

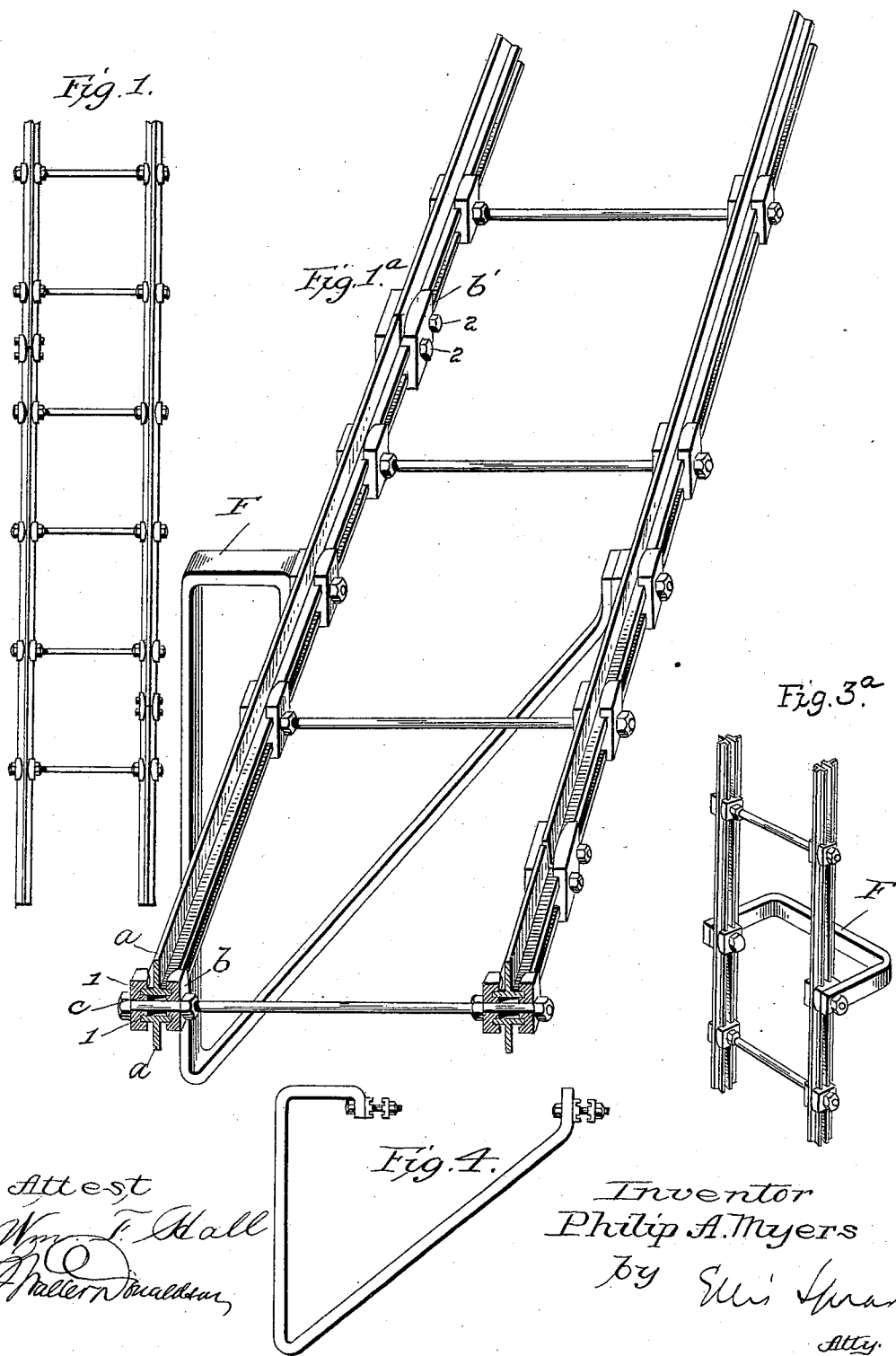
(No Model.)

2 Sheets—Sheet 1.

P. A. MYERS.  
LADDER OR STAIRWAY.

No. 532,983.

Patented Jan. 22, 1895.



