

(No Model.)

H. V. VANDERBILT.
STEP LADDER.

No. 480,224.

Patented Aug. 2, 1892.

Fig: 1.

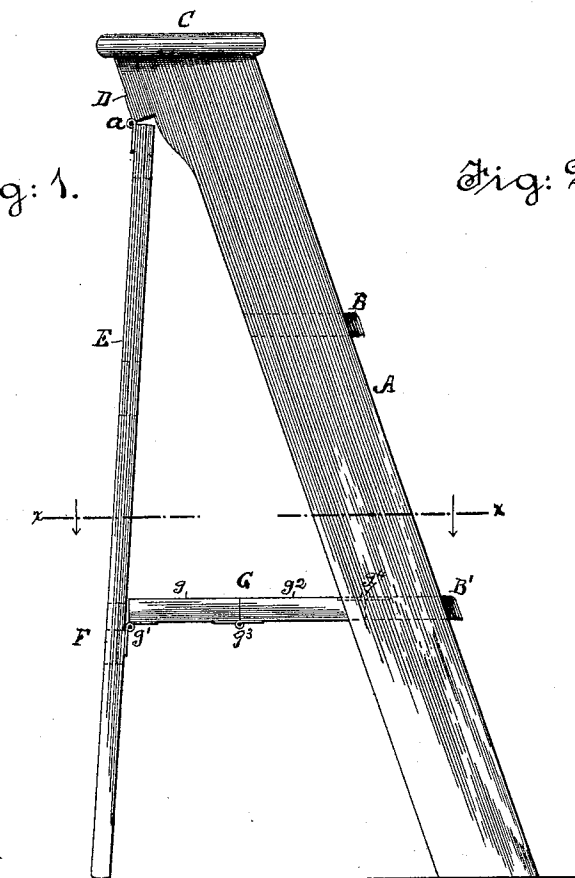


Fig: 2.

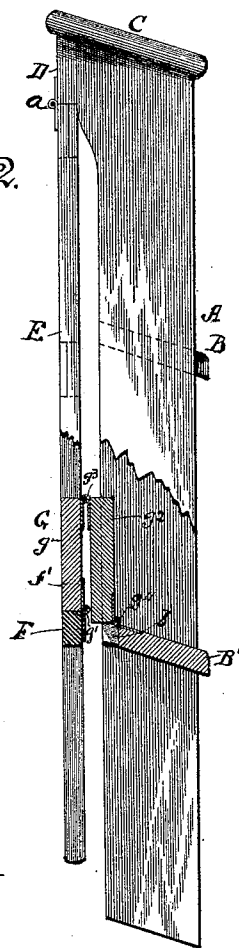
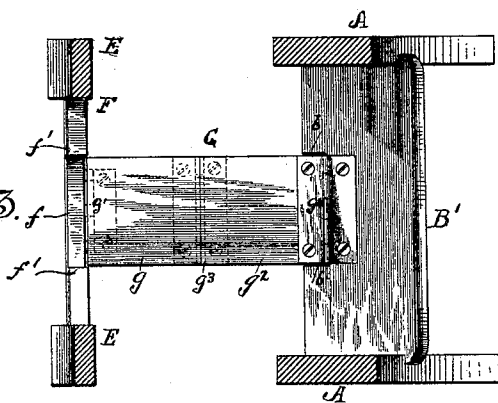


Fig: 3.



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UNITED STATES PATENT OFFICE.

HENRY V. VANDERBILT, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF
AND SADIE A. BUNNELL, OF SAME PLACE.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 480,224, dated August 2, 1892.

Application filed August 24, 1891. Serial No. 403,630. (No model.)

To all whom it may concern:

Be it known that I, HENRY V. VANDERBILT, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Step-Ladders, of which the following is a full, clear, and exact specification.

The object of my invention is to provide step-ladders having such construction that they will be more firm and rigid than the common step-ladders in use and more substantial, both when opened for use and when closed; and to this end my invention consists of a step-ladder wherein the hinged legs are connected to one of the steps of the ladder by a jointed connection hinged in the center and hinged at one end to the rear edge of the step and at the other in a recess formed in the edge of the cross-piece which connects the legs, which recess forms shoulders, which act as braces to the sides of the jointed connection and protect the hinges and prevent lateral strain thereon when the ladder is closed. A similar recess is formed in the rear edge of the step to form shoulders, which prevent lateral deflection of the jointed connection and protect the hinges when the ladder is opened, so that whether closed or opened the jointed connection is braced at its edges by firm and rigid shoulders of the step and the cross-piece of the legs.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which like letters of reference indicate like parts in all of the figures.

Figure 1 is a side elevation of my improved step-ladder, showing the same open for use. Fig. 2 is a broken side elevation showing the same closed, and Fig. 3 is a sectional plan view taken on line *x x* of Fig. 1.

The body of the step-ladder is composed of the two side pieces *A A*, provided with steps *BB'* (as many as desired) and joined at the top by the top step or landing *C*.

Underneath the landing and connected to the rear edges of the side pieces *A* is a back piece *D*, to which the two legs *E E* are secured by hinges *a a*. The legs are connected together opposite the step *B'* by a cross-piece *F*, which is recessed in the center, as shown at *f*, to form the shoulders *f' f'*. In this recess and fitting the same is secured by a hinge *g'* the rear section *g* of the cen-

trally-jointed connection *G*, which connects the cross-piece *F* with the step *B'*. The said jointed connection is composed of the said section *g* and a duplicate section *g'*, attached together end to end by the central hinge *g'*. The section *g'* is attached to the step *B'* by a hinge *g'*, and the edges of the said step are recessed, as shown, to form shoulders *b b* to embrace the edges of the said section *g'* when the ladder is open, as shown in Fig. 3. By this construction any side strain on the jointed sections when the ladder is closed will be largely taken by the shoulders *f'*, and the hinge *g'* is thereby relieved of strain, and when the ladder is opened any side strain on the legs tending to deflect the jointed connection will likewise be resisted by the shoulders *b b* of the step. Furthermore, by thus hinging the ends of the jointed connection in recesses the ladder may be folded more compactly than would otherwise be possible.

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

1. A step ladder having its legs provided with a cross-piece recessed to form shoulders, combined with a jointed connection hinged at one end in said recess to be embraced at its side edges by said shoulders and hinged at its opposite end to one of the steps of the ladder, substantially as described.

2. A step-ladder having its legs provided with a cross-piece and the body of the ladder provided with a step parallel with said cross-piece and recessed in its rear edge to form shoulders, in combination with a jointed connection hinged at one end to said cross-piece and hinged at the other to the step in said recess to be embraced at its side edges by said shoulders, substantially as described.

3. A step-ladder having its legs provided with a cross-piece centrally recessed to form shoulders and a step parallel with said cross-piece and centrally recessed at its rear edge to form shoulders, in combination with a jointed connection hinged at one end to the cross-piece in the recess therein and hinged at the other end to the step in the recess formed therein, substantially as described.

HENRY V. VANDERBILT.

Witnesses:

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W. H. TYLER.