

(No Model.)

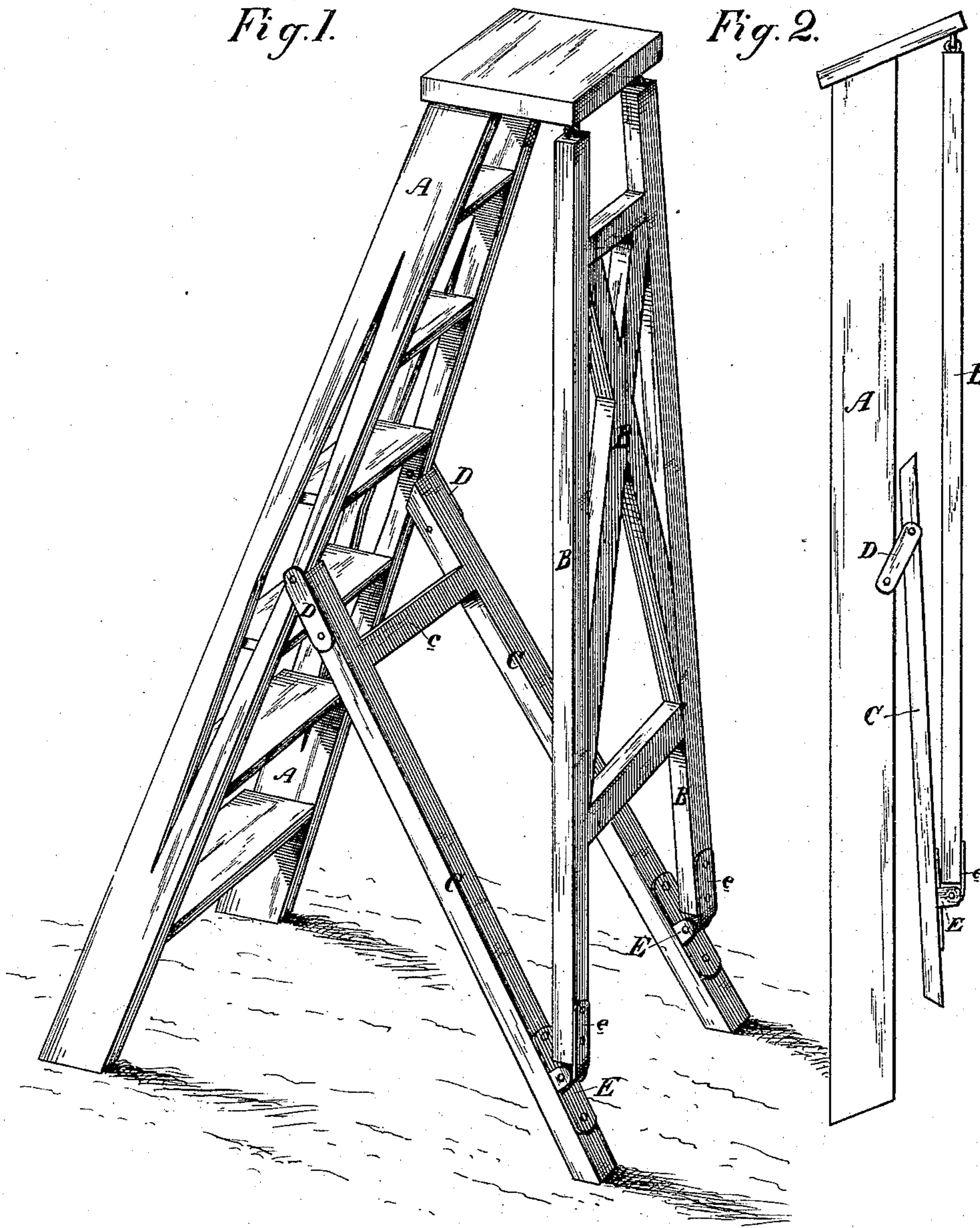
L. S. TIBBALS.
STEP LADDER.

