

(No Model.)

T. A. STROHM.
LADDER.

No. 495,920.

Patented Apr. 18, 1893.

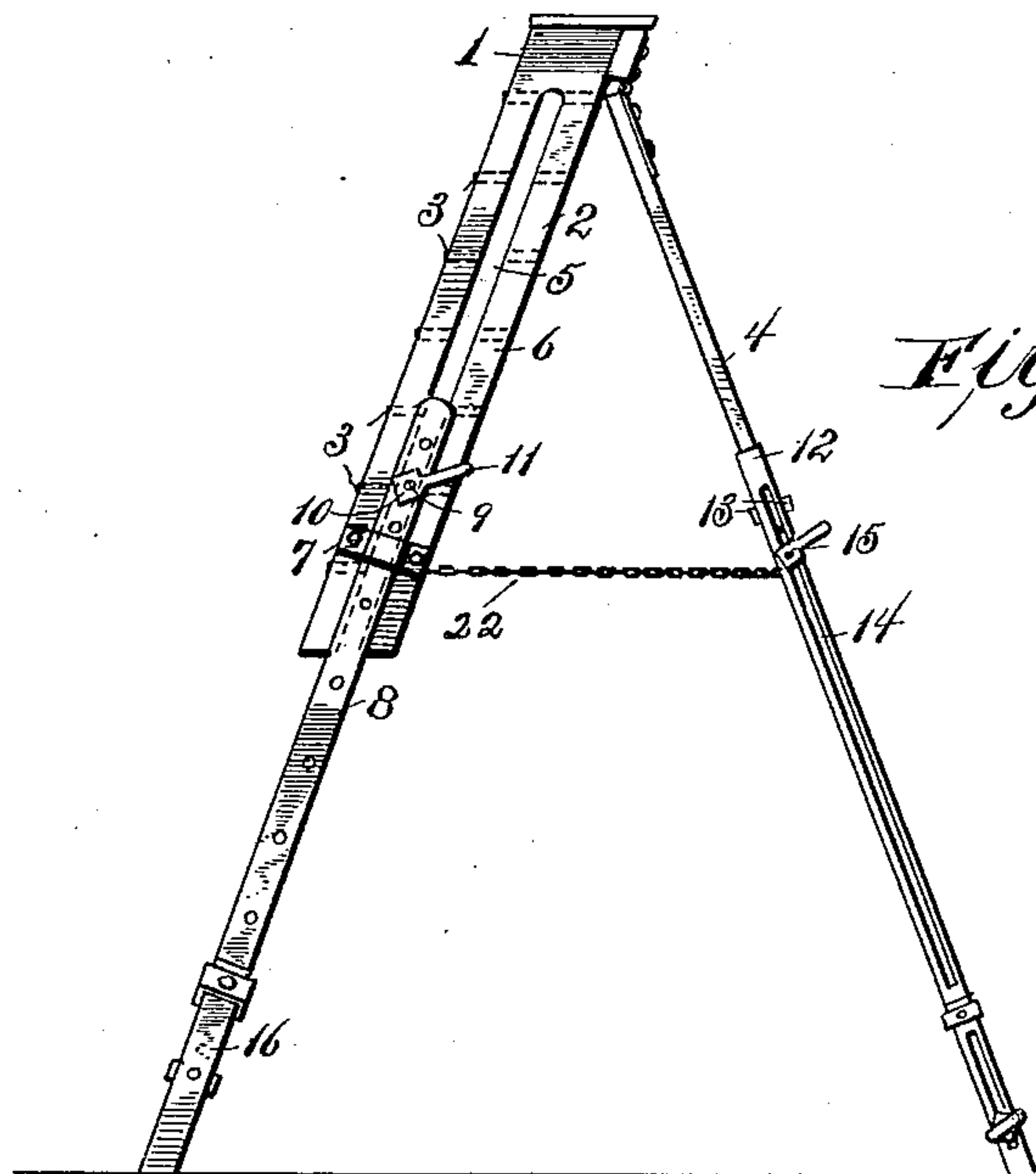


Fig. 1.

