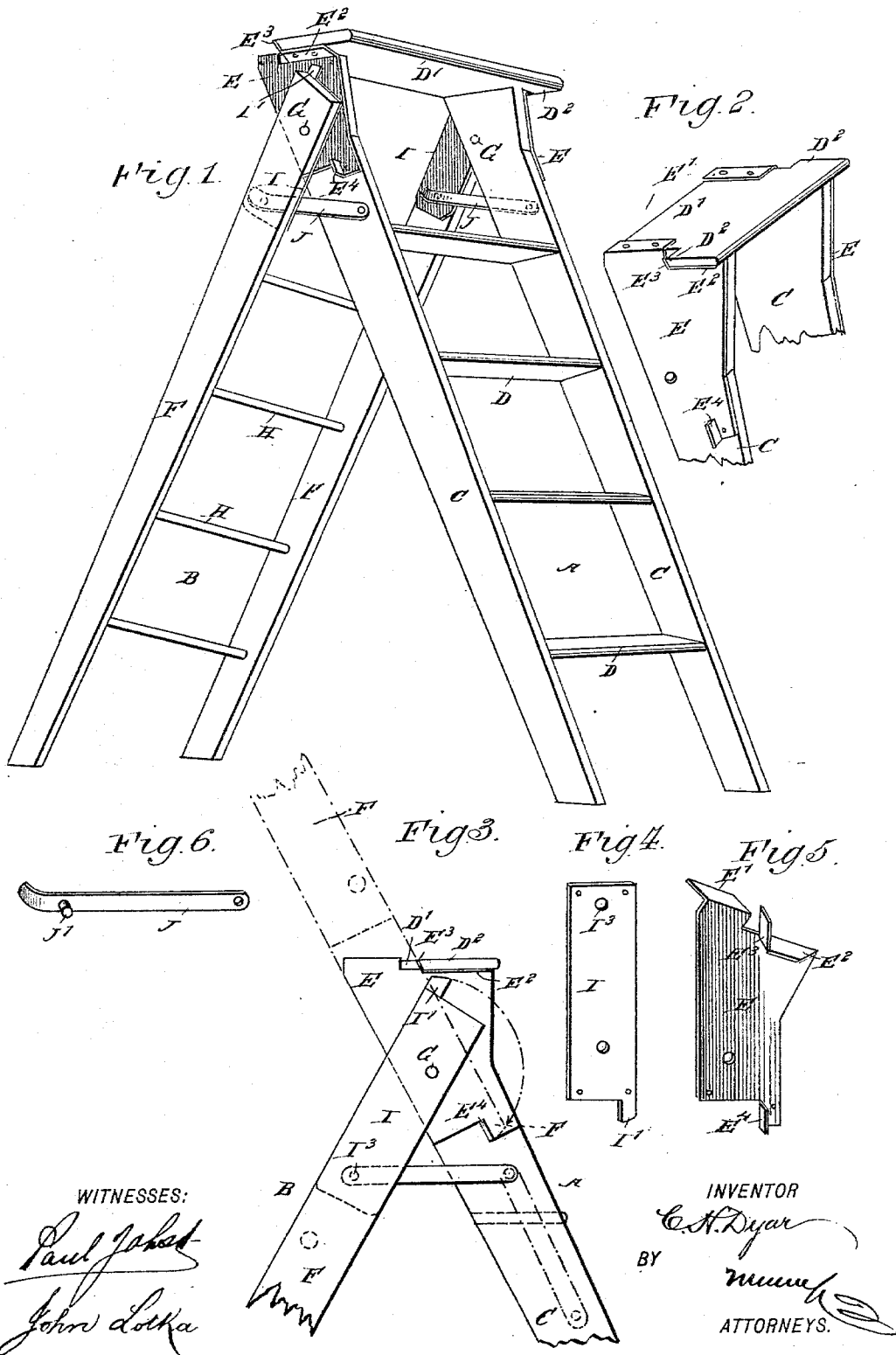


(No Model.)

C. H. DYAR.
STEP LADDER.

No. 562,716.

Patented June 23, 1896.



UNITED STATES PATENT OFFICE.

CHARLES H. DYAR, OF ONTARIO, CALIFORNIA.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 562,716, dated June 23, 1896.

Application filed September 10, 1895. Serial No. 562,073. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. DYAR, of Ontario, in the county of San Bernardino and State of California, have invented a new and Improved Step-Ladder, of which the following is a full, clear, and exact description.

My invention relates to step-ladders, and particularly that class of step-ladders in which the support or brace is provided with rungs, and is adapted to form an extension of the step-ladder proper by being swung on a pivot until it aligns with the step-ladder.

The object of my invention is to provide a very simple and strong ladder of the above-indicated class.