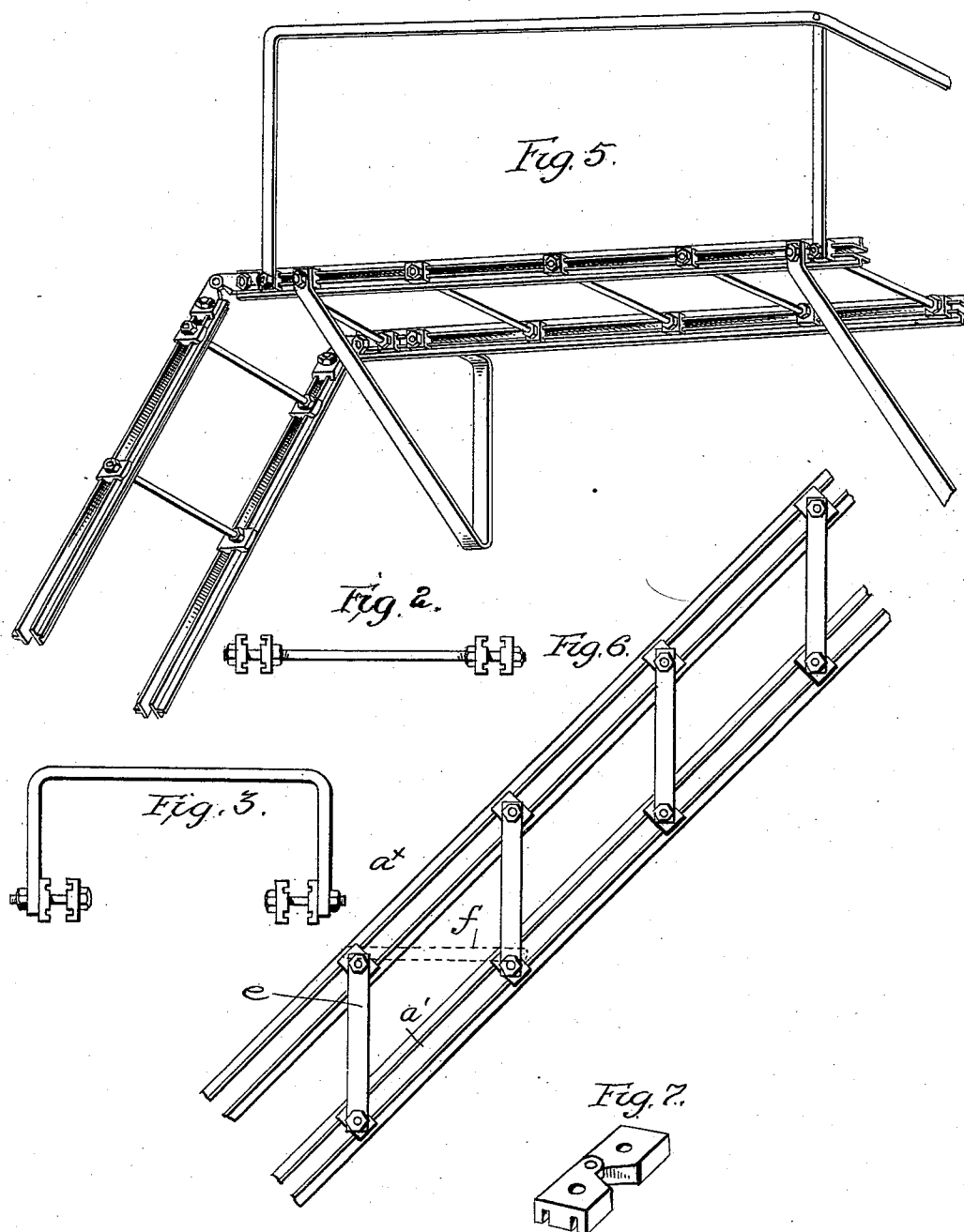
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# UNITED STATES PATENT OFFICE.

PHILIP A. MYERS, OF ASHLAND, OHIO.

## LADDER OR STAIRWAY.

SPECIFICATION forming part of Letters Patent No. 532,983, dated January 22, 1895.

Application filed June 21, 1894. Serial No. 515,264. (No model.)

*To all whom it may concern:*

Be it known that I, PHILIP A. MYERS, a citizen of the United States of America, residing at Ashland, in the State of Ohio, have invented certain new and useful Improvements in Ladders or Stairways, of which the following is a specification.

My invention hereinafter described, relates to the details of construction of ladders or stairways.

The principal object sought to be accomplished, is to provide a combination of special parts, by means of which a metal ladder or stairway may be put together of any desired length, without the aid of a skilled workman.

The results of my invention will still further appear in the description of the details of construction and the combination of the parts.

My invention is illustrated in the accompanying drawings, in which—

Figure 1, shows a front view of a ladder of ordinary general form, constructed in accordance with my invention. Fig. 1<sup>a</sup>, shows the ladder in connection with a bracket for attaching it permanently to the wall. Figs. 2, 3, and 4, inclusive, illustrate still further details of the brackets, and Fig. 3<sup>a</sup> is a perspective view of a portion of a ladder with the bracket shown in Fig. 3 for supporting the same. Fig. 5, shows the ladder with the landings when it is applied to a building as a fire escape. Fig. 6, illustrates the same construction applied to a stairway. Fig. 7, shows the joint clamps.