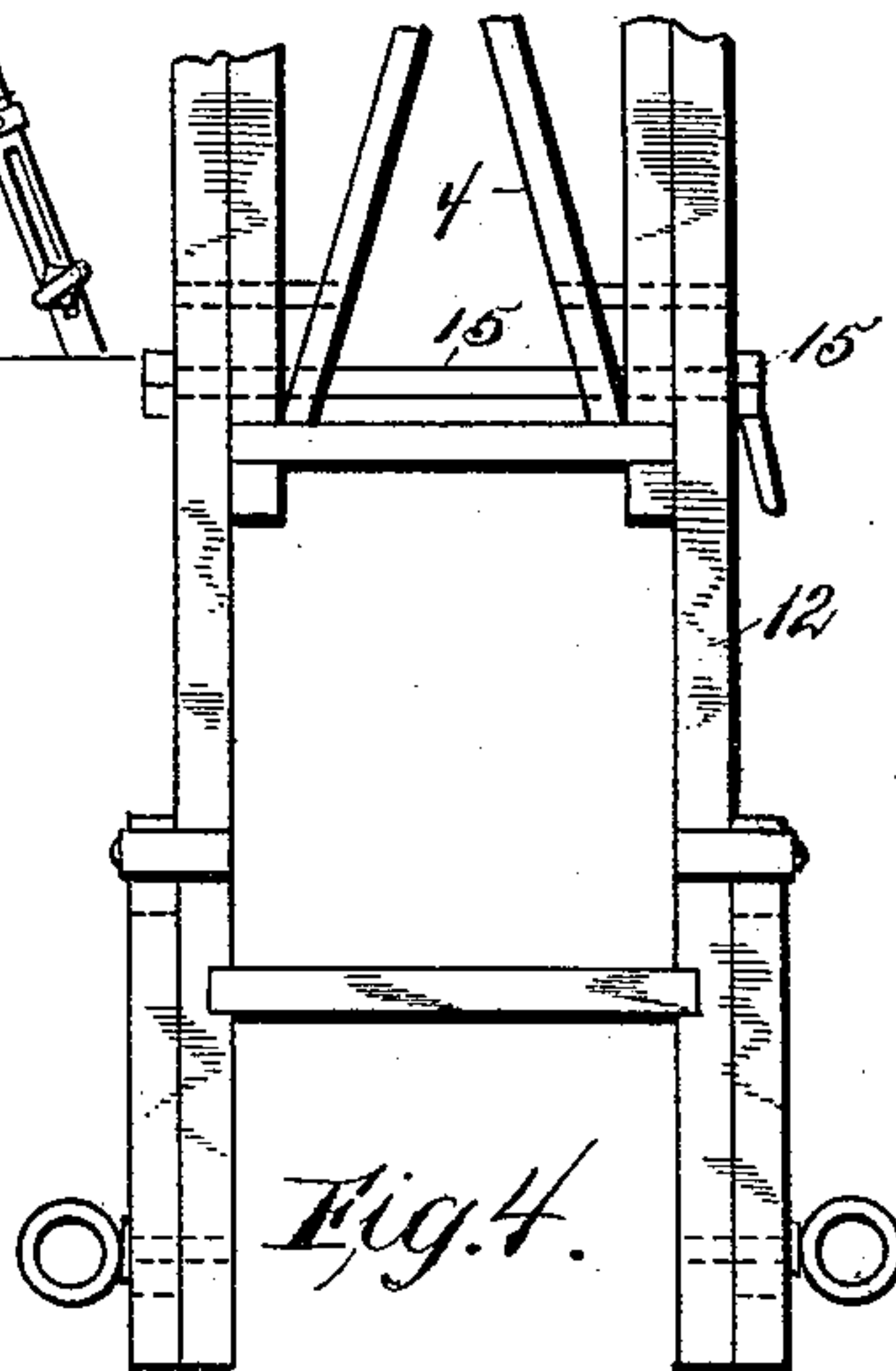


Fig. 4.

