

(No Model.)

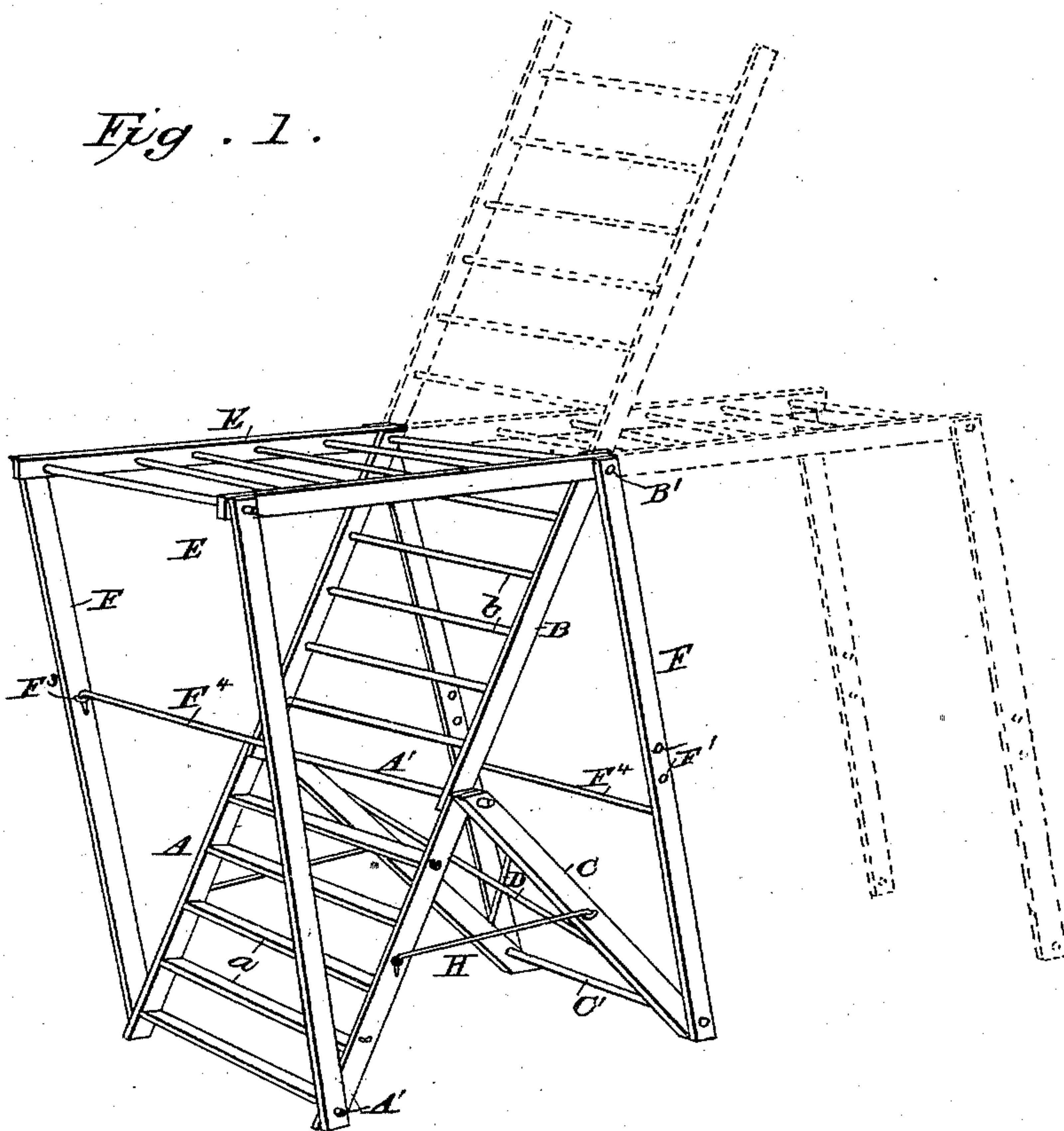
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G. A. LAKE.  
COMBINATION STEP LADDER.

