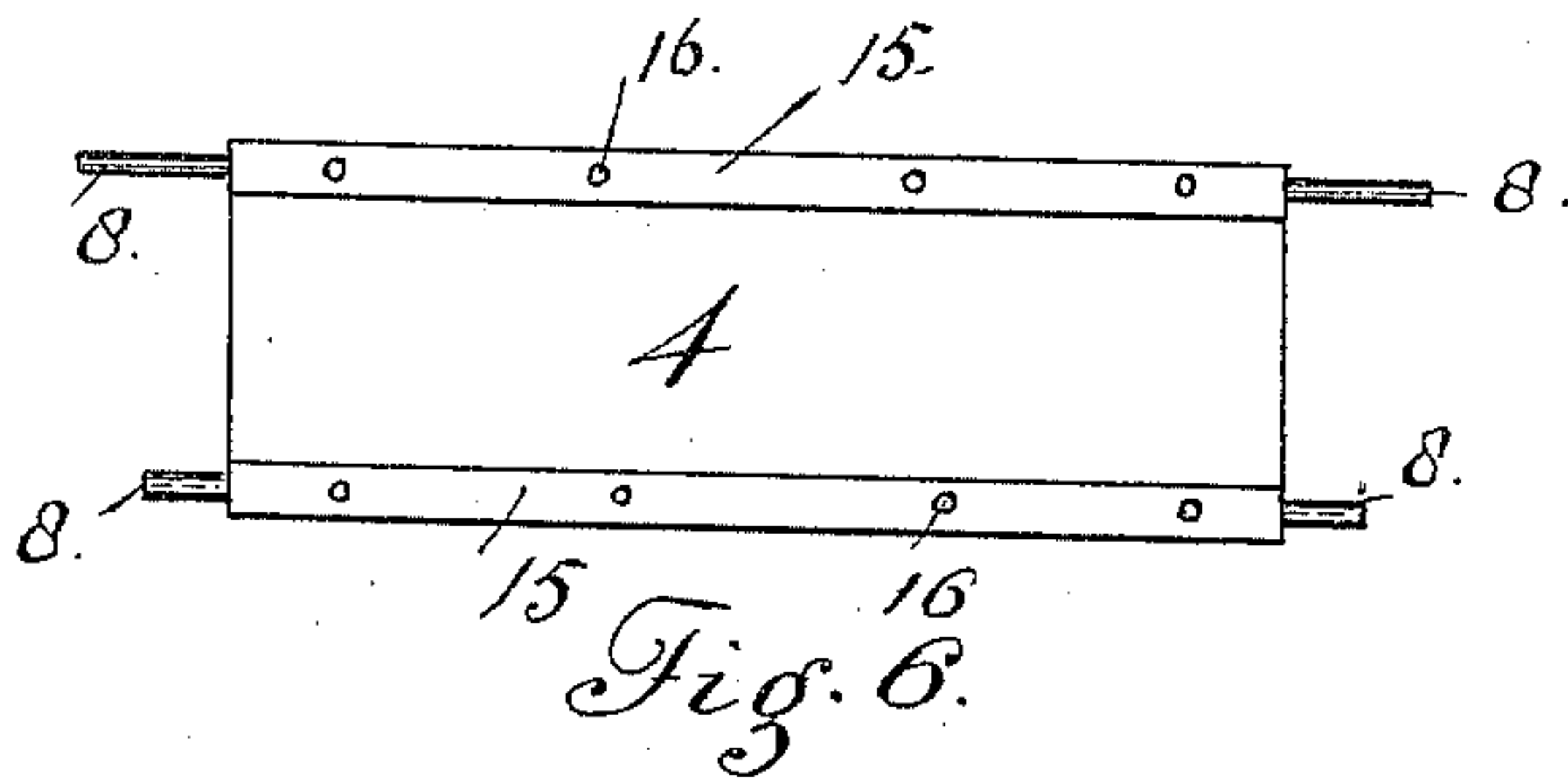