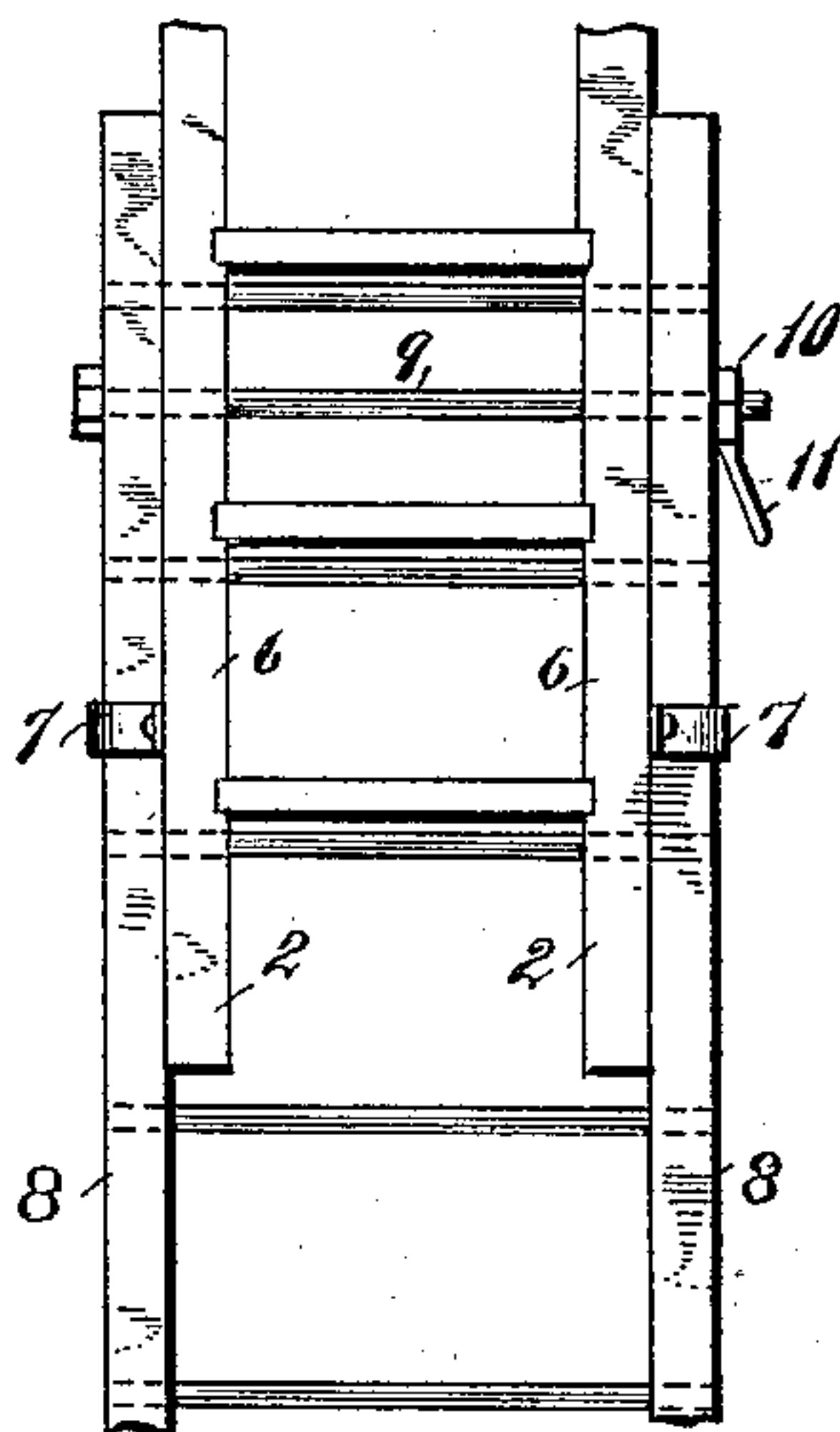


Fig. 2.

