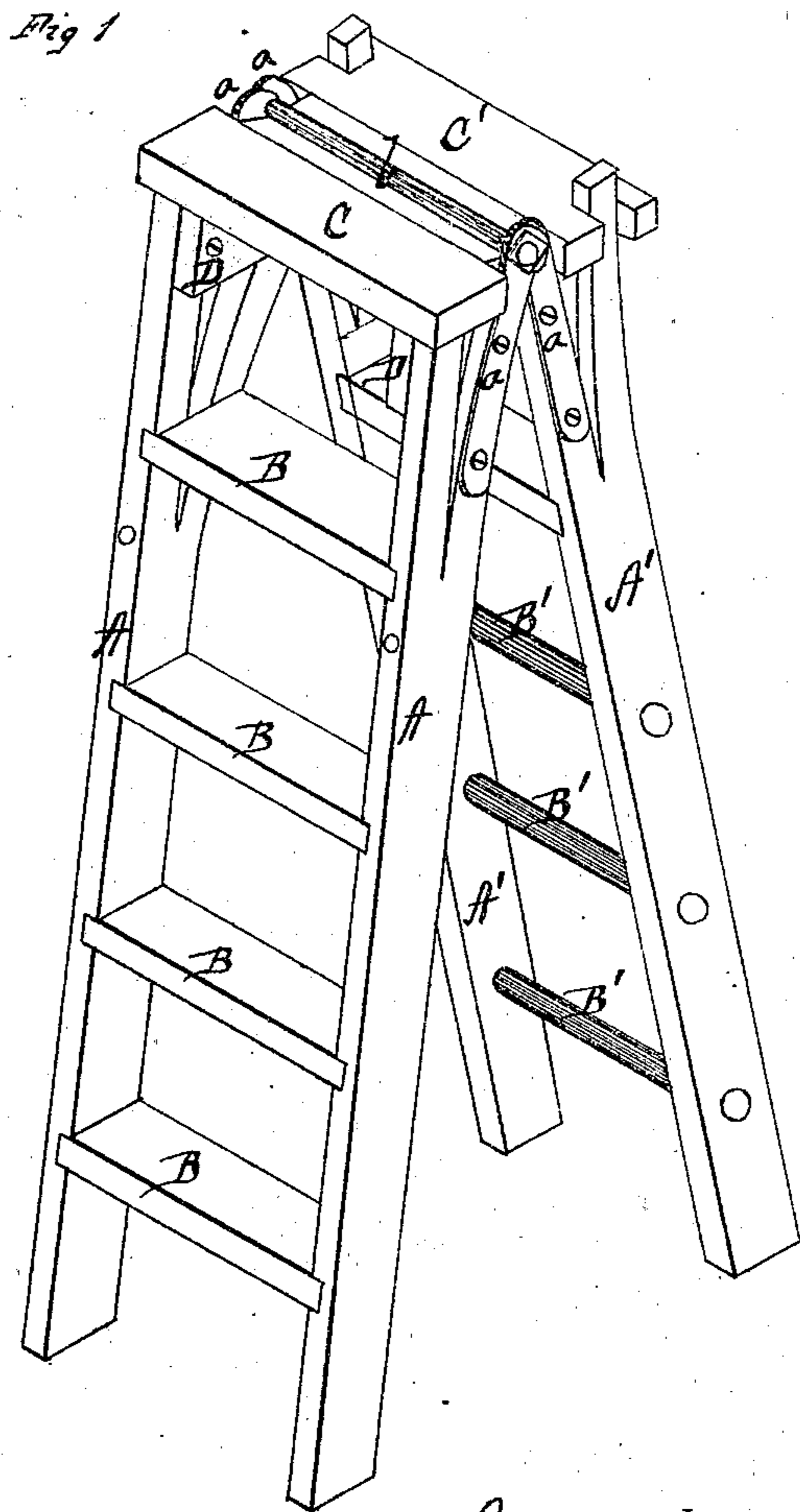


J. N. VALLEY.

Improvement in Ladders.

No. 130,549.

Patented Aug. 13, 1872.



