

No. 763,209.

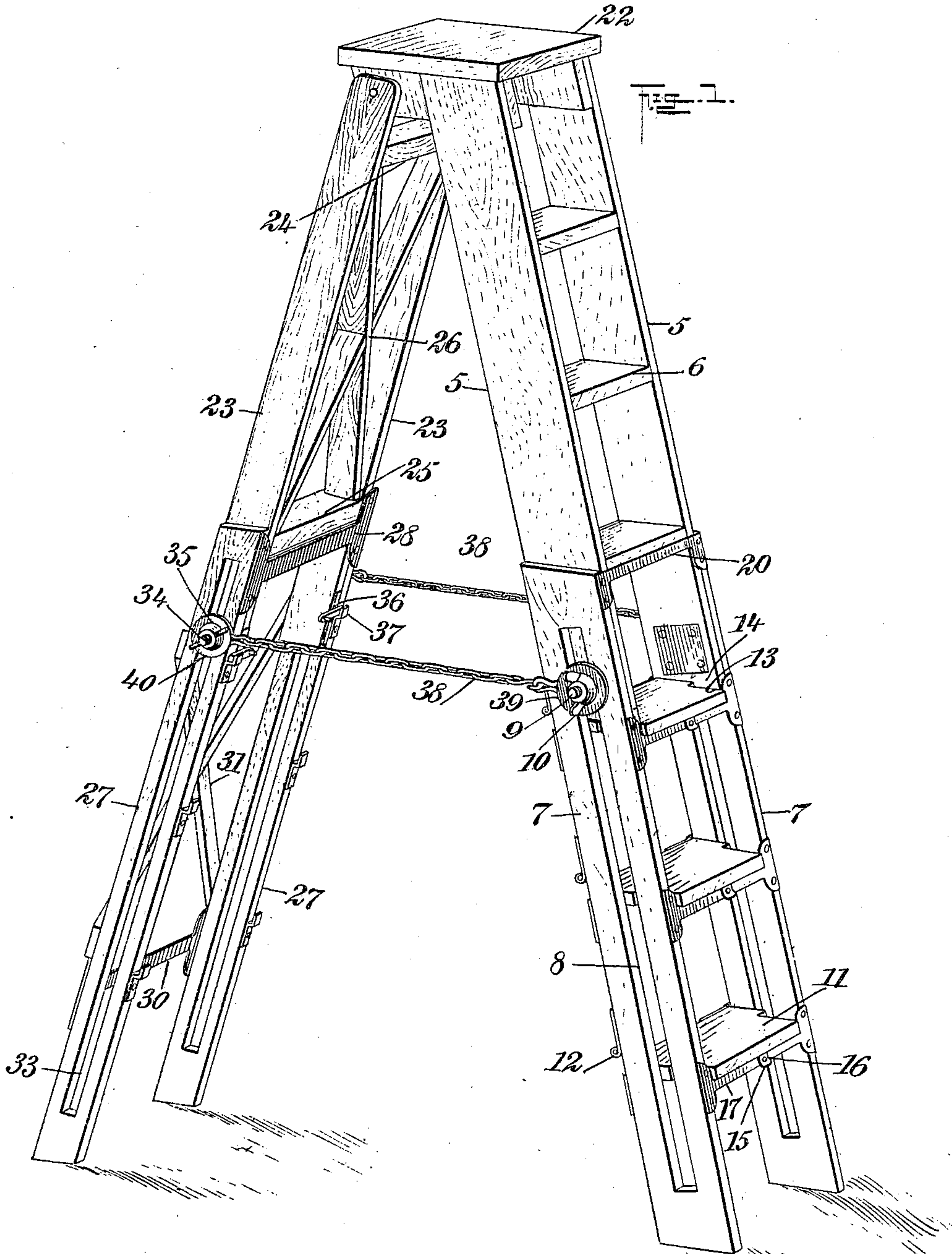
PATENTED JUNE 21, 1904.

H. L. SCHWALBE.
STEP LADDER.

APPLICATION FILED DEC. 17, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

E. J. Schwalbe
C. R. Ferguson

INVENTOR

Herman L. Schwalbe

BY

M. M. M.

ATTORNEYS

No. 763,209.