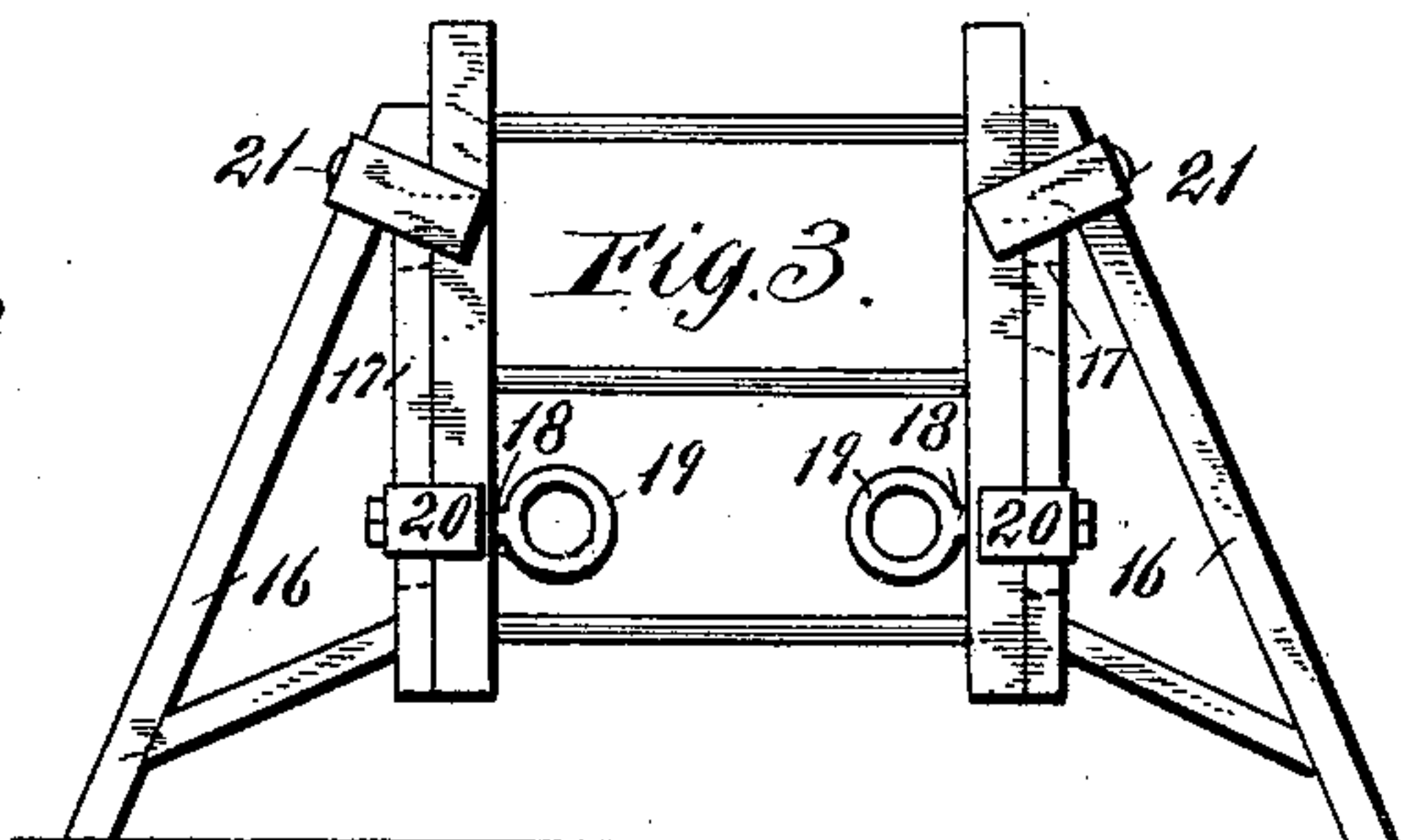


Fig. 3.

Witnesses/

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UNITED STATES PATENT OFFICE.

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LADDER.

SPECIFICATION forming part of Letters Patent No. 495,920, dated April 18, 1893.

Application filed June 6, 1892. Serial No. 435,676. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ADDISON STROHM, of Industry, county of Beaver, and State of Pennsylvania, have invented certain new and useful Improvements in Ladders, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce an extensible ladder of the kind ordinarily known as step ladders, which may be constructed at a moderate cost; and that may be readily taken to pieces so as to be used as a step ladder of the ordinary kind, or as one of a greater height.

My ladder also possesses peculiar points of value which will clearly appear from the following description and from the appended claims. The characteristic difference between a step ladder and one of the ordinary kind is that the step ladder is self-supporting; and that it is provided with a series of steps instead of rungs set into the sides of the ladder at such an angle that when the ladder is spread the steps will be substantially horizontal, giving a firmer support for a person, and adapted to carry different articles which may be used by the individual upon the ladder. My invention is adapted to retain all these features that render the step ladder a necessity for certain purposes, and at the same time provide against the ladder being too heavy to be readily handled.