The invention will be fully described hereinafter, and the features of novelty pointed out in the claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved step-ladder. Fig. 2 is a broken perspective view of the upper end of the step-ladder proper. Fig. 3 is a broken side elevation illustrating the connection between the ladder proper and its support. Fig. 4 is a detail view of a metal plate secured to the ends of the support. Fig. 5 shows the plate which is secured to the ends of the step-ladder proper, and Fig. 6 is a detail view of the latch for connecting the ladder to its support.

Like letters denote like parts in all the views.

In carrying out my invention I construct the step-ladder of two sections having a hinged connection—viz., the step-ladder proper, A, and the support or extension B. The section A comprises the sides C and the steps D, connecting the same. To the upper ends of the sides C, and on the outer faces thereof, are attached sheet-metal plates E, each of the said plates being provided with a flange E', projecting at a right angle to the plane of the plate and arranged to take over the top step D' of the ladder-section A. The plates E are further provided at their upper ends with flanges E², projecting at a right angle to the plane of the plate and on the side opposite to the flange E', the flange E² being adapted for attachment to the lower side of the projection D², extending laterally from the front portion of the top step D'. The flanges E² are provided at their

rear ends with upturned flanges E³, adapted to be secured to the rear sides of the projections D². Each plate E also has a flange or projection E⁴ at its lower end, the said flange being on the same side of the plate as the flange E², and, while the flanges E' and E² extend transversely of the sides C of the ladder, the flanges E³ and E⁴ extend longitudinally thereof.

The support or extension B consists of the sides F, which are spaced such a distance apart that their upper ends embrace the upper ends of the sides C of the ladder-section A. The two sections A and B are pivotally connected, as shown at G, and preferably two independent pivots are used, so as to avoid forming an obstruction at the top of the ladder-section A. For the same reason the sides F of the section B are located exteriorly of the sides C of the section A, so that the available width of the step-ladder proper is the same at the top as at the bottom.

The sides F are of such a width that when the section B is swung up into longitudinal alignment with the step-ladder proper, A, the front edges of the sides F will abut against the flanges E³ on the projection D² of the step D'. (See dotted lines in Fig. 3.) The sides F are connected at intervals by the rungs H.

To the pivot ends of the sides, on the inner faces thereof, are secured sheet-metal plates I, provided at their ends with projections I', adapted to shut against the flanges E⁴ when the ladder is extended, as shown in dotted lines in Fig. 3.

The connection at the pivots G is such that the plates E and I will bind upon each other, and the friction between said plates will hold the ladder-sections A and B in any desired position. In order to securely connect the said sections when the ladder is used as a step-ladder, I employ the latches J, which, as shown, are pivoted to the outer faces of the sides C of the lower section A, and, as shown best in Fig. 6, are provided with pins J', adapted to enter apertures I² in the plates I.

It will be seen that by the construction described the joint between the sections A and B is rendered very strong, that the ladder may be readily extended, that in the extended as well as in the ordinary position no part of the section B projects between the sides C of

section A, so that the full width of the ladder is available at the top of the section A, and that in the extended position the abutting projections I' and E⁴ and the projections D², abutting against the sides F, form a very strong connection between the said sections.

I desire it to be understood that I do not limit myself to the exact construction described, and that my improvement may be applied to ladders of a different design from that illustrated by the drawings.

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

1. A ladder comprising two pivoted sections, one of which embraces the ends of the other section, the narrow section having above and below its pivot-point outwardly-extending projections whose faces are adapted to simultaneously engage the sides of the wide section above and below the pivot-point thereof when the sections are swung into alinement, substantially as described.

2. A ladder comprising two pivoted sections, one of which embraces the ends of the other section, the narrow section having above its pivot-point outwardly-extending projections whose rear faces are adapted to be engaged by the sides of the wide section, when the sections are swung into alinement, and the narrow section having also below its pivot-point other outwardly-extending projections whose front faces are likewise adapted to be engaged by the wide section, when the sections are swung into alinement, where-

by the upper section of the ladder will be afforded a support both above and below its pivot-point in its extended position substantially as described.

3. A ladder comprising two sections, one of which embraces the ends of the other section, the narrow section having at the front portion of its sides and at the upper ends thereof outwardly-extending projections adapted to be engaged by the front edges of the sides of the wide section, the narrow section having also at a distance below its end, other outwardly-extending projections, and the wide section having projections extending longitudinally beyond its end at the front portion of its sides, and adapted to engage with their rear faces the lower projections of the narrow section when the front edges of the wide section engage the upper projections of the narrow section, substantially as described.

4. A step-ladder, comprising a step-ladder proper having a top step provided with outwardly-extending projections, the step-ladder proper also having outwardly-extending projections below the top step, and a supporting ladder-section pivotally connected to the step-ladder proper between the said two sets of projections and adapted to simultaneously engage both of them, said supporting-section embracing the step-ladder proper, substantially as described.

CHARLES H. DYAR.

Witnesses:

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