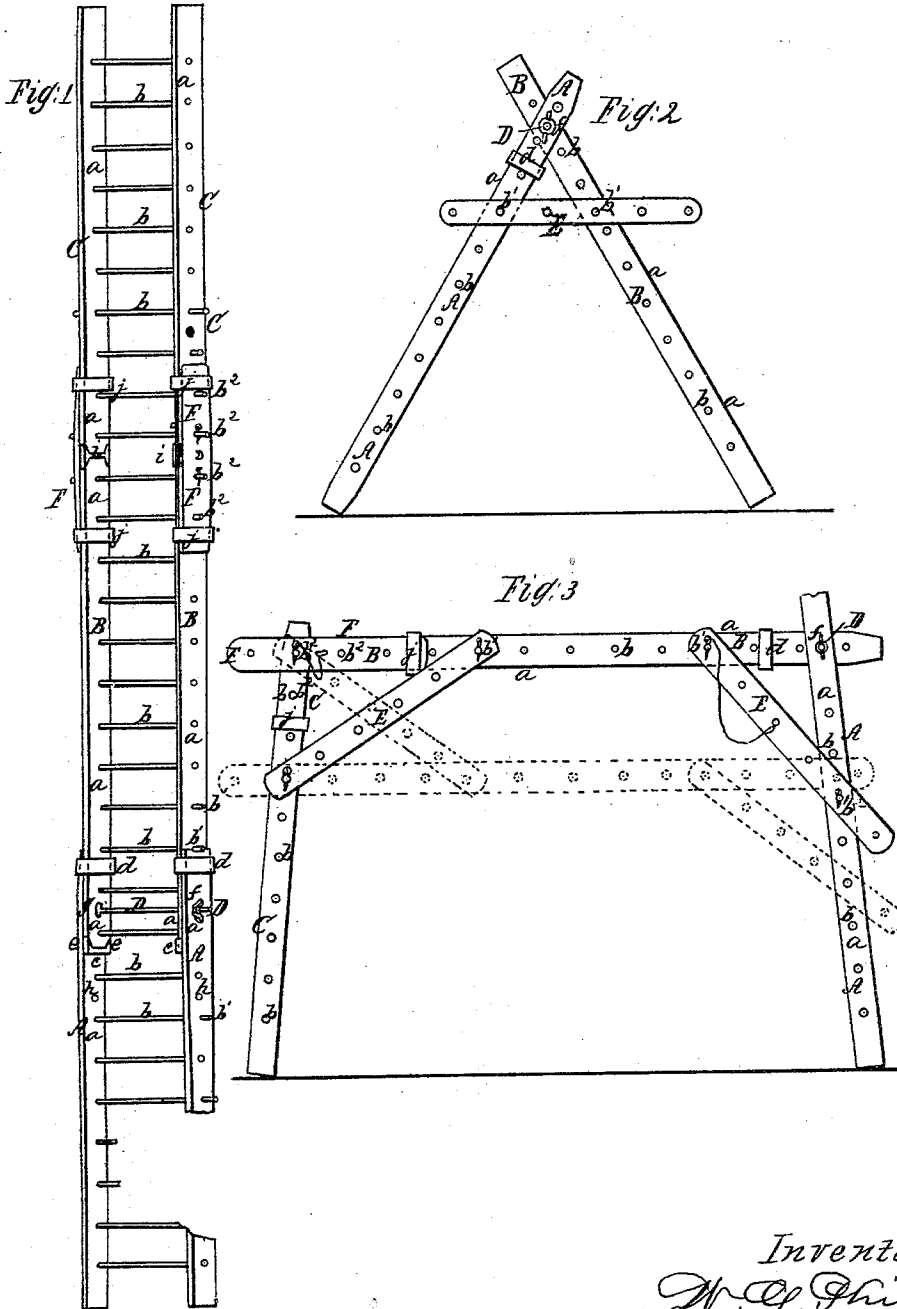


W. G. Phillips.
Step Ladder.

N^o 9,039.

Patented Jun. 8, 1869.



Witnesses

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Inventor

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United States Patent Office.

WILLIAM G. PHILIPS, OF NEWPORT, DELAWARE.