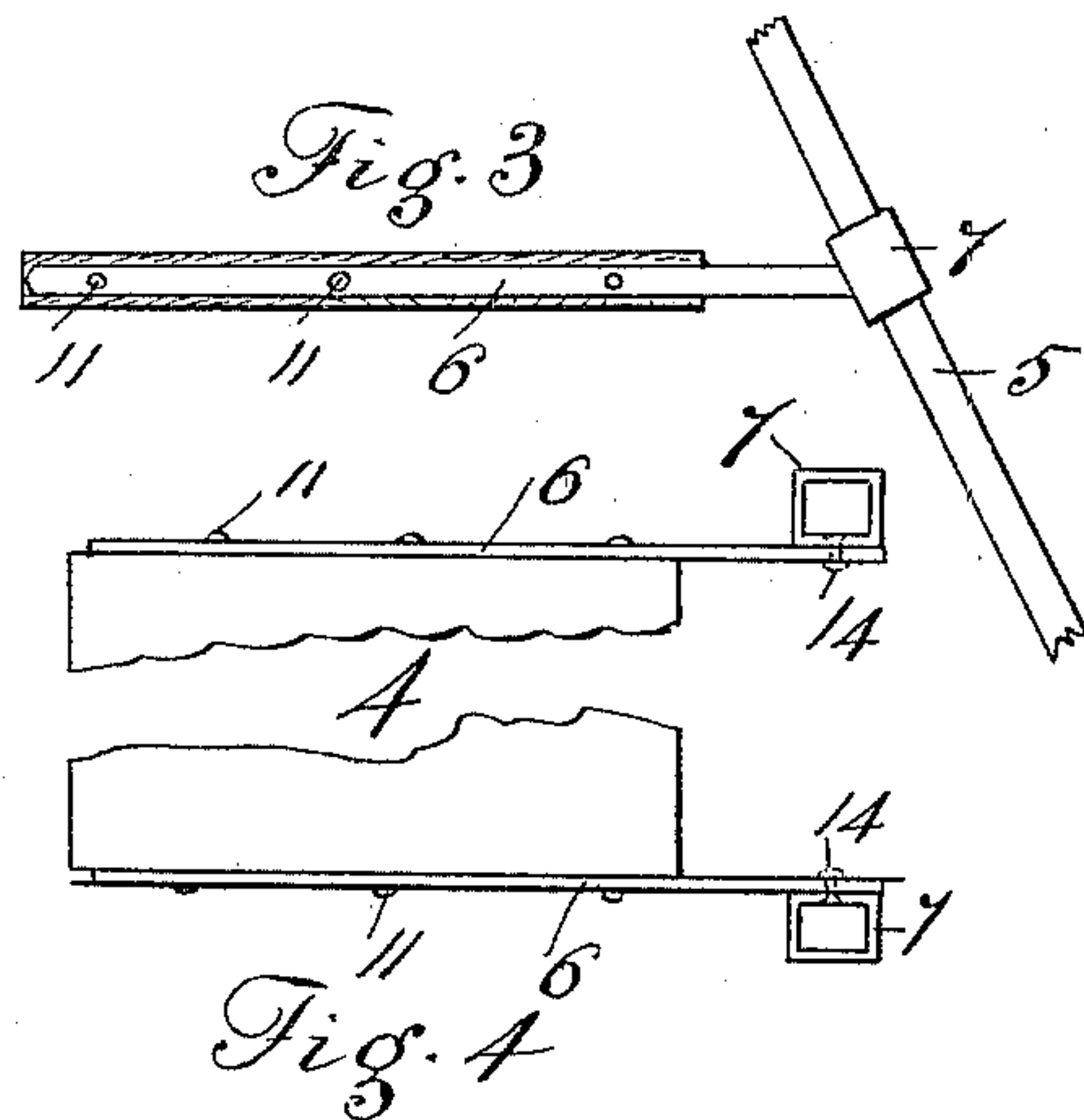
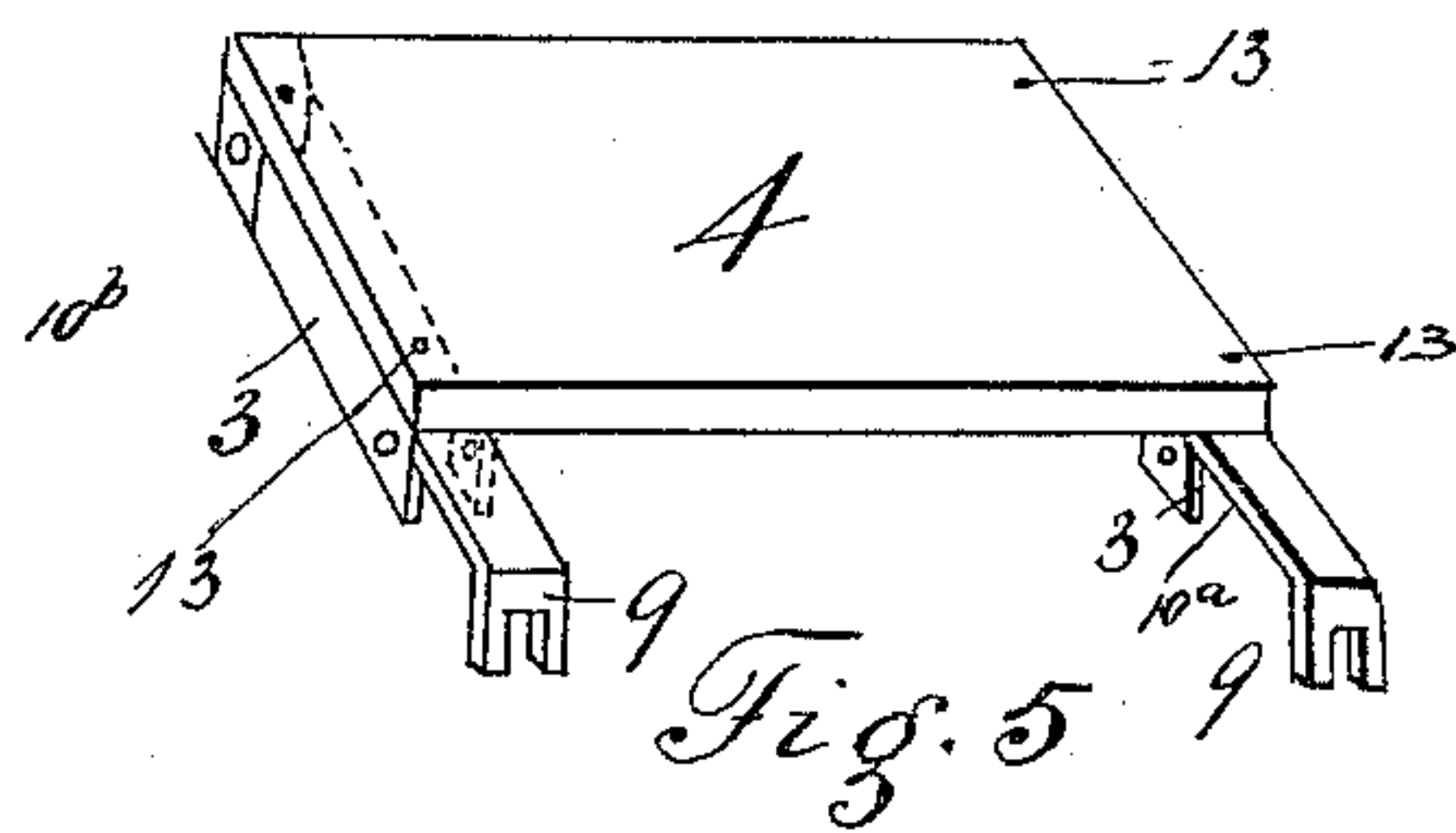