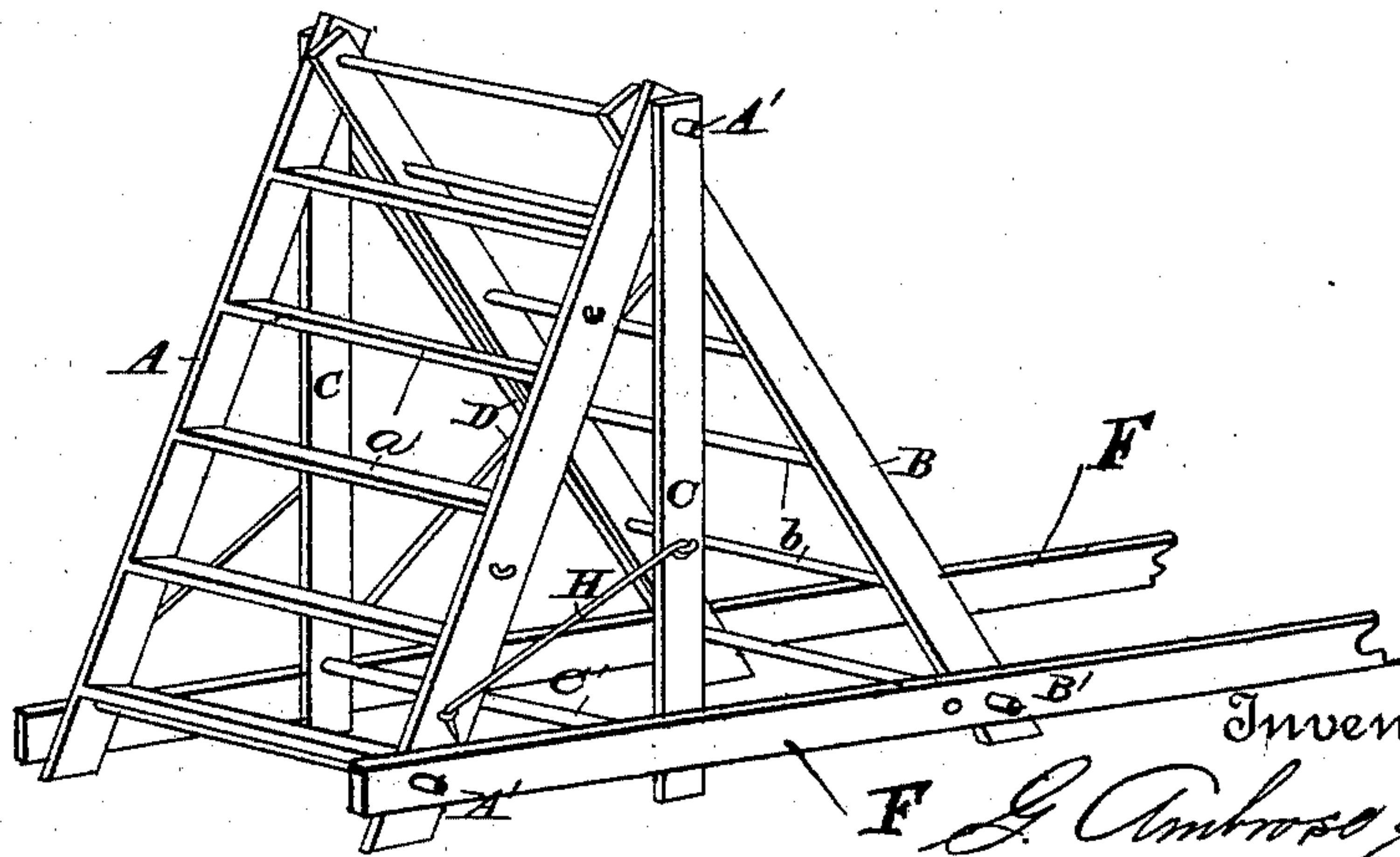
No. 502,367.

