

(No Model.)

W. & H. CUMMER.  
LADDER.

No. 355,683.

Patented Jan. 11, 1887.

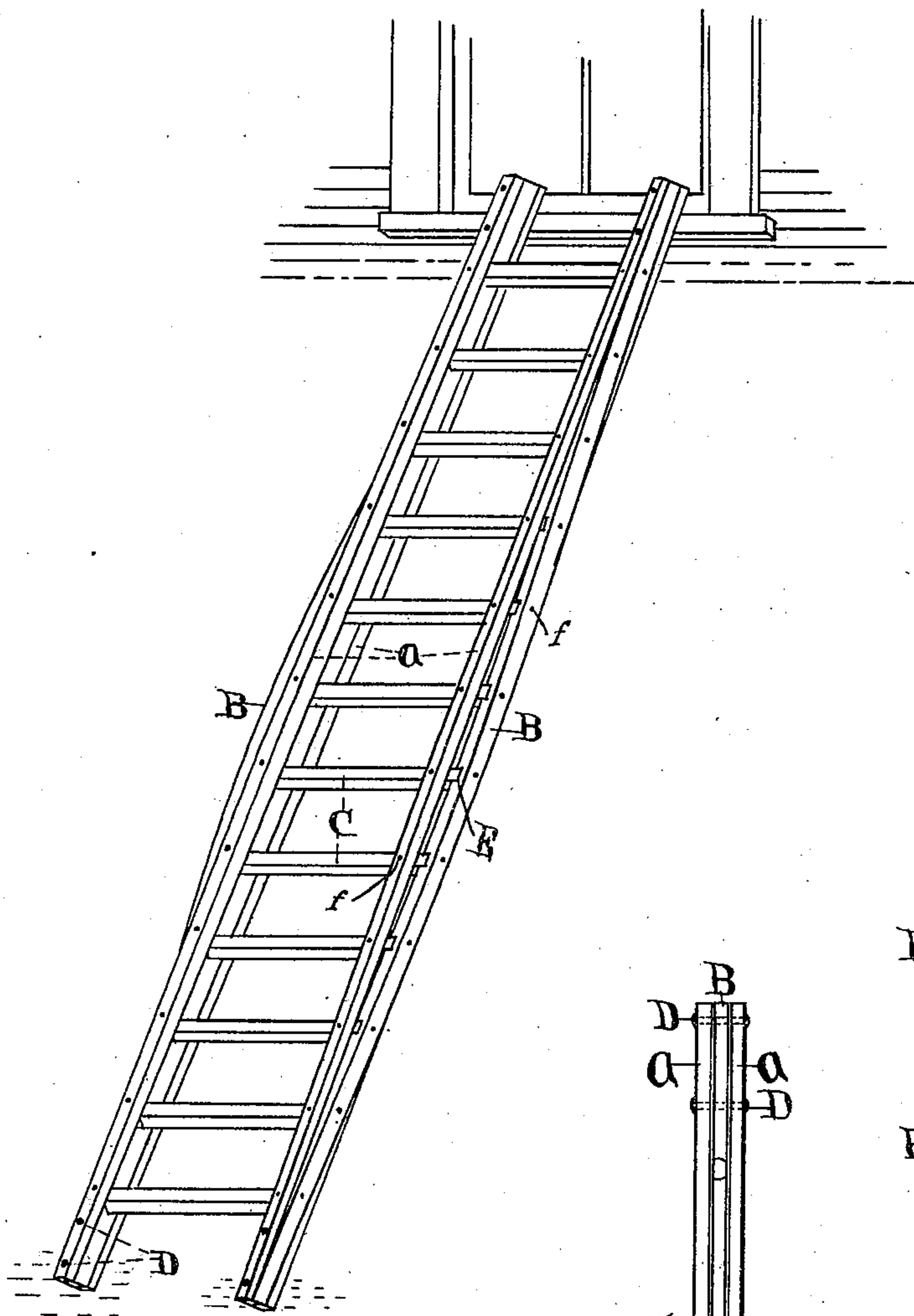


FIG. 1.