In the accompanying drawings, Figure 1 is a side elevation of my ladder set up. Fig. 2 is a detail view of the front main frame and extension frame at their place of union. Fig. 3 is a detail view of the spreader feet and a portion of the ladder detached. Fig. 4 is a view similar to Fig. 2 of the rear main frame and extension frame.

Referring to the figures on the drawings, 1 indicates the front part of a step ladder, provided with side pieces 2 and steps 3, and with a hinged rear supporting frame 4, as usual. The sides of the front part of the ladder are provided with grooves 5 that may be sawed into the frame pieces 6, or separate pieces of wood joined together in any suitable manner at their upper ends may be employed. The lower ends of these sides are opened throughout, and are firmly secured at a suit-

able distance from each other by metallic bands 7.

8 indicates the front extension frame, which consists preferably of a light ladder provided with rungs instead of steps to give it lightness.

9 indicates a rod and 10 a nut provided with a handle 11, by which it may be readily screwed and unscrewed. The rod is in a line with the rungs of the ladder; and the width of the extension frame is a little greater than that of the main frame, so that the latter will fit loosely between the sides of the extension frame.

In use the extension frame is joined to the front part of the step ladder frame, so that the rungs enter the grooves 5 therein, and the sides of the extension frame enter the bands 7. When the parts have been adjusted to the desired height, the nut 10 is screwed upon its rod, and the parts are firmly fastened together.

For increasing the length of the rear supporting frame, I provide a frame 12, which is preferably rectangular in shape, and corresponds in length to the extension frame of the front part of the ladder. It is joined together at its upper part by strips 13 on opposite sides of the side pieces, so as to admit the insertion of the lower part of the supporting frame of the ladder between them. It is provided in its sides with grooves 14, and with a rod and nut 15 at the front part. The lower part of the supporting frame being put into position, and a rod 15 inserted, the parts may be slipped one upon the other until adjusted to a suitable length, and then the nut and bolt tightened to hold the parts together, as in adjusting the front part of the ladder.

The foregoing description of adjustable extension pieces in the front and back part of the ladder I call the main extensions. These parts may be adjusted to nearly the proper height and the ladder set up; and afterward, for more perfect adjustment, I provide auxiliary extensions at the feet of the main extension frames, so that a person on the ground can readily raise or lower the ladder, or each foot of the ladder separately, by the manipulation of a lightly constructed set of feet that can be handled without difficulty. To provide at the same time for security against the ladder toppling over sidewise I make these

feet wider than the main frame of the ladder, and for that reason call them spreader feet. They are substantially the same for the front and rear parts of the ladder, and I will describe one piece, in order that all may be understood from the single description.

The spreader foot consists preferably of a triangular frame 16, constructed substantially as illustrated in the drawings. 17 indicates a groove in one side of this frame that in use is set next to the side of the foot of the ladder. 18 indicates a screw, preferably provided with a handle 19 for turning it readily, which in use is passed through the groove 17 and is screwed into the angular metallic piece 20, so that the spreader foot may be adjusted longitudinally upon the side of the ladder, and then be securely and firmly fastened in position.

21 indicates a metallic clip secured to the upper part of the spreader foot and overlapping the sides of the extension frame so as to hold the parts firmly together.

The spreader-foot, as above described, is obviously adapted for use on any kind of a ladder, for the purpose of holding it securely in the upright position.

To keep the legs of the ladder from spread-

ing too wide upon their hinges I prefer to use a chain 22, as illustrated, uniting the parts together.

What I claim is—

1. In a ladder the combination with the frame piece provided with a groove, an extension frame wider than said frame piece, and provided with a rod and nut adapted to enter the groove, and a band securing the parts of the main frame piece together, and adapted to fit over the side pieces of the extension frame, substantially as set forth.

2. The combination with the lower extension frames, of the auxiliary extensions or spreaders consisting of angular frames having grooves at the sides adjacent to the lower extension frames, the screw bolts passing through said grooves, and through the extension frames, the angle plates, and clips whereby the ladder may be adjusted after being set up, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

THOMAS ADDISON STROHM.

Witnesses:

ALEX. AMMON,
WILBER F. TODD.