Letters Patent No. 91,039, dated June 8, 1869.

IMPROVED STEP-LADDER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM G. PHILIPS, of Newport, New Castle county, Delaware, have invented a new and useful Improvement in Extension and Changeable Ladders; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a perspective view of my improved ladder, showing it extended.

Figure 2 is an end elevation of a step-ladder produced by it.

Figure 3 is a side elevation of a scaffold produced by the same.

Similar letters of reference indicate corresponding parts.

The invention relates to a new sectional ladder, which is so arranged that it can be extended to any desired length, or that it can be transformed into a step-ladder or scaffold.

The invention consists more particularly in so constructing the connecting-splices that the required changes can be readily produced, and the device made rigid in either position. Instead of splices may be used a combination of steps, sliding bands, and bolts, with equal effect, as hereinafter more fully described.

The invention also consists in so arranging the rounds that they may be adapted to receive braces for the step-ladder and scaffold.

A B C are three sections of the ladder, consisting of suitable side-bars, *a a*, and of rounds, *b b*, all of suitable size and form.

The side-bars *a a* of one section B, should be nearer together than those of the adjoining sections, so that they may be fitted between them, as shown at the junction of the two lower sections in fig. 1.

On the inner sides of the side-bars of A are steps, *c c*, made of metal or other suitable material, of such shape that they will be adapted to receive and support the lower ends of the side-bars of B, as shown.

Sliding sleeves, or steps, *d d*, are fitted around the side-bars of A and B, to hold them together, as shown.

The steps *c* have flanges, *e e*, projecting from their ends, to lap over the edges of the side-bars of B, so that the latter will be prevented from swinging.

A bolt, D, is fitted through the side-bars of A and B, and is secured by a nut, *f*, to firmly lock the two sections together. In this manner any number of sections can be locked together, to form a ladder of suitable length.

The inner side-bars *a*, that is to say, those of B, are slotted, as at *g*, where the bolt D passes through them. When the nut is somewhat slackened, and the sleeves *d* drawn off the bars *a* of A, (if, instead of such sleeves, steps are used, they need not be drawn off,) the two

connected sections can be drawn, to disconnect the upper bars from the steps *c*, and the sections can then be swung on the bolt to form a step, or fruit-ladder, as in fig. 2. In this position, the two sections should be stayed by means of braces, E E, that are fitted over the ends *b'*, of rounds, projecting from the sides of the sections, or to other pins projecting therefrom.

Such a fruit-ladder may be of suitable height, as each of its legs may consist of one, two, or more sections, connected in line, as in fig. 1.

In the same manner, such a ladder may, when composed of three or more sections, be transformed into a scaffold, by swinging the end-sections A C on the middle section B, as in fig. 1, and by bracing them, as shown.

By putting the bolts D into other apertures, *h h*, provided in the side-bars of A and C, the horizontal section, B, can be secured at any desired height, it being by red lines represented as arranged lower, in fig. 3.

The scaffold may also be of suitable length or height by using single, double, or treble sections for each of its members.

Instead of the fastening-device above described, may be used splices, or outer bars, F F, carrying double-flanged steps, *i i*, near their middle, to receive the ends of the side-bars of two sections, B C, that are to be united. In this case, the side-bars may be in line, as shown in fig. 1.

The splice-bars are perforated, to be fitted over and held in line by the projecting ends of rounds *b'*, as shown, and their ends are, furthermore, secured by sliding sleeves *j j*, fitted around the side-bars *a* of the two sections, and over the ends of the bars, as shown. By this arrangement of splice-bars, the sections can also be swung into a step-ladder or scaffold, in which case they are locked in line with the side-bars of one section, and turn on the rounds *b'* of the other section, as in fig. 3.

I claim as new, and desire to secure by Letters Patent—

1. The step *c*, bolt D, and sliding sleeves *d*, when combined with each other and with the sections of a ladder, substantially as described, for the purpose specified.

2. The splice-bars F, having the steps *i*, when combined with the sliding sleeve *j* and with the sections of a ladder, substantially as described, for the purpose specified.

The above specification of my invention signed by me, this 29th day of January, 1869.

WM. G. PHILIPS.

Witnesses:

ISAAC D. PHILIPS,
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