Patented Aug. 1, 1893.

*Fig. 1.*



*Fig. 6.*



Witnesses

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(No Model.)

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Fig. 2.

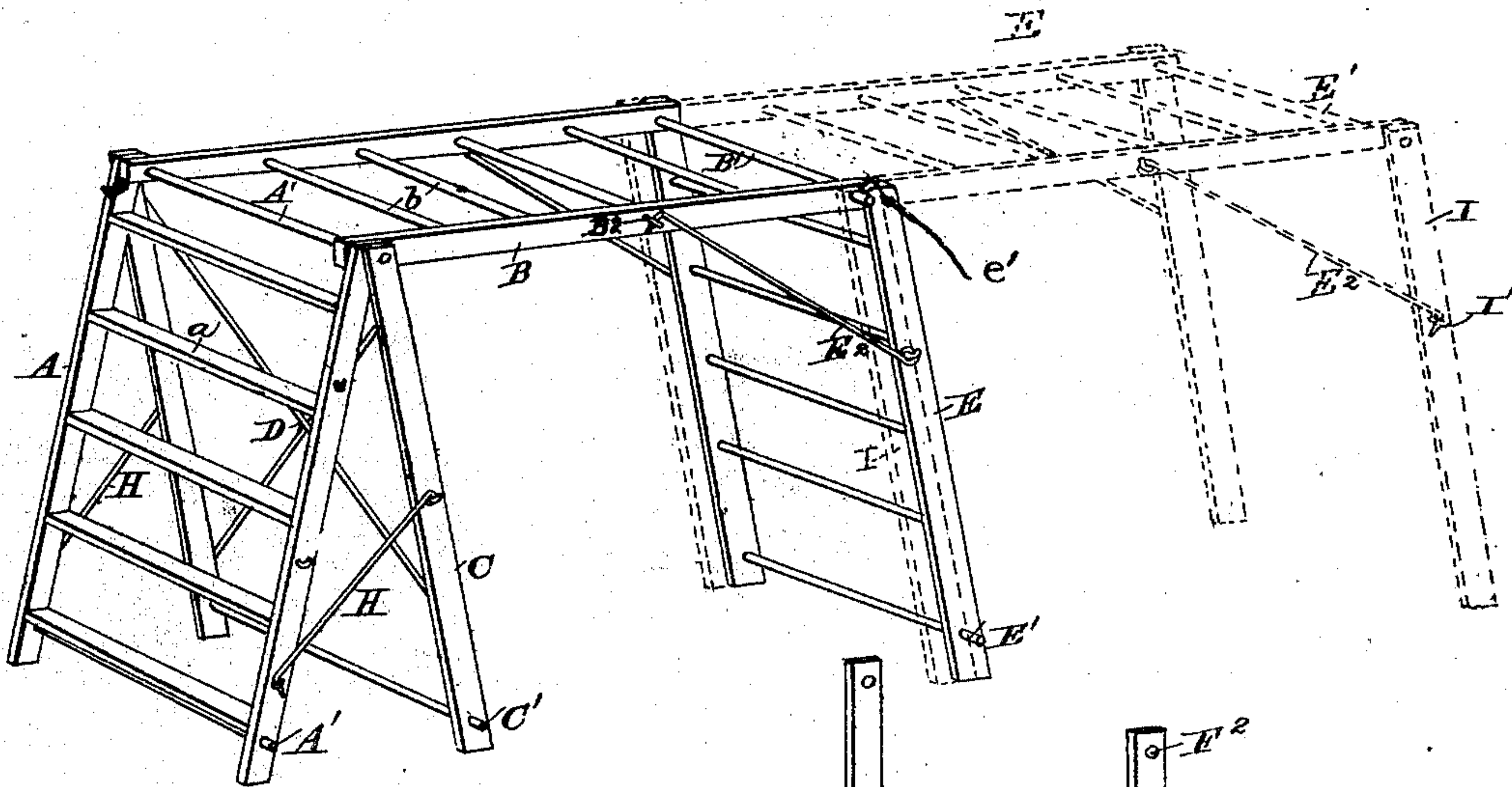
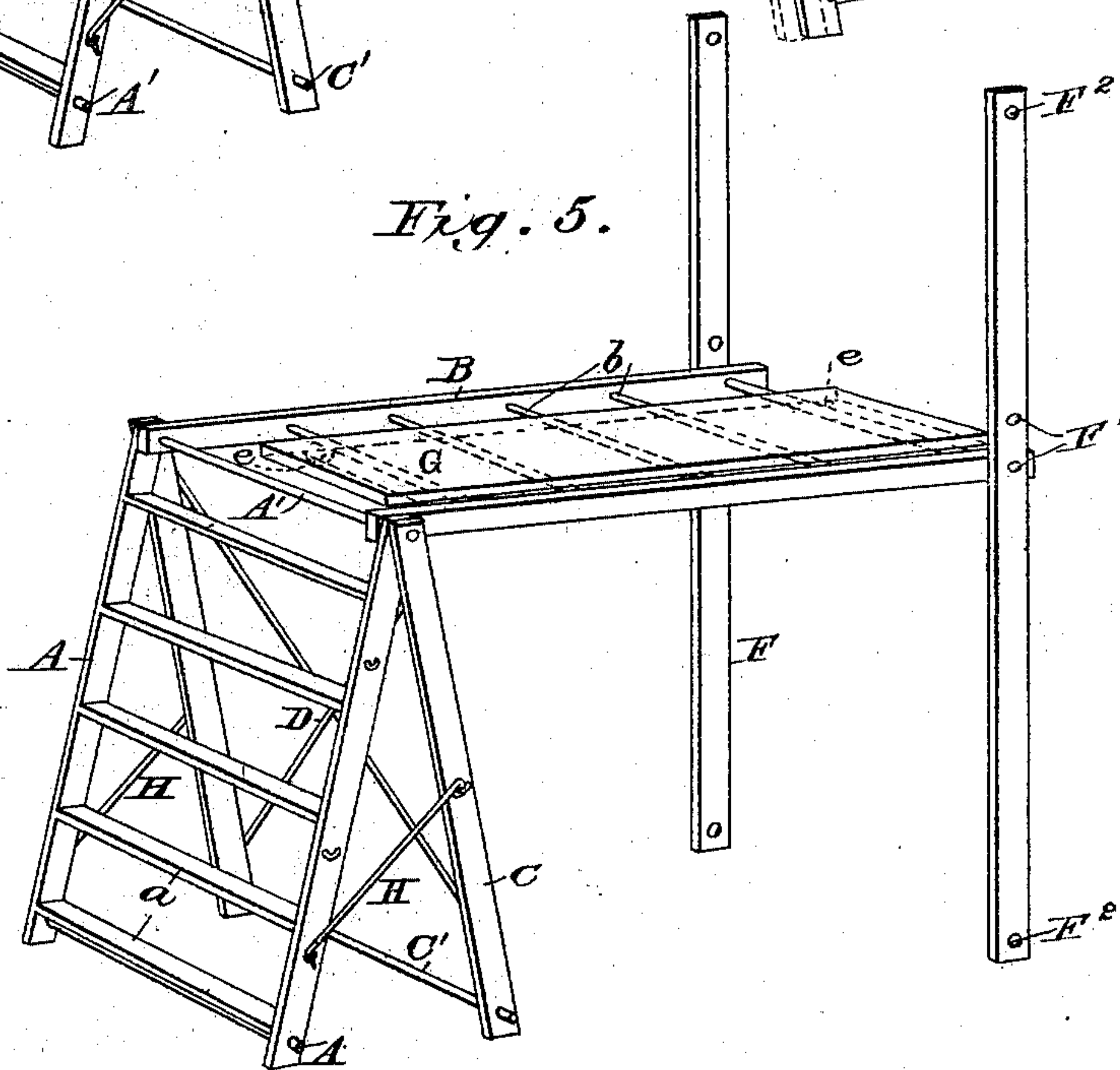


Fig. 5.