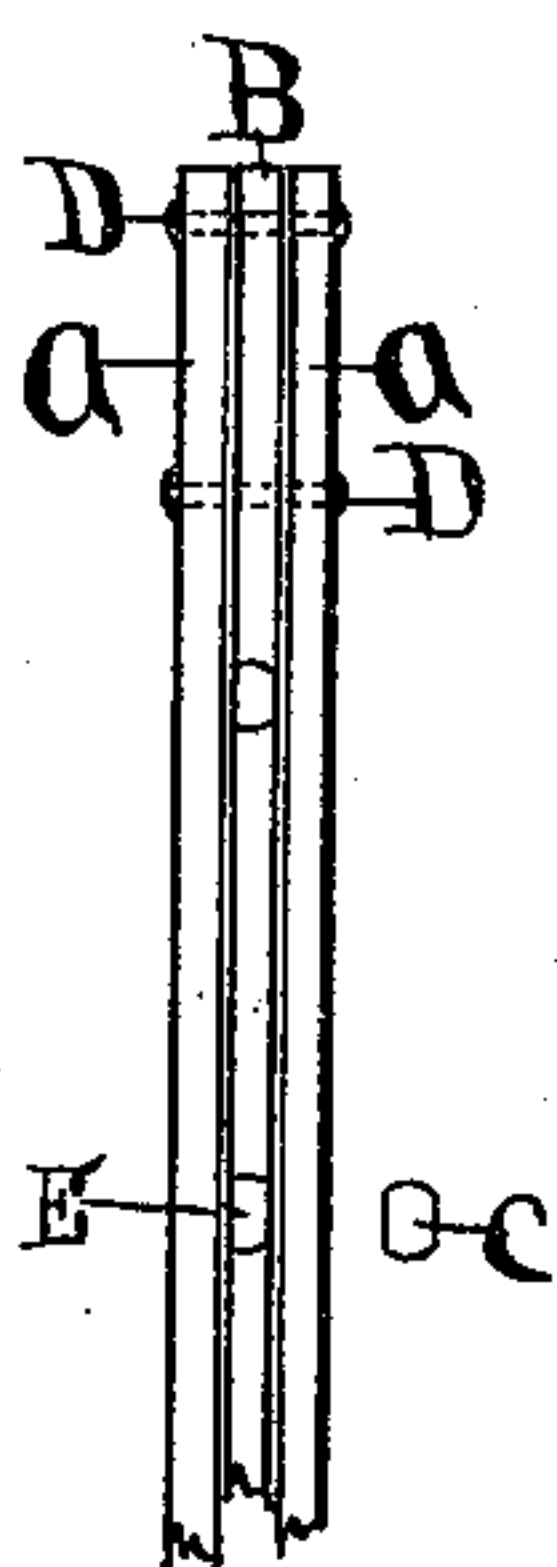


FIG. 2.

