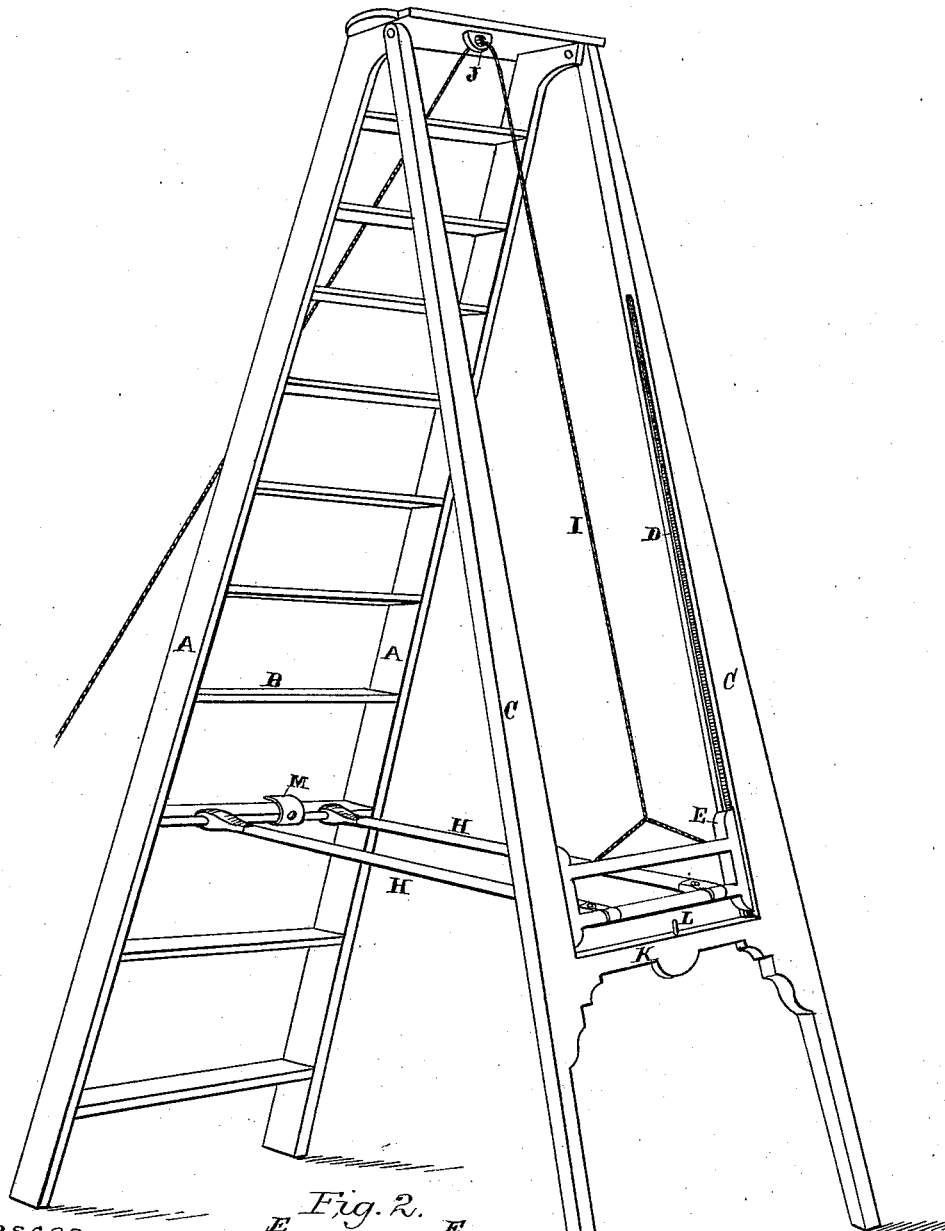


E. M. BENJAMIN.  
Step-Ladder.

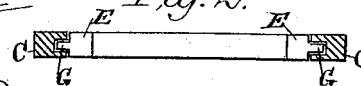
No. 211,546.

Patented Jan. 21, 1879.

*Fig. 1.*



*Fig. 2.*



Witnesses

*Chas G. Hale.*  
*Frank A. Brooks*

Inventor

*Elias M. Benjamin*  
*by R. W. [unclear]*

# UNITED STATES PATENT OFFICE.

ERASTUS M. BENJAMIN, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN STEP-LADDERS.

Specification forming part of Letters Patent No. **211,546**, dated January 21, 1879; application filed June 11, 1878.

*To all whom it may concern:*

Be it known that I, ERASTUS M. BENJAMIN, of the city and county of San Francisco, and State of California, have invented an Improved Step-Ladder; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing.

My invention relates to certain improvements in step-ladders; and consists in combining with a slide moving in grooves on the supports or bracing-standards, and connected with the steps by means of arms, a cord attached to the slide, which leads to a ring or pulley on the top step, by means of which the slide may be moved up in its grooves, and the supports or standards thus brought back against the steps, leaving the ladder in a compact form when not in use; also, in a locking device, as hereinafter described, for retaining the ladder in a closed condition.

Referring to the accompanying drawing, Figure 1 represents my improved ladder in perspective, and Fig. 2 a horizontal section of the bracing-standards.

Let A represent the side frames, and B the steps, of my improved ladder. To the upper end of the side frames are attached the braces or supports C, by means of pins or hinges, which allow said braces or supports to be swung to or from the side frames of the ladder. The braces or supports are somewhat enlarged along their inner edges, so that while the feet are spread apart to steady the ladder their inner edges will be parallel, and a slot or groove, D, may be made in these inner edges, which will serve as a guide and to hold the slide. Within these grooves the ends of the slide E move. This slide is formed of two cross-bars with vertical end pieces, and have flanges or tongues G formed on them, which fit in the grooves D. Hinged or swiveled to the lower cross-bar of the slides are two arms, H, which are also hinged to or swiveled on the rear edge of one of the steps B of the ladder. A cord, I, is attached to the upper part of the slide, which passes through a ring or pulley, J, on the top step, by means of which the slide may be drawn up when it is desired to close the ladder. A cross-bar, K, joins the

two braces or supports C together at their lower ends, and has on its central upper edge a lug or pin, L, which engages with a spring-catch, M, on one of the steps.

When it is desired to use the ladder, by lifting the spring-catch and releasing it from the lug on the cross-bar the lower ends of the braces or supports C may be moved away from the side frames of the step portion. As this is done the slide drops down in the grooves, carrying the outer ends of the arms H with it until they assume a horizontal position. This holds the supports in position and steadies the ladder, which cannot be closed until the sliding frame is drawn up by the cord, thus drawing the supports toward the side frames A until the spring-catch engages with the lug, as before described.

By this means I provide a neat and convenient ladder, which is always ready for service, and which will never close up unless it is desired to have it do so. The braces are so arranged that they hold the supports firmly and strongly when the ladder is in use, so that there is no liability of its twisting out of shape; and by means of the slide moving in the groove I am enabled to so unite all parts of the ladder that it becomes, as it were, a solid frame, which cannot be separated.

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

1. The step-ladder with its sides A, braces C, slide E, and arms H, said braces having a cross-bar, K, with its lug or pin L, and the spring-catch M upon the step to automatically lock the ladder when closed, substantially as herein described.

2. The step-ladder having the sides A and the braces C, grooved, as shown, in combination with the slide E, with its braces H, and the operating-cord I, and pulley J, constructed to operate substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

ERASTUS M. BENJAMIN.

Witnesses:

GEO. H. STRONG,  
FRANK A. BROOKS.