No. 311,272.

Patented Jan. 27, 1885.

Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

LAYTON S. TIBBALS, OF MISSION SAN JOSÉ, CALIFORNIA.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 311,272, dated January 27, 1885.

Application filed November 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, LAYTON S. TIBBALS, of Mission San José, county of Alameda and State of California, have invented an Improvement in Step-Ladders; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of step-ladders; and it consists in novel and peculiar braces or brace-legs between the folding legs and the sides of the ladder, whereby they are held separated when in use, and may fold together readily when the ladder is to be transported or put away.

The object of my invention is to provide a simple, economical, and effective brace for step-ladders, which may readily be applied, and is of strength enough to secure perfect safety in the use of the ladders.

Referring to the accompanying drawings, Figure 1 is a perspective view of my ladder when opened. Fig. 2 is a side elevation of same when closed.

A is the front or step portion of the ladder, made of the usual side pieces and intervening step-pieces, and B are the folding legs, hinged suitably to the top of the front portion. C are the braces or brace-legs, consisting of two parallel strips, which may or may not be independent of each other, though to insure their action in unison I prefer to connect them by the cross-piece *c*. The tops of the brace-legs are beveled to the angle of the inclination of the sides of the front portion, A, where- by they are adapted to lie close thereto, Fig. 1, and they are connected with said sides by means of the links D, pivoted to both braces and sides. The distance between the pivot-points of the links is such that when moved upward to and beyond horizontal position they throw the brace-legs away from the sides, as shown in Fig. 2; but when said brace-legs are in close contact with the sides the links lie parallel with and alongside of the brace-legs. The lower ends of the brace-legs are beveled to lie flat upon the floor, and the lower ends of the legs B are pivoted or hinged to said brace-legs in such a manner as to allow both pairs of legs to fold toward and lie parallel with the front A, while at the same time the

legs B are furnished with support by the brace-legs when opened, as shown in Fig. 1.

The hinge I prefer to use consists of a bracket, E, secured to the brace legs, and having pivoted between its ears an arm or strap, *e*, which is secured to the legs B. This forms a simple and strong hinge-connection, the further advantage of which lies in its ready applicability to any step-ladder.

The brace-legs with the hinge and links attached may be manufactured in quantity and sold for application by the owner himself to his ladder, the only adjustment required being the shortening of the legs and the attachment by screws or bolts of the links D and arms *e* of the hinge to their respective parts.

It will be observed by reference to Fig. 1 that when the ladder is opened out or extended ready for use the weight is mainly directed downward against the tops of the brace-legs, which, by lying close to the sides of the front, are in position to resist the strain, and cannot yield without moving away from their bearings, which they cannot do against their links and the strain or weight exerted downwardly through the legs B. As the person using the ladder descends he presses with his thumbs against the tops of the brace-legs and throws them backward and upward away from their bearings, whereby the two pairs of legs can be folded against the front.

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

1. In a step-ladder, the brace-legs C, their tops bearing against the sides of the front of the ladder and connected therewith by pivoted links, and their lower ends resting on the floor and supporting and hinged to the folding legs of the ladder, substantially as herein described.

2. The combination, in a step-ladder, with the front A and hinged folding legs B, of the brace-legs C, secured at their upper ends to the sides of the front, and supporting near their lower ends the legs B; substantially as herein described.

3. The combination, in a step-ladder, with the front A and hinged folding legs B, of the

brace-legs C, supporting and hinged to the legs B, having beveled upper ends adapted to bear against the sides of the front A, and the pivoted links D, by which the tops of the
5 brace-legs C are connected with the front, substantially as herein described.

4. In a step-ladder, the front A and folding legs B, in combination with the brace-legs C, the pivoted links D, by which their beveled
10 tops are connected with the sides of the

front, and the bracket E and pivoted arm e, by which the legs B are supported and hinged to the brace-legs, substantially as herein described.

In witness whereof I have hereunto set my
hand. 15

LAYTON S. TIBBALS.

Witnesses:

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