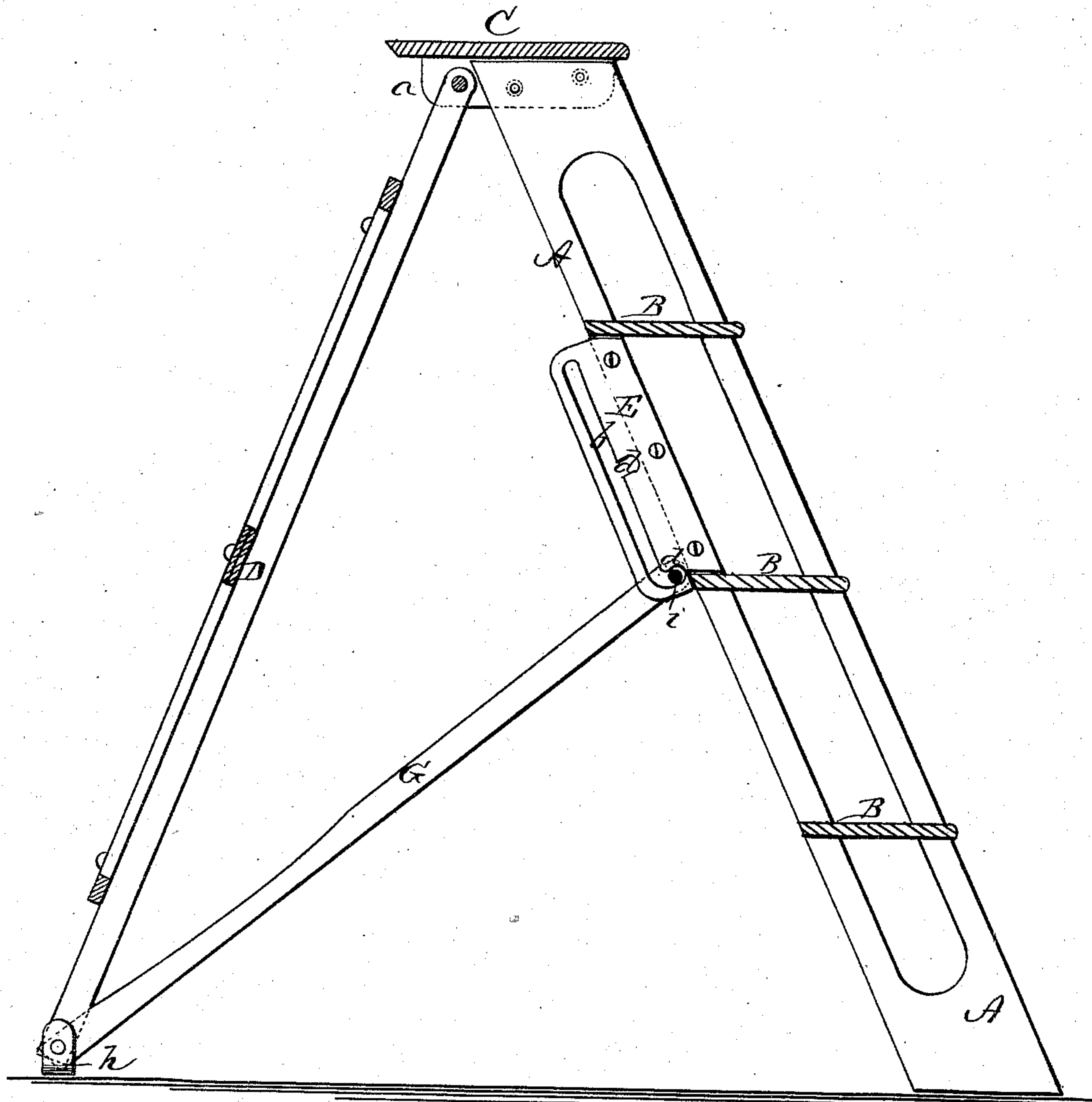


H. NIEMANN.
Step-Ladders.

No. 157,414.

Patented Dec. 1, 1874.



WITNESSES:

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HENRY NIEMANN, OF YPSILANTI, MICHIGAN, ASSIGNOR TO EDWARD W. GRANT, OF SAME PLACE.

IMPROVEMENT IN STEP-LADDERS.

Specification forming part of Letters Patent No. 157,414, dated December 1, 1874; application filed November 9, 1874.

To all whom it may concern:

Be it known that I, HENRY NIEMANN, of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Step-Ladders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in certain improvements upon step-ladders, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a vertical section of a step-ladder embodying my improvements.

A represents the side pieces of the step-ladder; B B, the steps thereof. C is the top step or platform, connected to the side pieces A by means of brackets *a*, and to these brackets the rear legs D D are pivoted, said legs being suitably braced. These parts may all be constructed in any of the known and usual ways. To each of the side pieces A is secured a metal plate, E, of suitable length, which projects in rear thereof, and provided with a longitudinal slot, *b*, which runs parallel, or nearly so, with the rear edge of the side piece. From the slot *b* one or more short slots, *d*, extend inward toward the side piece A. At the lower end of each leg D is pivoted a brace, G, and the up-

per ends of these braces are connected by a rod, *i*, which passes through the slots *b* in the plates E. When the ladder is spread out the rod *i* enters the transverse slots *d* in the plates E, and locks the ladder firmly in position. By having a series of such transverse slots, the ladder may be spread more or less, as desired, and locked in any position. On the lower end of each leg D is pivoted a foot, *h*, made in the form of a stirrup, or other suitable shape, and fastened, or rather pivoted, by the same bolt that pivots the brace G to the leg. These feet, turning on their pivots, will always rest flat on the ground, no matter whether the ladder is spread more or less.

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

1. The combination, with a step-ladder having rear legs hinged thereto, of the plates E, provided with longitudinal slots *b* and transverse slots *d*, and brace G, pivoted to the lower ends of the rear legs, and connected at its upper end by rod *i*, all constructed and arranged as and for the purpose set forth.

2. The feet *h h*, pivoted on the lower ends of the hinged legs D of a step-ladder, for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY NIEMANN.

Witnesses:

S. M. CUTCHEON,
E. P. ALLEN.