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(No Model.)

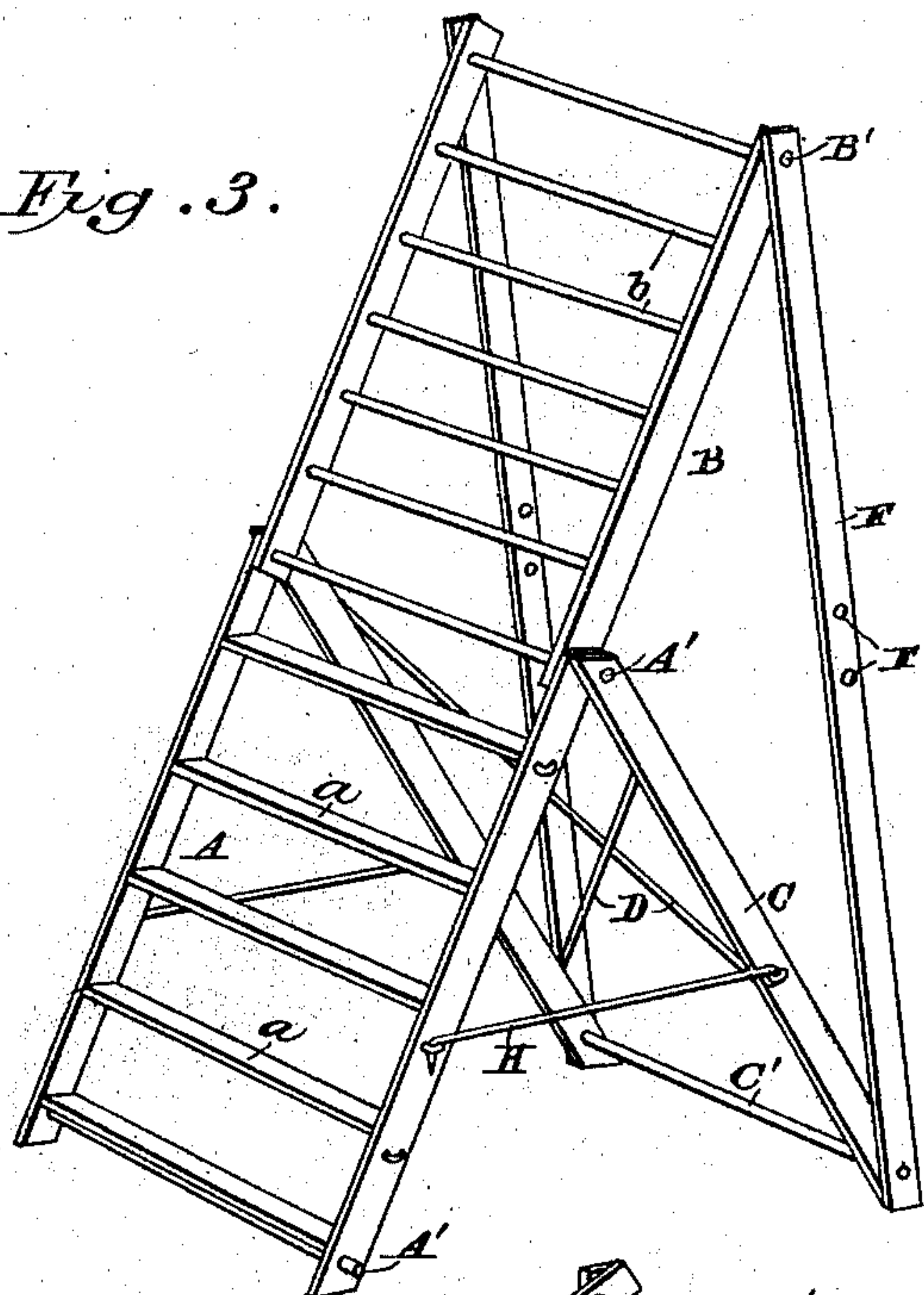
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G. A. LAKE.  
COMBINATION STEP LADDER.