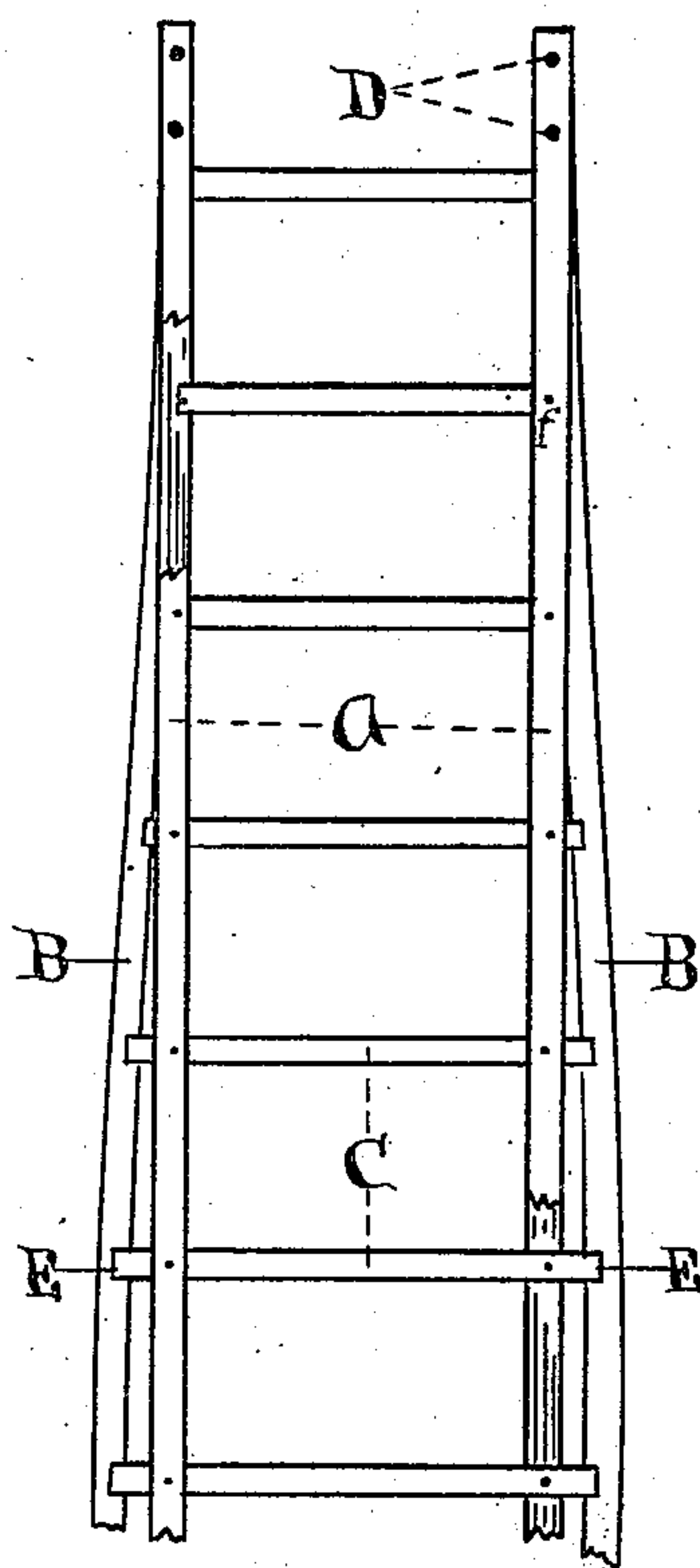


FIG. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM CUMMER AND HERBERT CUMMER, OF CADILLAC, MICHIGAN.

## LADDER.

SPECIFICATION forming part of Letters Patent No. 355,683, dated January 11, 1887.

Application filed November 19, 1886. Serial No. 219,347. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM CUMMER and HERBERT CUMMER, of the city of Cadillac, county of Wexford, and State of Michigan, have invented a new and useful Ladder, of which the following, in connection with the accompanying drawings, is a full and exact description.

Our invention relates to improvements in ladders whereby, with the same weight of material, by its special arrangement and form in construction, a much stronger ladder is made than those now in use. We attain this object by means of the several parts and by the arrangement as illustrated in the accompanying drawings, which are hereby made a part of this specification.

In said drawings, Figure 1 is a perspective view of our improved ladder. Fig. 2 is a portion of one of the side rails and an end of one of the rungs fitting therein, as hereinafter described. Fig. 3 is a plan view with parts of the side rails broken away to show the construction of the various parts and the manner in which they are joined together.

The same letters refer to the same parts in the different figures.

In the drawings, A A are the side sections, and B the central section, of the side rails of the ladder. D D are bolts passing through and holding these sections firmly together.

C is the ladder-rungs, and in Fig. 2 shows the end of the rung.

E is a mortise in the central section, B, to receive the end of the rung C as a tenon.

*ff* are rivets, nails, screws, or any suitable device for fastening the rungs firmly to the side rails.

The central section, B, of the side rails, as shown in Fig. 3, springs outward laterally, so that the rungs are comparatively longer in the center of the ladder than at either end, but are not absolutely longer than the rungs at the lower end when the ordinary spread is given to its foot. This construction gives a stiffness to the ladder laterally not otherwise attainable, as the rungs, being firmly fastened by the rivets *ff* through the sections A of the side rails, and then extending beyond and entering and

being fastened into the mortise E of the section B of the rail springing outward, as above mentioned, form a series of braces along the side of the ladder on the principle of a truss. We spread the rails at the foot of the ladder to whatever extent is necessary to secure grace of proportion and greatest strength.

Having thus described the various parts and method of construction of our invention, that any one skilled in the manufacture of ladders may be able to build it, what we claim as novel, and desire to secure by Letters Patent, is—

1. The combination, in the side rails of a ladder, of three sections, with the central section of the three springing outward, as represented by A A and B in the accompanying drawings, for the purpose and in the manner substantially as above specified.

2. The combination, in a ladder, of side rails formed of three sections, with mortises in the central section of the three adapted to receive the ends of the rungs, as illustrated in the accompanying drawings, for the purpose and in the manner substantially as above specified.

3. The combination, in a ladder having the side rails formed of three sections, with the central one of the three springing outward laterally and provided with mortises for the rungs of such rails, and rungs varying in length to fit the varying distances between the central sections of said rails, as illustrated in the accompanying drawings, substantially for the purpose and in the manner above specified.

4. The combination, in a ladder, of side rails formed of three sections, with the central section springing outward and provided with mortises to receive the ends of the rungs, and of rungs of varying length passing between the side sections of said rails and fastened by any suitable device thereto and entering the mortises in said central section of the rails, as illustrated in the accompanying drawings, substantially for the purpose and in the manner above set forth.

WILLIAM CUMMER.  
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Witnesses:

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