Witnesses:
Frank L. Durand
Chas. L. Ewert

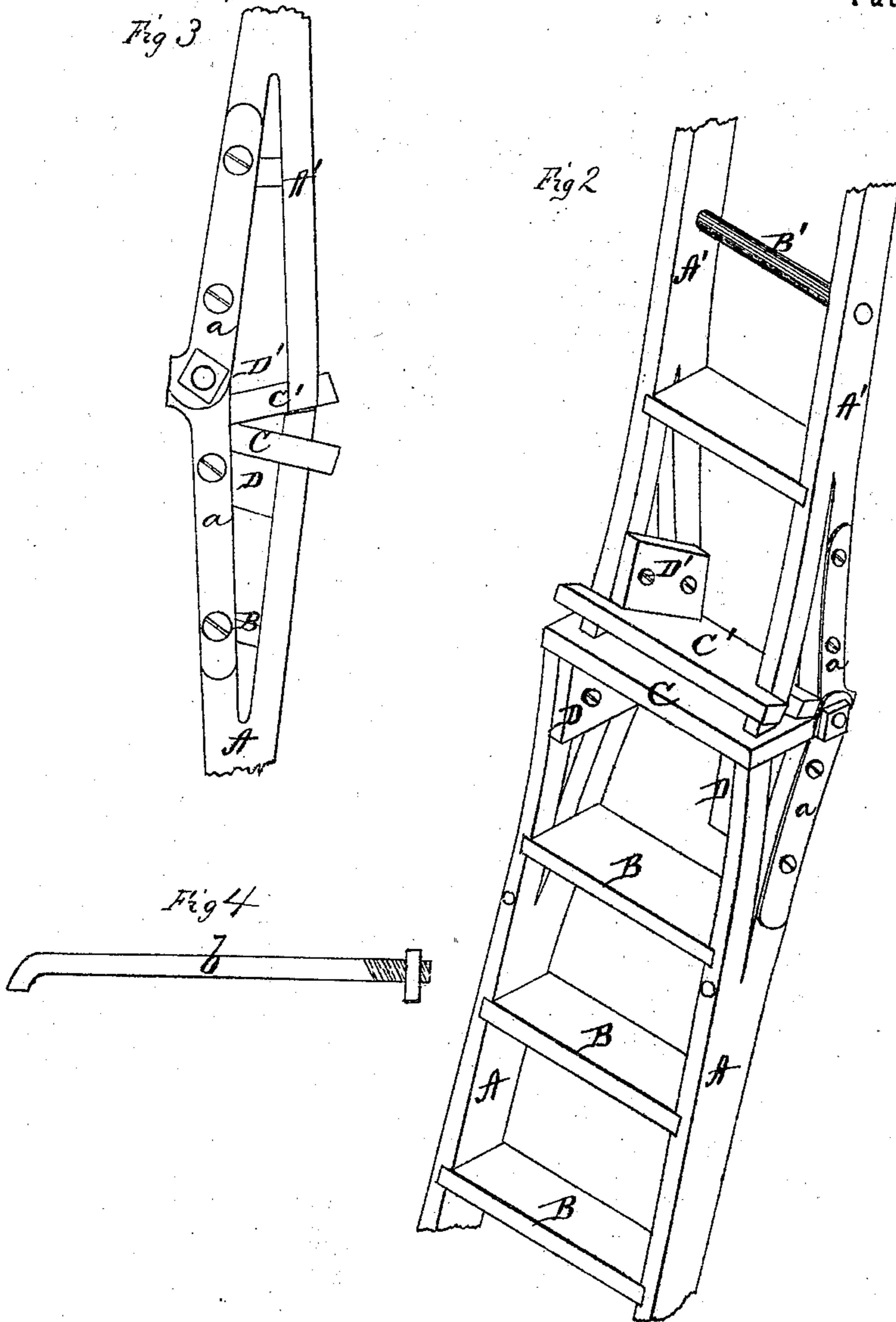
Inventor
John N. Valley.
per Alexander M. Mason
Attorneys.

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UNITED STATES PATENT OFFICE.

JOHN N. VALLEY, OF NORTH EAST, PENNSYLVANIA.

IMPROVEMENT IN LADDERS.

Specification forming part of Letters Patent No. 130,549, dated August 13, 1872.

To all whom it may concern:

Be it known that I, JOHN N. VALLEY, of North East, in the county of Erie and in the State of Pennsylvania, have invented certain new and useful Improvements in Step and Extension Ladder; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a step and extension ladder, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my ladder used as a step-ladder. Fig. 2 is a similar view of the same, showing it as an extension ladder. Fig. 3 is a side view of the extension ladder, and Fig. 4 is a side view of the rod by means of which the two ladders forming my step and extension ladder are hinged together.

A A represent the side pieces of the main ladder, connected by the steps B B, said side pieces spreading so as to be wider apart at the bottom than at the top. The other or auxiliary ladder is composed of similar side pieces A' A', connected by rounds B' B', but the side pieces of this ladder run parallel with each other, and at a distance apart equal to the distance between the upper ends of the side pieces of the main ladder. The top ends of the side pieces A and A' are split down for a suitable distance, so that they may be spread wide enough to suit the platforms or tops C C', respectively, for the ladders. D D' are cleats, placed across the top of the ladders on the inner sides of the side pieces A A', where they are spread, one end of each of said cleats being bolted by one of the bolts that holds on the hinge, and the other end of the cleat fastened by a screw. These cleats are for the purpose of holding the upper ends of the side pieces apart, and also to form a part of the foundation for the platforms. The two ladders or parts forming the step-ladder are

hinged together by means of metal straps or bars *a a*, attached to the side pieces, and connected by a rod, *b*, having a hook formed on one end and a nut screwed on the other, as shown in Fig. 4. They may, however, be fastened together by any suitable kinds of hinges, so as to make the step-ladder complete. But the hinges should be of such construction that the ladder A' B' may be set or raised up on the top of the other ladder A B, so as to form an extension ladder or long ladder. When the two parts, as described, are put together so as to form an extension ladder or long ladder, the ends of the side pieces, which are spread, form, when they come together, a brace or arch for the long ladder, as shown in Fig. 3, making it very strong at the point of connection. These ends may, however, be left wide, so as to obviate the necessity of splitting or spreading them, but the rear of the standards A' should extend above the platform, as shown.

When used as an extension ladder, the two platforms may be fastened together by a hook or other suitable device.

The main advantages of my invention are as follows: Cheapness of construction; convenience of a step-ladder from both sides; that the step-ladder may be taken apart so as to make two short ladders; that one of the ladders may be raised up or straightened so as to form an extension or long ladder; the convenience of the platforms or tops, when used as a step-ladder.

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

The combination of the side pieces A A, steps B B and C, side pieces A' A', steps B' B' and C', straps *a a*, and removable hinge-rod *b*, the side pieces being forked at their tops, and one fork of each piece A' extending above the platform C', all substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of January, 1872.

JOHN NAPOLEON VALLEY.

Witnesses:

JNO. O. GOODRICH,
FRANK C. LANG.