(No Model.)

H. P. SPENCER.

STEP LADDER.

No. 288,883. Patented Nov. 20, 1883.

Fig. 1.

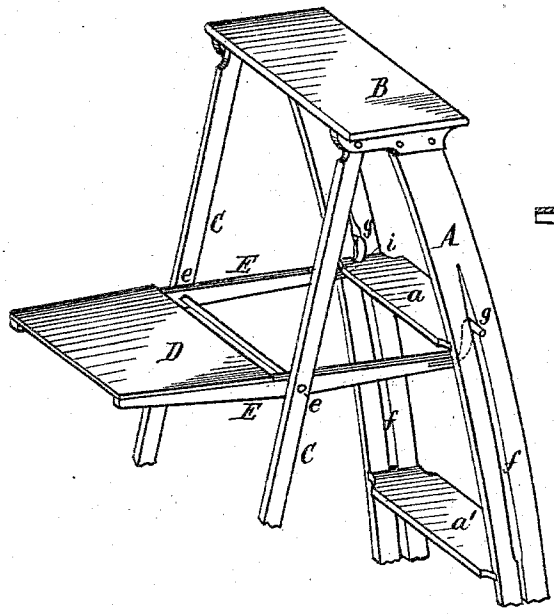


Fig. 2.

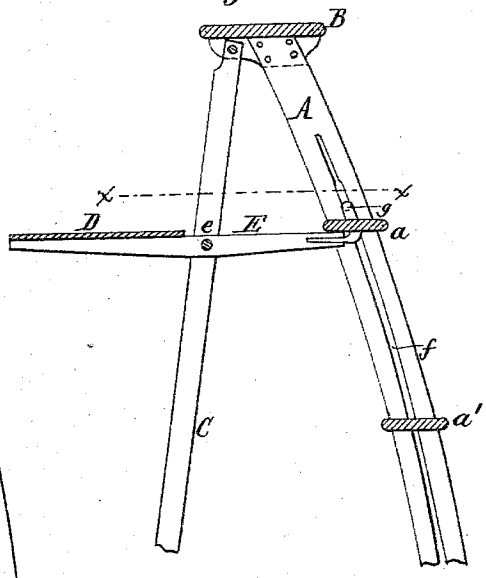


Fig. 3.

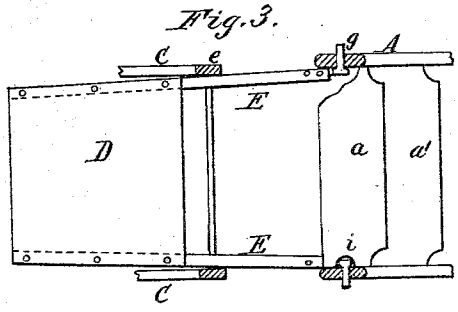


Fig. 4.

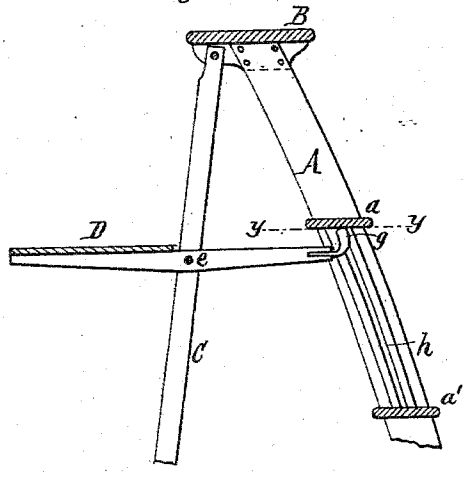
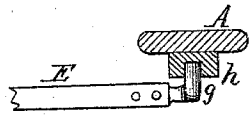


Fig. 5.



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UNITED STATES PATENT OFFICE.

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STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 288,883, dated November 20, 1883.

Application filed May 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. SPENCER, of Forestville, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Step-Ladders, of which the following is a specification.

This invention relates to an improvement in that class of step-ladders in which the hinged standard is provided with a folding shelf or plate, which is adapted to support a pail or other vessel in using the ladder.

The object of my invention is to provide a simple means of connecting the shelf with the standard and body of the ladder in such manner that the supporting-bars of the folding shelf form at the same time braces, whereby the hinged standard is held away from the body of the ladder when unfolded.

My invention consists of the improvements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the upper part of a ladder provided with my improvements. Fig. 2 is a sectional elevation of the same. Fig. 3 is a horizontal section in line *x x*, Fig. 2. Fig. 4 is a sectional elevation of a modified construction of my improvement. Fig. 5 is a horizontal section, on an enlarged scale, in line *y y*, Fig. 4.

Like letters of reference refer to like parts in the several figures.

A A represent the side pieces of the body of the step-ladder; *a a'*, the steps secured between the side pieces, and B the top plate, which connects the upper ends of the side pieces A A.

C C represent the side bars of the hinged standard, pivoted to the under side of the top plate, B.

D is the folding shelf or plate, and E E are two side bars, to the outer portions of which the shelf D is secured. The side bars E are pivoted to the side bars C C of the standard at *e*, and extend with their opposite ends between the side bars A A of the body of the ladder.

As represented in Figs. 1, 2, and 3, the side bars A are each divided longitudinally by a slit, *f*, which is formed by sawing into the side bar or by constructing the side bar in two separate parts.

g is a horizontal stud or bolt, which is secured to the end of each side bar E and projects outwardly through the adjacent slit in the side piece A. The studs *g* are elevated above the ends of the side bars E, so that when the shelf is unfolded, ready for operation, as represented in Fig. 1, the studs *g* will be located above a horizontal plane drawn through the pivot *e* of the side bars E, whereby the pivoted standard is prevented from being closed accidentally, as the closing movement of the pivoted standard would tend to force the studs *g* upwardly in the slit *f*, and which movement of the studs is prevented by the contraction of the slits *f*, beginning at the normal position of the studs *g*. Upon moving the studs *g* outwardly in the slits *f*, the shelf D is raised and folded between the side bars C of the standard, and the latter permitted to fold against the body of the ladder. It will be seen, therefore, that the side bars E not only support the shelf D, but also serve as braces, whereby the hinged standard is secured in position when unfolded.

Instead of forming the slits *f* in the side pieces A of the body of the ladder, as hereinbefore described, the side pieces A may be provided with grooved guides or ways *h* on their inner sides, in which the studs *g* move, as represented in Figs. 4 and 5.

When the upper step, *a*, is located below the normal position of the studs *g*, as represented in Figs. 1, 2, and 3, the step *a* is provided with openings *i*, through which project the upper ends of the curved shanks on which the studs *g* are formed, and whereby the studs are secured to the ends of the side bars E.

I claim as my invention—

1. The combination, with the side pieces A of the body of the ladder, provided with guide slits or grooves, and the side bars C C of the hinged standard, of the side bars E, pivoted to the side pieces C, and provided at their opposite ends with projections *g*, moving in the guide slits or ways of the side pieces A, substantially as set forth.

2. The combination, with the side pieces

A, provided with suitable guide slits or ways, of the side pieces C C, side bars E, pivoted thereto and provided with a shelf, D, and projections *g*, substantially as set forth.

3. The combination, with the body and hinged standard of the ladder, of a folding shelf secured to braces which are pivoted to the standard and guided on the body of the ladder, substantially as set forth.

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