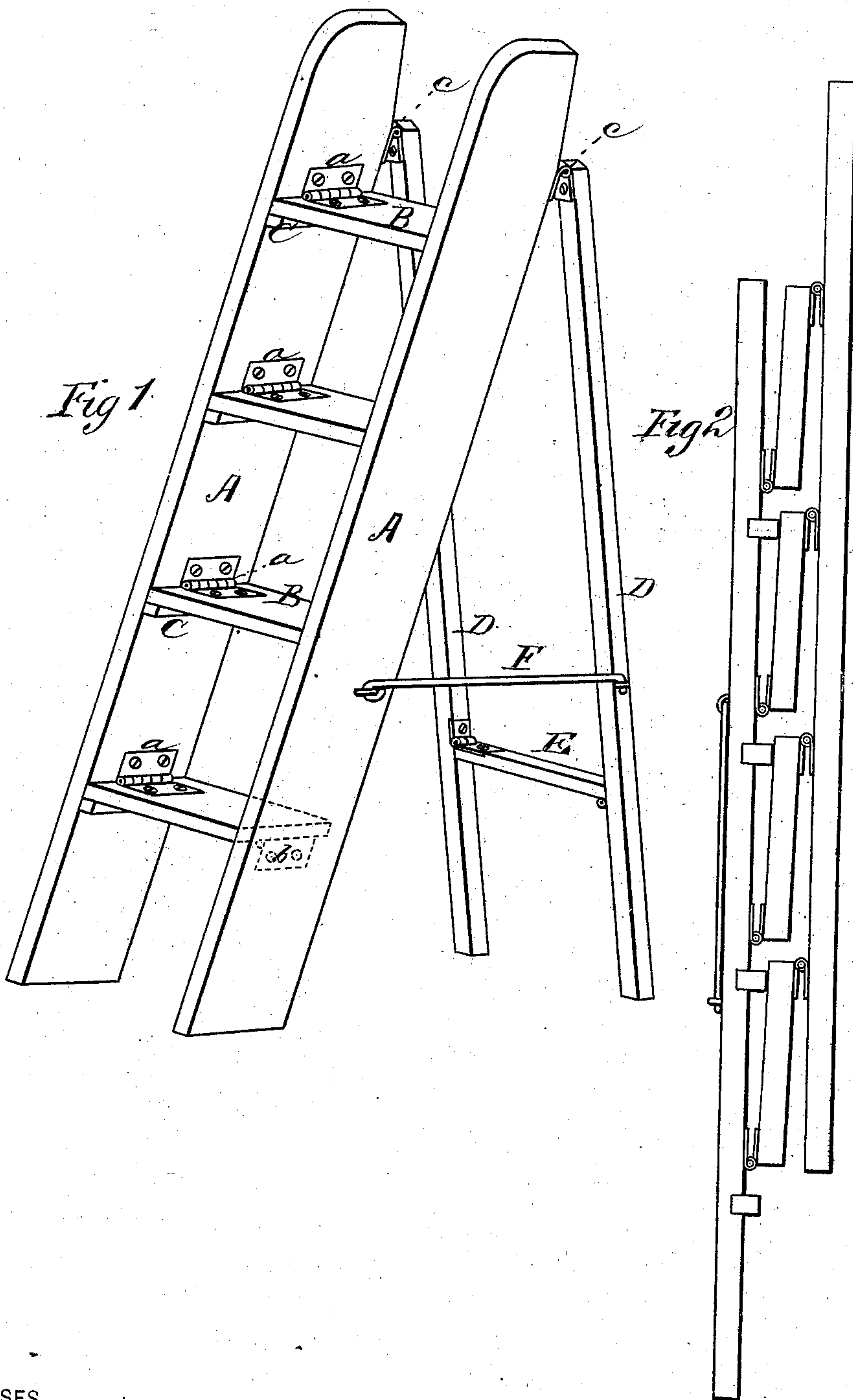


G. GAY.
STEP-LADDER.

No. 193 081.

Patented July 17, 1877.



WITNESSES

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GEORGE GAY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEP-LADDERS.

Specification forming part of Letters Patent No. **193,081**, dated July 17, 1877; application filed December 2, 1876.

To all whom it may concern:

Be it known that I, GEORGE GAY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and valuable Improvement in Step-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 perspective view of my step-ladder, and Fig. 2 a side view thereof, folded.

This invention has relation to step-ladders, and its object is to provide a ladder which will be steady and strong when in use, and yet can be folded in such a manner as to bring the sides toward each other, so that it can be laid along the wall of a store or apartment and will occupy but little space. A further object is to facilitate transportation.

The invention consists in the construction and novel arrangement of the hinges on the upper and under sides of the respective ends of each step; of the supporting-cleats on one side of the ladder under those ends of the steps which have their hinges on the upper sides; of the braces hinged to the side pieces of the ladder in the planes thereof; and, in connection therewith, of the transverse connecting bar or bars, and the hooks or hinged braces for steadying all the parts when set upright, as hereinafter shown and described.

In the accompanying drawings, the letter A represents the side pieces of the step-ladder. B indicates the steps thereof, which are provided with hinges *a* at one end above the steps, and with hinges *b* at the other end below the steps, so that the latter will readily fold upward toward the hinges *a*, when the sides of the ladder are brought toward each other.

C C represent transverse cleats, which are secured to the inside of the side piece of the ladder, to which the top hinges *a* of the steps are connected. These cleats are preferably let into the side piece, and serve to support the steps at this end. At the other end the steps are supported by the hinges *b*,

which are underneath, and form sufficient ledges for this purpose.

D D are the brace-legs of the ladder. These are hinged to the rear edges of the side pieces A, as shown at *c*, so as to readily fold in the planes of said side pieces toward said edges, and come in contact therewith. These brace-legs are connected by a brace or braces, E, hinged at opposite ends above and below, as described above, in the case of the steps B so so that the brace-legs can be brought toward each other laterally, when the side pieces are approximated in this manner.

On each side of the ladder is an ordinary hooked brace, F, which, being connected with the side piece and brace-leg of that side, serves to keep these parts in relative position. Sometimes it is intended to use jointed braces similar in principle to those employed in the construction of folding buggy-tops, in order to avoid hooking and unhooking.

To secure additional firmness, it may sometimes be advisable to introduce an oblique transverse hook or brace between the side pieces A. This may be located above the upper step, below the lower step, or between any two steps. It is designed to serve as a stay to prevent the side pieces from coming together when in position between them.

By the construction described the ladder is readily folded in three thicknesses or layers, the brace-legs lying in the same layers with the side pieces, and its narrow compass adapts it to be conveniently carried.

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

A laterally compressible or folding step-ladder, having side pieces A, and hinged folding steps B, legs D, hinged to the rear edges of said side pieces to fold in the planes thereof, and folding transverse brace E, substantially as specified.

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

GEORGE GAY.

Witnesses:

ALLEN H. GANGEWER,
DE LANCEY G. WALKER.