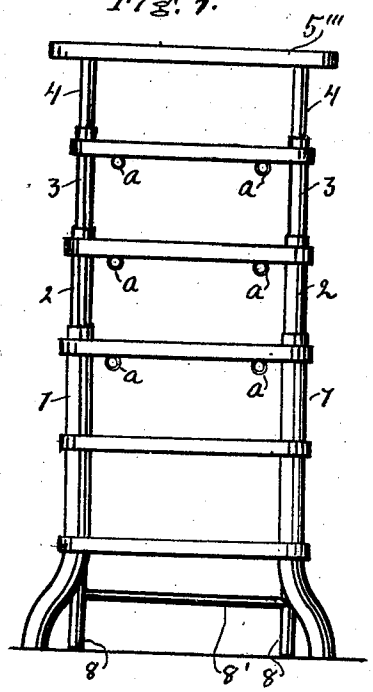


Fig. 7.

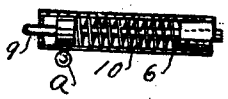


Fig. 3.

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UNITED STATES PATENT OFFICE.

ARTHUR WALDRON BLODGETT, OF GRAND RAPIDS, MICHIGAN.

STEPLADDER.

Application filed January 14, 1925. Serial No. 2,267.

To all whom it may concern:

Be it known that I, ARTHUR WALDRON BLODGETT, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Step Ladders, of which the following is a specification.

My invention relates to improvements in step ladders, and its objects are: first, to provide a means whereby an ordinary step ladder may be readily converted into an extension ladder; second, to provide a step ladder that may be extended or reduced to produce several different lengths of ladder; third, to provide a means whereby the extension or reduction of the ladder may be brought about a step at a time, and with which each extension step may be operated independently of the others.

I attain these objects by the mechanism and arrangement of parts shown in the accompanying drawing, in which Fig. 1 is a front elevation of the ladder in its reduced condition. Fig. 2 is a like view with the upper permanent step of the ladder shown in section to disclose the position and manner of operating the spring catches that hold the extensible steps when extended. Fig. 3 is a side elevation of the ladder extended. Fig. 4 is front elevation of the same. Fig. 5 is a vertical sectional view of the back brace of the ladder with the extension part in place indicating the manner of operating this part of the ladder. Fig. 6 is a bottom plan of one of the steps, and, Fig. 7 is a sectional elevation of one of the locking bolts with which the sections of the standards of the ladder are held in place when the ladder is extended.

Similar reference characters indicate similar parts throughout the several views.

In the construction of this ladder I use telescoping tubing for the side rails, the lower, or main pair of tubes, represented at 1, being of sufficient length to support several steps, as shown at 5, and each pair of telescoping sections of the side rails is designed to support one step as follows: The step 5′ is mounted upon the rail sections 2, which latter telescope into 1; the step 5″ is mounted upon the rail sections 3, and the step 5‴ is mounted upon the rail sections 4, as indicated in Figs. 1, 3 and 4.

I prefer that the steps of this ladder be made of sheet metal with the edges pressed downwardly at right angles with the tops thereof, and the ends of said steps made to form ferrules, 12, that will pass around the side rails of the ladder and are securely connected therewith as by spot welding, or kindred process. To the lower sides of certain of these steps I secure spring catches, 6, having bolts 9 that are designed to be passed through holes in the sides of the rails that support said step, and into holes in the next upper rail sections as indicated in the third step up in Fig. 2, and as shown in Fig. 6 rendering it impossible to move either section longitudinally relative to the other sections. The bolts 9 of these catches, are forced into position through the holes in the rails by means of springs 10, and are forced or carried backwards out of said holes by drawing backwardly upon the knobs *a*, and each section of the ladder is operated separately and independently of all other sections of the ladder.

The back brace is composed of two pairs of telescoping tubes or standards, 7 and 8, the tubes 7 being pivotally connected with the top step 5‴ as at *c*, and being tied together, and supported by a brace 7′, which latter is provided with spring catches, as 9′ actuated by the springs 10′ and knobs *b* to pass into the holes indicated at *f* through the tube and into the tube 8, the tubes or standards being connected and supported by a cross girt or brace 8′, so the two tubes, 8, must always move together. The standards 8 may be made of tubing, or of solid metal bars, as desired.

The ladder proper, and the back braces or legs may be temporarily tied together and braced by any of the well known devices for the purpose, as by the shelf or brace 13, hinged at *d* for easy adjustment.

In the construction of this ladder it is necessary that the side rails shall stand exactly parallel, hence I find it advisable to flare the lower ends of the rails outwardly, as shown at *e*, to supply sufficient width of base to avert the danger of the ladder tipping over sidewise, or becoming unsteady in its sidewise support when in use.

Having thus fully described my invention, what I claim as new in the art, is:

1. In step ladder construction, side rails each made of several sections of round tubing having solid walls and telescoped together in pairs, steps made of sheet metal with downwardly folded edges and having

tubular bearings at the ends adapted to be welded around the side rail sections, each side rail section having a hole through it on one side immediately below the end of the step, and each upper pair of side rail sections having corresponding holes near its lower ends, spring actuated latches mounted upon the lower side of each top step on each section of the ladder in position to be made to pass into the holes in the rail sections and hold each section of the ladder in desired positions so the ladder cannot be shortened or extended when the sections are locked in place.

2. In combination with the elements covered in claim 1, extensible back braces pivotally connected with the top of the ladder, said back braces made of two sections, the lower section made to telescope into the upper section, cross girts tying the side rails of each section together at their lower ends, and a convertible brace connected with the ladder and with the back braces for holding the ladder in rigid position when extended and in use.

Signed at Grand Rapids, Michigan, January 9th, 1925.

ARTHUR WALDRON BLODGETT.