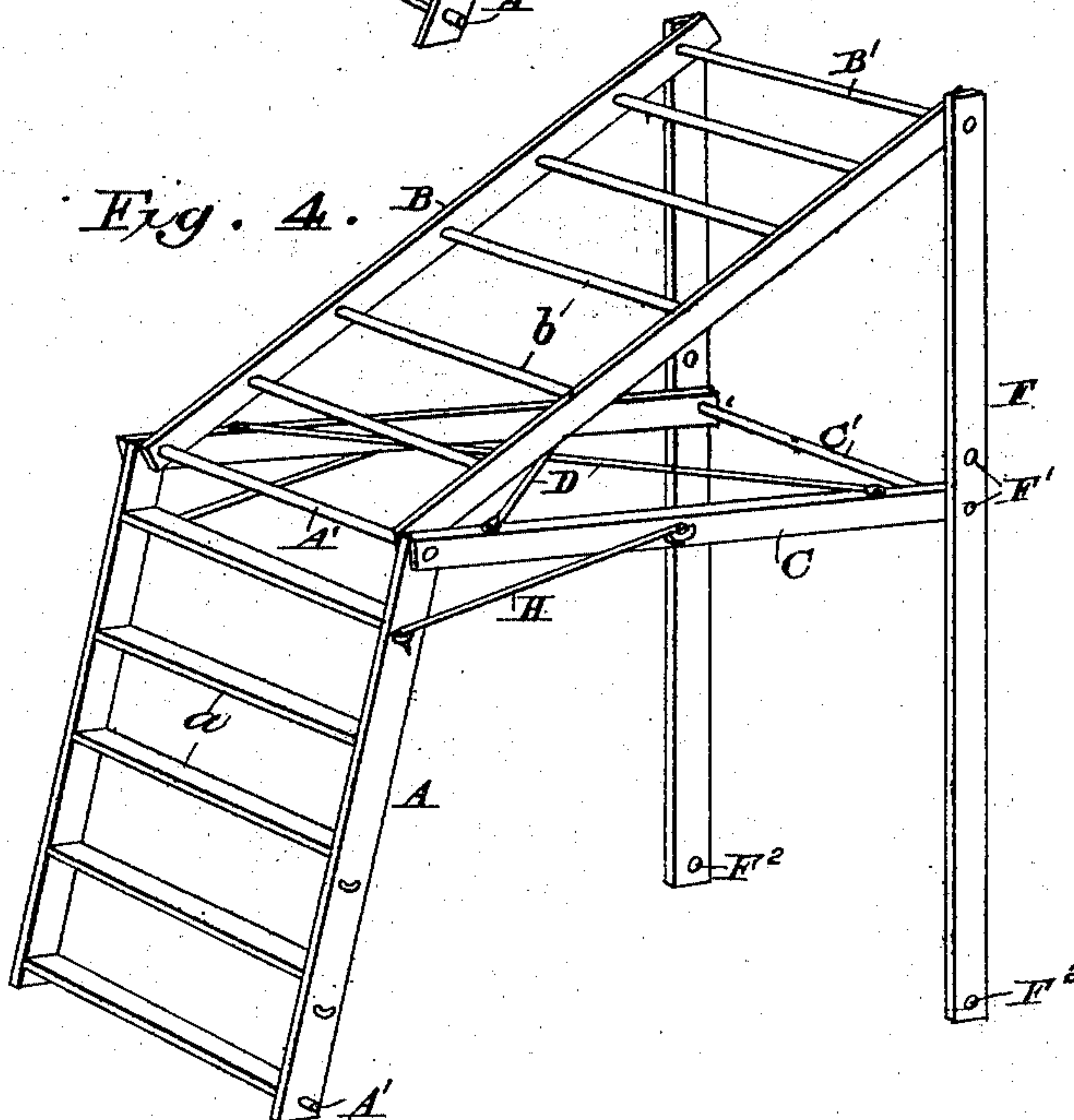
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

GAITHER AMBROSE LAKE, OF STOCKWELL, INDIANA.