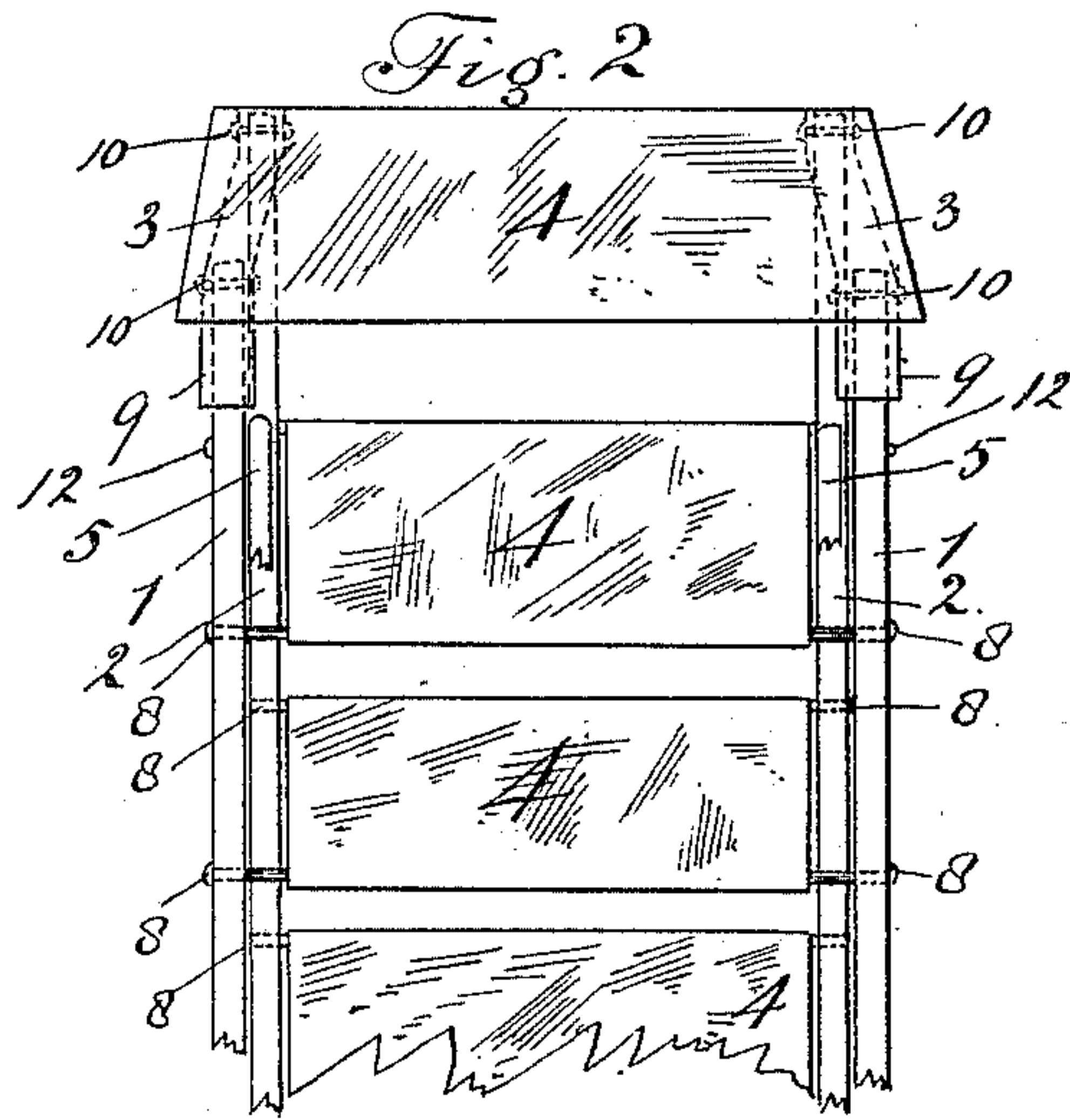