Referring first to the simplest form of ladder, shown in Fig. 1, it will be observed that the side pieces or rails are composed of T-irons *a*. These are placed back to back or with the bottom flanges in parallel planes and a little distance apart, the distance being sufficient for the connecting bolts and intermediate parts of the clamps. The clamps are formed as shown at *b* with the plain outer faces and with parallel grooves *11*, on the interior faces, made to fit snugly over the edge of the rail flanges. The intermediate part *c* lies between the two irons. Two of these clamps are used at each joint. The clamp *b'* is shown in Fig. 1, at a joint of the irons at one side of the rails and the two are made of sufficient length to form a splice. They are con-

nected by two bolts 2 2, which pass through holes in the clamps and through the space between the iron being provided with nuts 55 on the outside. The same form of clamp is used for the rounds of the ladder, excepting that it need not be so long and is made only with one hole. These clamps are shown at *b*. They are provided with a single hole to 60 receive the end of the round. The round is threaded and provided with a jam nut which bears against the face of the clamps. The jam nuts at both ends are turned up so as to firmly clamp the rails and hold the rounds 65 firmly in place.

It will be observed that the rounds in this construction may be set at any distance apart and that the ladder may be put together by the use only of an ordinary wrench, unless 70 some definite length is required, of which the iron lengths are not a multiple, when only a cutting tool is required in addition. The material for the side rails may be furnished with a suitable number of half lengths so that 75 ordinarily no cutting is required.

The material for a ladder may be supplied in a form much more portable than an ordinary ladder and may be put up by any person.

The same form of ladder is applicable as a 80 fire escape and it may be attached to the building in a plane parallel to the walls, by means of a bracket shown in Figs. 3 and 4 which is formed of a bar of metal bent at right angles and arranged to be connected at the 85 ends to the clamp bolts as shown in the drawings.

Where the ladder is to be placed in a plane at right angles to the wall I provide brackets F of triangular shape, the ends of which are 90 turned on one of the sides and are also adapted to connect with the clamping bolts.

When the ladder is thus used as a fire escape with landing, the landing may be made of the same construction as the ladder itself, 95 that is to say by a part of the ladder simply bent in a horizontal position and supported by the brackets F in the same manner. On the horizontal part the rounds may be covered with a sheet of metal or other flooring. 100 In a fire escape of this form and construction the ladder is practically continuous, being bent simply to form the landings.

The rounds may be of circular rod or they

may be flattened or made of bars rounded and threaded at the ends.

Where the ladder is set inclined and provided with landings, I may provide a hinge clamp (shown in Fig. 7) connecting the inclined to the horizontal part, so that it may be set at any angle without bending the irons. It is a very easy matter to apply hand rails to the ladder rails the same as the rounds or steps.

Where fire escapes are required to be made in the form of a stair way, two sets of the side rails may be used on each side of the way as illustrated in Fig. 6, which shows one side, the upper rail  $a^x$  being connected to the lower rail  $a'$  by means of a riser bar  $e$  which is provided with a hole at each end fitting over the round at the point where it enters the clamp. The treads  $f$  rest upon and are secured to the rounds.

The same construction and arrangement of side rails, and the same form of rounds, or treads, may be used as in the simple form of ladder above described, and to construct a stair way, according to my invention I simply arrange two of my ladders obliquely one above the other, with the vertical bars from the rounds of one ladder to those of the other and lay treads on the rounds. It will be understood that the clamps which hold the rounds are sufficient for the rails, excepting at the joints.

While the T form of the irons is better and secures more perfectly the results, I do not confine myself to this form, but a pair of irons for each rail and the clamps therefor, spacing said irons, and bolts and rounds passing

through the space between the pair of irons of each rail, are essential.

I claim—

1. In a ladder or stairway, rails composed of double irons held at a distance apart by clamps and bolts, and rounds or steps, connected to the rails by means of clamps, the ends of the rounds or steps being arranged to pass through the clamps and the space between the irons, substantially as described.

2. In combination with a ladder composed of double iron rails, and rounds or steps connected to said rails by ends passing through clamps and between the irons of said rails, a bracket composed of bent iron bar having holes in the ends and connected to the clamp bolts of the rails, substantially as described.

3. In combination with a ladder composed of double iron rails, clamps on said double irons spacing the same, and rounds passing through the clamps and space, a landing formed of a section of the ladder and jointed thereto or continuous therewith, substantially as described.

4. In combination with a ladder having its sides made up of double rails the clamps spacing the same, the cross bars a second ladder section and the joint clamp between them, comprising the clamping pieces adapted to space the bars and hinged together, substantially as described.

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

PHILIP A. MYERS.

Witnesses:

W. O. McDOWELL,  
F. B. KELLOGG.