## COMBINATION STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 502,367, dated August 1, 1893.

Application filed April 22, 1893. Serial No. 471,480. (No model.)

*To all whom it may concern:*

Be it known that I, GAITHER AMBROSE LAKE, a citizen of the United States, residing at Stockwell, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Combination Step-Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in a novel and extremely useful combination step ladder, which is adapted to be arranged in several different forms or positions for different purposes, as shown in the accompanying drawings; and the invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of my entire combination ladder, showing it arranged for use in elevated work, such as papering ceilings, &c. Fig. 2 shows the ladder in its extended horizontal position. Fig. 3 shows the ladder arranged as a long extended step-ladder. Fig. 4 shows the ladder arranged in a semi-elevated position. Fig. 5 shows the ladder as arranged for use in cleaning windows, &c. Fig. 6 shows it arranged as a short step-ladder.

The same letters of reference indicate corresponding parts in the several figures.

Referring to the several parts by letter, A indicates the lower or front section of my combination step-ladder, which is preferably provided with flat steps, *a*, although rounds may be used instead of the flat steps when preferred. This section of the ladder has at its upper and lower ends a long round or bar, A', the ends of these rounds extending out beyond the sides of the ladder, as shown, forming pivots for the purpose hereinafter described.

On the upper round A' are pivoted the forward ends of the side-pieces, of what may be called the middle section, B, of my combination ladder, this ladder-section being provided with the usual rounds, *b*, and having at its upper or rear end a long round or bar, B',

the ends of which are extended out beyond the side-pieces, forming pivots.

C, C, indicate the side-pieces of a central frame, said pieces being pivotally mounted at their upper ends on the extended ends of the upper rounds A', while the frame is provided at its lower end with a long round, C', the ends of which extend out beyond the side-pieces C, as shown. The frame is strengthened and braced by inclined braces, D, D, crossing each other and secured at their ends to the side-pieces as shown.

E indicates the upper or rear ladder-section, the inner ends of the side-pieces of which are pivoted, detachably, at *e'*, to the rear ends of the middle section B; the upper end of this section having a long round, E', the ends of which extend out beyond the side pieces.

F indicate supporting-bars, of which four are employed in the complete ladder, each of said bars being formed near its center with openings F', and at each end with an opening F<sup>2</sup>. These bars are also provided with eyes, F<sup>3</sup>, and with the hooked rods F<sup>4</sup>, adapted to engage with said eyes as shown, for the purpose hereinafter described.

I indicates short supporting-bars, having apertured upper ends.

In Fig. 6 of the drawings, my combination ladder is shown arranged as a short step-ladder, in which position it may be held from spreading by engaging the extended ends of the rounds A' and B' in the openings of two of the bars F; the removable upper section E having been detached.

In Fig. 5 the central ladder-section is raised into a horizontal position, and the extended ends of its end-rounds B' are inserted through the central openings F' of two of the supporting-bars F, which are placed in a vertical position. The front pivoted section A is held from slipping or "spreading" out by rods or chains H, H, which are secured to eyes on the side pieces of the frame C and are provided with hooked outer ends which are engaged with eyes on the side-pieces of the frame C, as shown. A flat board, G, having on its under side at each end a transverse cleat or stop *e*, is placed on the horizontal section B; and a horizontal platform is thus formed on which the workman can walk in papering the walls of a room, cleaning windows, &c.



In Fig. 4 the ladder is shown arranged in a semi-elevated position, as used for gathering fruit, &c. The central frame C is here turned in a horizontal position, and the hooked ends of the rods or chains H, H, are engaged with eyes on the sides of the upper steps of the front ladder section. The bars F, F, are arranged in a vertical position, with the extended ends of the long round C' at the free end of frame C passing through the central openings of bars F, and the rear section B is then elevated to an angle of about forty-five degrees and the extended ends of its outer end-round B' are passed through the openings in the upper ends of the vertical supporting-bars F, F, as shown. The ladder is thus firmly and securely held in this position.

