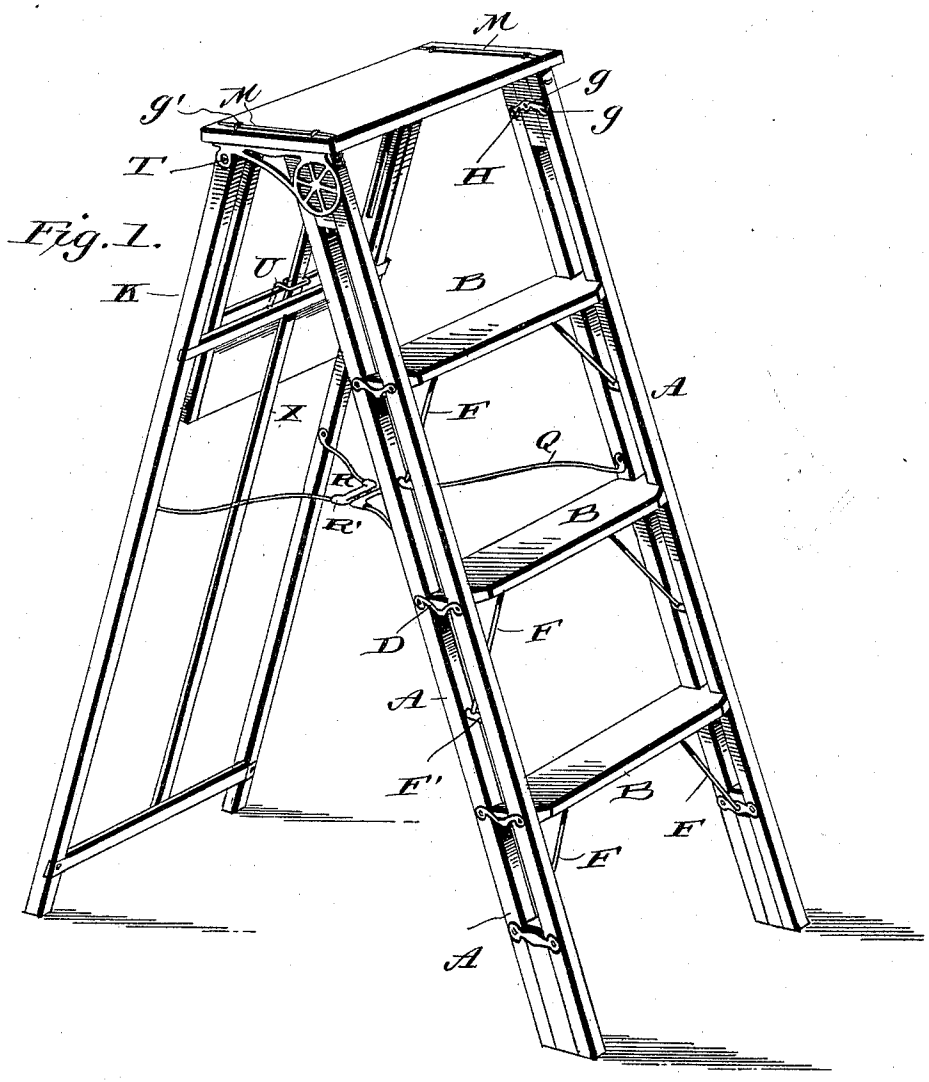
(No Model.) 2 Sheets—Sheet 1.

T. F. McBRIDE.

STEP LADDER.

No. 598,430. Patented Feb. 1, 1898.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

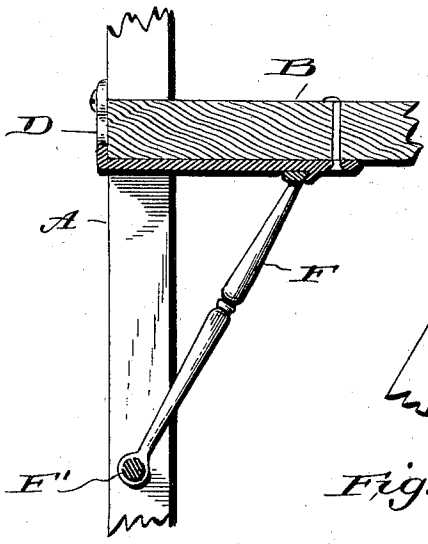


Fig. 5.

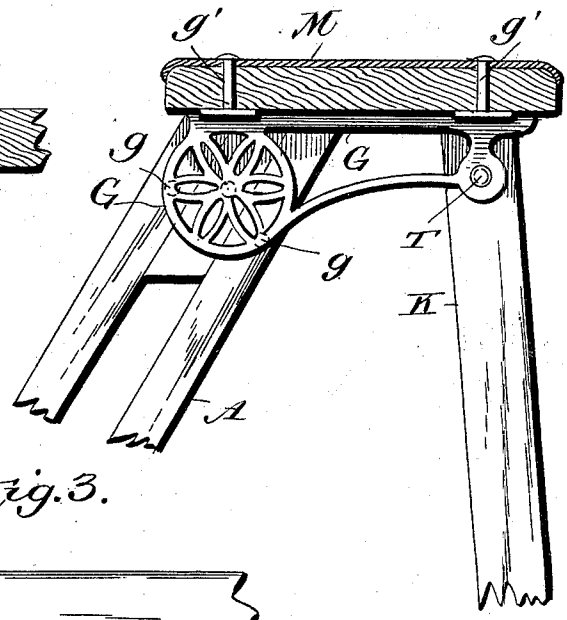


Fig. 3.