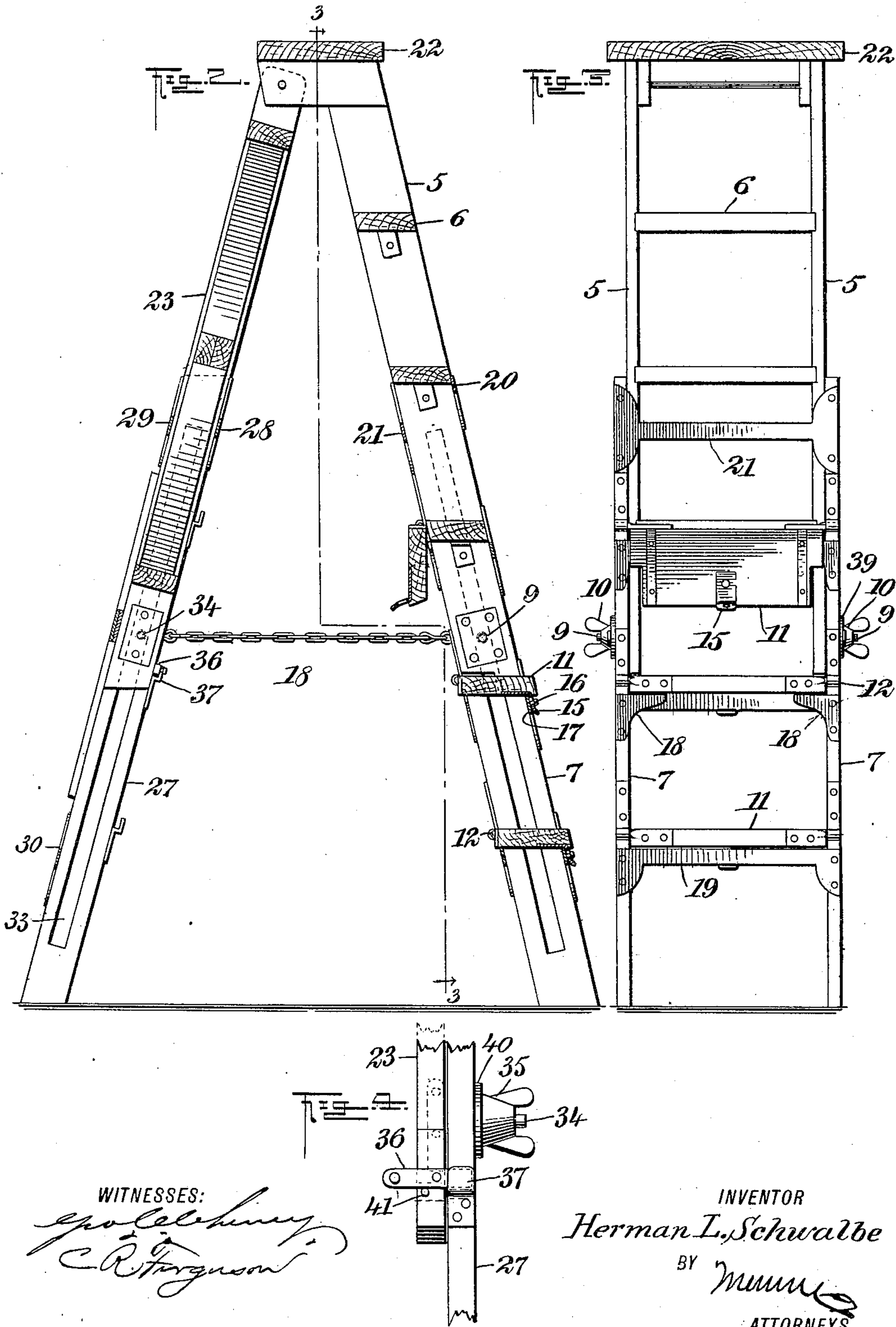
PATENTED JUNE 21, 1904.

H. L. SCHWALBE.
STEP LADDER.

APPLICATION FILED DEC. 17, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

HERMAN LOUIS SCHWALBE, OF JERSEY CITY, NEW JERSEY.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 763,209, dated June 21, 1904.

Application filed December 17, 1903. Serial No. 185,513. (No model.)

To all whom it may concern:

Be it known that I, HERMAN LOUIS SCHWALBE, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Step-Ladder, of which the following is a full, clear, and exact description.

This invention relates to improvements in extension step-ladders, an object being to provide a ladder of this character that will be simple in construction and very rigid and strong in any one of its adjusted positions.

I will describe a step-ladder embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a step-ladder embodying my invention. Fig. 2 is a sectional elevation thereof. Fig. 3 is a section on the line 3 3 of Fig. 2, and Fig. 4 is a detail view illustrating the fastening means employed.

The step-ladder comprises upper and lower sections having sliding relation one upon the other. As here shown, the upper section consists of the side rails 5, to which steps 6 are rigidly attached. The lower section consists of the side rails 7, which are longitudinally slotted, as indicated at 8, to receive bolts 9, extended from the members 5 and provided with clamping-nuts 10.