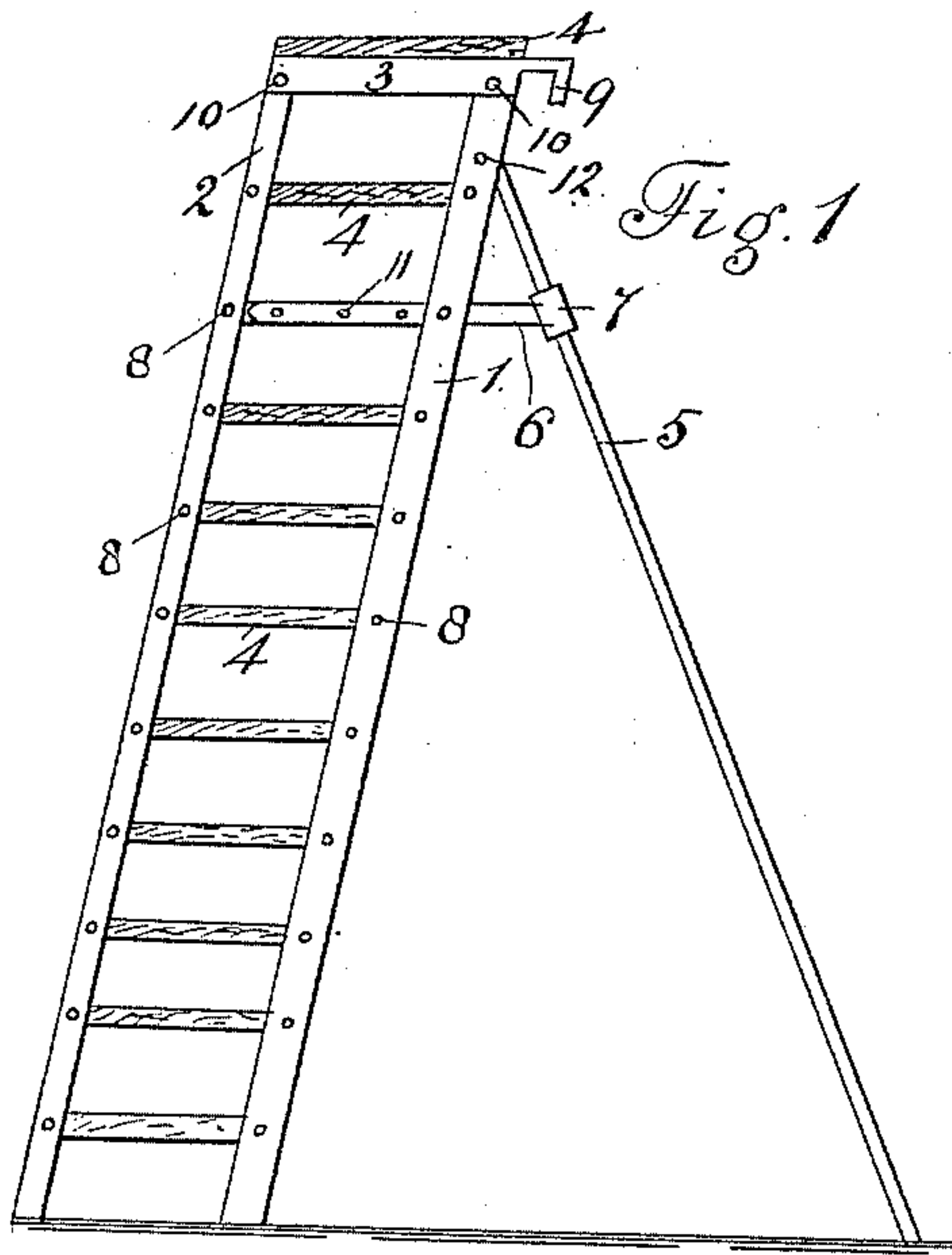