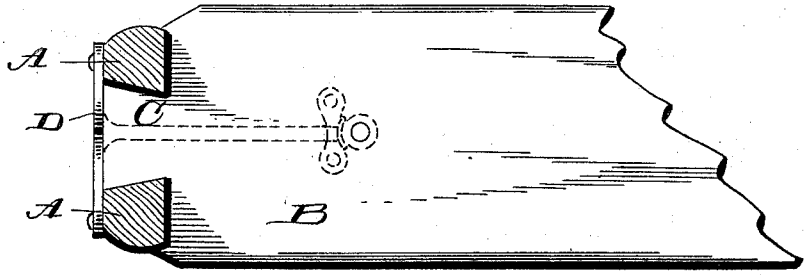
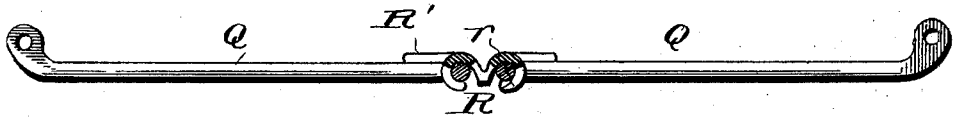


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS F. McBRIDE, OF CLINTON, NEW YORK.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 598,430, dated February 1, 1898.

Application filed March 16, 1897. Serial No. 627,901. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. McBRIDE, a citizen of the United States, residing at Clinton, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Step-Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in step-ladders, and especially to a ladder having a peculiar construction in which a hinging mechanism is utilized, whereby the ladder may be easily folded and when open the ladder will be prevented from slipping or collapsing and at the same time will be thoroughly braced diagonally, the ends of the braces where secured to the legs being so constructed as to form a gravity-lock.

A further part of the invention consists in the peculiar construction of the side pieces, which are so shaped that when they are put together they form a dovetailed slot in which the steps are fitted, being dadoed into the sides and held in place by malleable-iron clips which extend under the steps and interlock with braces which are suitably mounted.

To these ends and to such others as the invention may pertain the same consists, further, in the novel construction, combination, and adaptation of the parts, as will be hereinafter more fully described, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which drawings similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a perspective view of a step-ladder embodying my invention shown as locked open. Figs. 2 and 3 are details showing a step-clip and brace interlocking with the clip; Fig. 4, a detail view of the hinged braces. Fig. 5 is a detail of a side brace having integral lugs.

Reference now being had to the details of the drawings by letter, A A designate the side strips which support the steps B, and each of the said strips on its inner edge is tapered, coming to a ridge, as shown at C, provided to form a dovetailed connection with the end of the step B, as shown in the drawings. Opposite the shouldered end portions of each step is secured a brace-clip D, secured to the strips A by screws passing through into the step or tread, while a portion of the said clip is extended under the step and its end held to the under side of the step by means of the slightly-depressed end of a brace F engaging over the extension of the slip. The other end of the said brace has projections F′ extending at right angles to the shank portion of the brace and engaging holes in the tapering edges of the strips A.

Near the upper ends of the step-carrying strips on either side of the ladder is carried a brace G, having a series of integral lugs *g* thereon, which are designed to pass through apertures in the strips and have clenched to their ends plates or brace-strips H, while to an extended portion of each of the said braces G is pivoted an end of a hinged leg-strip K. Passing over the upper surface of the top tread or step of the ladder, near each end thereof, is a brace-piece M, which is clenched to the ends of the integral lugs *g′* on the braces G, and the ends of the braces M have their ends bent over the edges of the steps to which they are connected.

The hinged brace-strips comprise the metal rods Q, which are bent in the shape illustrated in the drawings, with the middle portions of each parallel with and adjacent to each other, and these parallel portions are journaled in loops formed by the arms *r* in the malleable plate R. Extending laterally from the said plate R are the lugs R′, which serve as stops, allowing the said hinge-strips to bend in but one direction, and that upward, whereby the ladder may be readily folded.

The ends of the hinge brace-rods, it will be noted, are slightly turned upward where they are secured to the side step-supporting strips, which is for the purpose of forming a gravity-lock which will prevent the ladder from closing when in use, and requires raising slightly when it is wished to close the ladder.

In connection with my step-ladder I employ an adjustable shelf, which is mounted on a rod T, which passes through a slotted portion in the arm of each arm of the shelf, this being provided to allow the shelf to be held in

a horizontal position by means of pushing the arms of the shelf back under the upper step. In order to lock the shelf down and prevent same from swinging out when not in use, I provide a clip U, which is looped about the central brace X, with a downwardly-extending end which is bent at right angles to its looped portion, said end being designed to engage over the shelf, as shown.

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

1. In a step-ladder, the combination with the step-supporting strips, the brace-plates secured thereto, legs pivoted at their upper ends to the said plates, the plate R having stop-lugs R′, the hinged brace-rods Q pivoted thereto, the ends of the rods Q being upwardly bent and pivoted to the legs and supporting-strips, for the purpose set forth.

2. In a step-ladder, the combination with the side strips A, A, tapered on their inner edges and dovetailed to the steps, of a clip D having an extended portion passing under a step, a brace F held at its lower end between the said strips A, and its upper end bearing against a lug near the inner end of the brace D, substantially as shown and described.

3. In a step-ladder, the combination with the legs, the shelf having elongated slots, a rod adapted to work therein, and the retaining-clip U, having an end which is adapted to engage over and hold down the said shelf, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. McBRIDE.

Witnesses:
H. W. MAHAN,
CHARLES T. IVES.