In Fig. 3 the middle ladder-section is shown extended upward to its full height, the ends of the front section and the central frame resting on the ground, the rods H preventing them from spreading, while the middle section B is raised into a nearly vertical position, and the apertured ends of the supporting-bars, F, are engaged with the extended ends of the rounds C' and B', as clearly shown. The ladder is thus extended to be used for gathering fruit high up in a tree; or in painting the side of a house, or for many other purposes.

In Fig. 2 the detachable upper or rear section E is shown pivoted to the rear end of the middle section in its normal place; when its outer end may be lowered into contact with the ground, thus supporting the middle section B in its horizontal position; when hooked rods, E<sup>2</sup>, which are hinged to the sides of the upper section, are engaged with eyes B<sup>2</sup> on the sides of the middle section, thus holding the part E from slipping or "spreading." Or the section E may be raised into a horizontal position, as shown in dotted lines, thus forming an extension of the horizontal middle section. The short supporting-bars I here have their upper apertured ends fitted on the extended ends of rounds B' and E', as shown in dotted lines; two of said bars having eyes, I', which are engaged by the hooked brace-rods E<sup>2</sup> of the upper section.

The ladder can be arranged for elevated work such as papering ceilings, for carpenters' use, &c., by arranging it as described for Fig. 3 but with the section E extended horizontally either forward, as shown in full lines in Fig. 1, or rearwardly, as shown in dotted lines; the outer end of said section being supported by two of the supporting-bars F, as shown; the rods F<sup>4</sup> of said bars being engaged with the eyes F<sup>3</sup>, to hold the bars in their vertical positions engaged with the extended ends of the rounds C', B', E', and A', respectively. By placing flat boards on the horizontal upper section, a horizontal platform is thus provided. I have also shown in dotted lines in Fig. 1 the section E turned up in line with the section B, to rest up against the side of a

house, which may be done when required, as for painting high up on the side of a house, &c.

From the foregoing description, taken in connection with the accompanying drawings, the construction, great convenience, and practical advantages of my combination ladder will be readily seen.

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

1. In a combination step-ladder, the combination of a forward ladder section, a rear ladder section, and a central frame, all pivotally connected together at their upper ends and having pivots projecting on the outer sides of their lower or free ends, and the supporting bars formed with the central and end openings adapted to receive said pivots; substantially as set forth.

2. The combination, of the forward ladder section, the ladder section B, and the central frame, all pivotally connected together at their upper ends and having pivots projecting on the outer sides of their free ends, the rods or chains swiveled to the central frame and having end-hooks at their free ends, eyes arranged on the side-pieces of the front section, and the supporting-bars formed with the central and end openings adapted to receive said projecting end-pivots; substantially as set forth.

3. In a combination ladder, the combination of the forward section, the section B, and the central frame, all pivotally connected at their inner ends on the extended top round of the front section, and having each at its free end the extended rounds the ends of which project beyond the side-pieces to form pivot-bearings, the rods or chains swiveled to the central frame and having end-hooks at their free ends, eyes arranged on the side-pieces of the front section, and the supporting-bars formed with the central and end openings adapted to receive said projecting pivots; substantially as set forth.

4. In a combination ladder, the combination of the front section, the middle section B, and the central frame, all pivotally connected at their inner ends and having at their free ends the extended rounds, the detachable section E, pivoted detachably to the outer end of the middle section and having the extended round at its outer end, the supporting-bars formed with the central and end openings adapted to receive the ends of said extended rounds, and having the eyes and swiveled hooked rods, the hooked rods swiveled to the central frame, and the eyes arranged on the front section C; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

G. AMBROSE LAKE.

Witnesses:

R. B. ARNOLD,  
G. SHUMAKER.