(No Model.)

A. A. BRANDENBURG.  
STEP LADDER.

No. 448,190.

Patented Mar. 10, 1891.



WITNESSES:

*Gitella Ebert.*  
*Wm. W. Connell*

INVENTOR

*Anthony A. Brandenburg*  
BY *A. J. O'Brien*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ANTHONY A. BRANDENBURG, OF DENVER, COLORADO.

## STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 448,190, dated March 10, 1891.

Application filed February 10, 1890. Serial No. 339,830. (No model.)

*To all whom it may concern:*

Be it known that I, ANTHONY A. BRANDENBURG, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Step-Ladders; and I do 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in step-ladders; and the object of my improvement is to provide a ladder which shall be light, durable, and cheap, and of such construction that it may be folded up readily when not in use and requiring but little space within which to lay it away.

To these ends my invention consists of the features, arrangements, and combinations hereinafter described and claimed.

In the drawings is illustrated an embodiment of the invention, in which drawings—

Figure 1 is a side view or elevation of the ladder open. Fig. 2 is a rear view of the ladder closed. Fig. 3 is a side or edge view of one of the steps provided with a socket through which passes a leg or brace. Fig. 4 is a plan view of the same with the legs or braces removed. Fig. 5 is a perspective view of the top step provided with hooks. Fig. 6 is an underneath view of one of the steps.