Mounted to swing on the lower section of the step-ladder are steps 11. As here shown, these steps have lugs at their rear edges, which engage in bearings 12, secured to the rear edges of the side members 7. The ends of the steps 11 at the front are cut away, as indicated at 13, to receive downward projections 14 on the lower ends of the members 5—that is, the uppermost one of the swinging steps will be engaged by the lower ends of said members 5 and the projections thereof will pass into the cut-away portions of the steps.

On the free or front edges of the steps 11 are spring-clips 15, having perforations adapted to receive pins 16 on cross-bars 17, at-

tached to the front edges of the members 7, and upon these cross-bars the swinging steps will rest at their front portions when in operative position, and at their rear edges the upper swinging steps will rest on brackets 18, attached to the rear edges of the members 7, and the lower step will rest on a cross-bar 19, secured to the rear edges of said members 7. At the upper portion of the lower section of the ladder are a front cross-bar 20 and a rear cross-bar 21. These cross-bars engage, respectively, with the front and rear edges of the side members of the upper section of the ladder. On the upper end of the upper section of the ladder is a platform 22, with which a supporting-leg has swinging connection. This supporting-leg comprises an upper section consisting of side rails 23, connected at the top by a cross-bar 24 and at the bottom by a cross-bar 25, and this upper section is stiffened by crossed braces 26.

The lower section of the leg mounted to slide on the upper section consists of side rails 27, connected at the top by bars 28 29, which engage, respectively, against the inner and outer edges of the bars 23 and form guides. The side rails 27 are connected near the bottom by a cross-bar 30 and are braced by cross-braces 31.

The rails 27 have longitudinal slots 33, through which bolts 34, secured to the rails 23, pass, and on the outer ends of these bolts are clamping-nuts 35. In addition to the clamping means for holding the upper and lower sections of the leg as adjusted I provide latches 36, which are mounted to swing on the inner edges of the rails 23 near the lower end and to engage with keepers 37, secured on the rear edges of the rails 27 at suitable distances apart.

To prevent the leg from swinging too far outward with relation to the front portion of the step-ladder, I provide flexible connections between the leg and said front portion. As here shown, this flexible connection consists of chains 38, attached at one end to eyes on washers 39, mounted on the bolts 9, and at the other end to eyes on washers 40, mounted on the bolts 34.

In the operation when it is desired to ex-

tend the step-ladder the members 7 are to be drawn downward and clamped, and the steps 11 below the fixed steps are to be turned outward, as indicated in Fig. 1. The swinging 5 steps above the fixed steps will hang loosely at the rear, as indicated in Fig. 2.

Of course the leg must be adjusted to correspond with the step portion, and, as before stated, the latches 36, by engaging with the 10 keepers 37, will, in addition to the clamping-nuts 35, hold the parts as adjusted. It will be noted that the latches 36 when in supporting position engage at one end on pins 41, attached to the rails 23.

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

1. A step-ladder comprising two sections having sliding relation one with the other, and carrying steps, a leg having swinging connection with the upper step-carrying section, the 20 said leg comprising sections slidable one upon the other, bolts passing through the members carrying the steps, clamping-nuts on the bolts, washers mounted on the bolts and having eyes, 25 bolts connecting the members of the leg, clamping-nuts on said bolts, washers on the bolts provided with eyes, and flexible connections between the first-named washer-eyes and the last-named washer-eyes.

30 2. A step-ladder comprising an upper section having fixed steps, a lower section having sliding relation with the upper section, the side members of the lower section being slotted, bolts extended from the side members of 35 the upper section through the said slots, clamping-nuts on said bolts, swinging steps on the lower section, the said swinging steps having

their pivotal connections with the rear edges of the side members of the lower section, the ends of said swinging steps at the front having cut-away portions, projections on the 40 lower ends of the side members of the upper sections for engaging in said cut-away portions, bars on the lower section on which the front portions of the swinging steps may rest, 45 and an adjustable leg having swinging connection with the step-ladder.

3. A step-ladder comprising an upper section having fixed steps, a lower section having sliding connection with the upper section, 50 the side members of the lower section being slotted, swinging steps carried by the lower section, bolts passing from the upper section through said slots, clamping-nuts on said bolts, washers mounted on the bolts and having 55 eyes, a leg having swinging connection with the upper portion of the said upper section of the ladder, the said leg comprising an upper member, a lower member mounted to slide thereon, the side bars of the lower member 60 being slotted, bolts passing from the upper member of the leg through said slots, clamping-nuts on said bolts, washers mounted on the bolts and having eyes, and flexible connections between said eyes and the eyes on the 65 first-named washers.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN LOUIS SCHWALBE.

Witnesses:

HENRY MARTIN,
AUGUST SCHEMLER.