In the drawings let the reference-numeral 1 designate each of the two heavier bars of the ladder, and let 2 designate the lighter bars. There is a bar 1 and a bar 2 on each side of the ladder. Each pair of similar bars is united together by pins or rods 8.

Let the numeral 4 designate the steps of the ladder. Each step 4 is pivoted to two rods 8, one of which rods connects bars 1 and the other of said rods connects bars 2. Rods 8 may be secured to steps 4 in any suitable manner, one requisite only being necessary—namely, that the steps shall turn easily and readily upon the rods. As shown in the drawings, the steps are placed on top of the rods 8, which position they occupy when the ladder is in position for use. These steps may

be provided with a covering of sheet metal or other suitable material, which may be turned down over the rods 8, as at 15 15, Fig. 6, and riveted or otherwise suitably secured to the under side of the steps, as at 16, Fig. 6.

It will be observed that bars 2 2 are secured somewhat closer together than bars 1 1, and that the steps 4 do not fill the entire space between bars 1; or, in other words, the rods 8, connecting bars 2, are somewhat shorter than the similar rods connecting bars 1. Hence by virtue of the construction heretofore described bars 2 may be folded or pressed down within or between bars 1, causing the ladder to occupy a very small space, as shown in Fig. 2.

The top step 4 of the ladder is secured to bar 1 and 2 by means of clasps or strips 3, made fast to the bars 1 and 2, the said strips having inside posts 10<sup>a</sup> on their front and rear ends, as shown, between which posts and the external flange 10<sup>b</sup> the bars 1 and 2 are pivoted by the rivets 10. Clasps 3 terminate in hooks 9, which may be used to grip or catch hold of an object whenever such a device may be needed.

To the ends of one of the steps 4 near the top of the ladder are secured the metal strips 6 by means of rivets, screws, or nails 11. Strips 6 extend to the rear of the steps and terminate in sockets or guides 7 for the legs or braces 5. Guides 7 are pivoted to strips 6 by the use of pins or rivets 14, upon which the guides turn readily. These braces pass through guides 7, their upper extremities being suitably secured to the bars 1 by rivets or pins 12. Legs 5 turn readily on pins 12, so as to permit the legs to be suitably adjusted relatively to the bars 1, with which they are connected.

One of the uses for which my improved ladder is specially designed is in sleeping-cars to assist the passengers in climbing to the upper berth. For this use the legs 5 and their attachments will not be needed, since the hooks 9 will engage the edge of the berth and hold the top of the ladder sufficiently secure.

For sleeping-car use the ladder may be constructed of any desired size, being made of sufficient length to reach from the floor of the car to the upper berth. When not in use,



they may be closed up into very small compass and laid away within the upper berth or other suitable receptacle. For a similar reason when the legs are used the hooks may be  
5 dispensed with.

Having thus described my invention, what I claim is—

1. A step-ladder composed of two pairs 1 1 and 2 2 of longitudinal side bars, each pair of  
10 similar bars being connected by rods 8 at suitable intervals, the tops of the side bars being pivoted to a strip 3 on each side of the ladder, said strips terminating in hooks 9, the top step 4 of the ladder being rigidly secured  
15 to the strips 3, the other steps of the ladder being each secured to a pair of rods 8, one rod of each pair being connected with each pair of similar side strips, substantially as described.

20 2. In a step-ladder, two pairs 1 1 and 2 2 of longitudinal side bars, each pair of similar bars being connected by rods 8 at suitable intervals, steps 4, each step being movably se-

cured to two rods 8, one of said rods connecting bars 1 and the other of said rods connecting bars 2, one of the steps near the top  
25 of the ladder being provided with strips 6, secured thereto and provided with guides 7, suitably secured to strips 6, and legs 5, passing through guides 7 and pivoted at their  
30 upper extremities to bars 1, substantially as described.

3. In a step-ladder, the combination, with supporting-bars, of steps carried thereon, one  
35 of the said steps near the top of the ladder carrying rearwardly-extending strips having guides pivoted to their rear ends, and legs pivoted to the said supporting-bars and passing through the said guides, as described.

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

ANTHONY A. BRANDENBURG.

Witnesses:

WM. McCONNELL,

FRED. W. FELDWISCH.