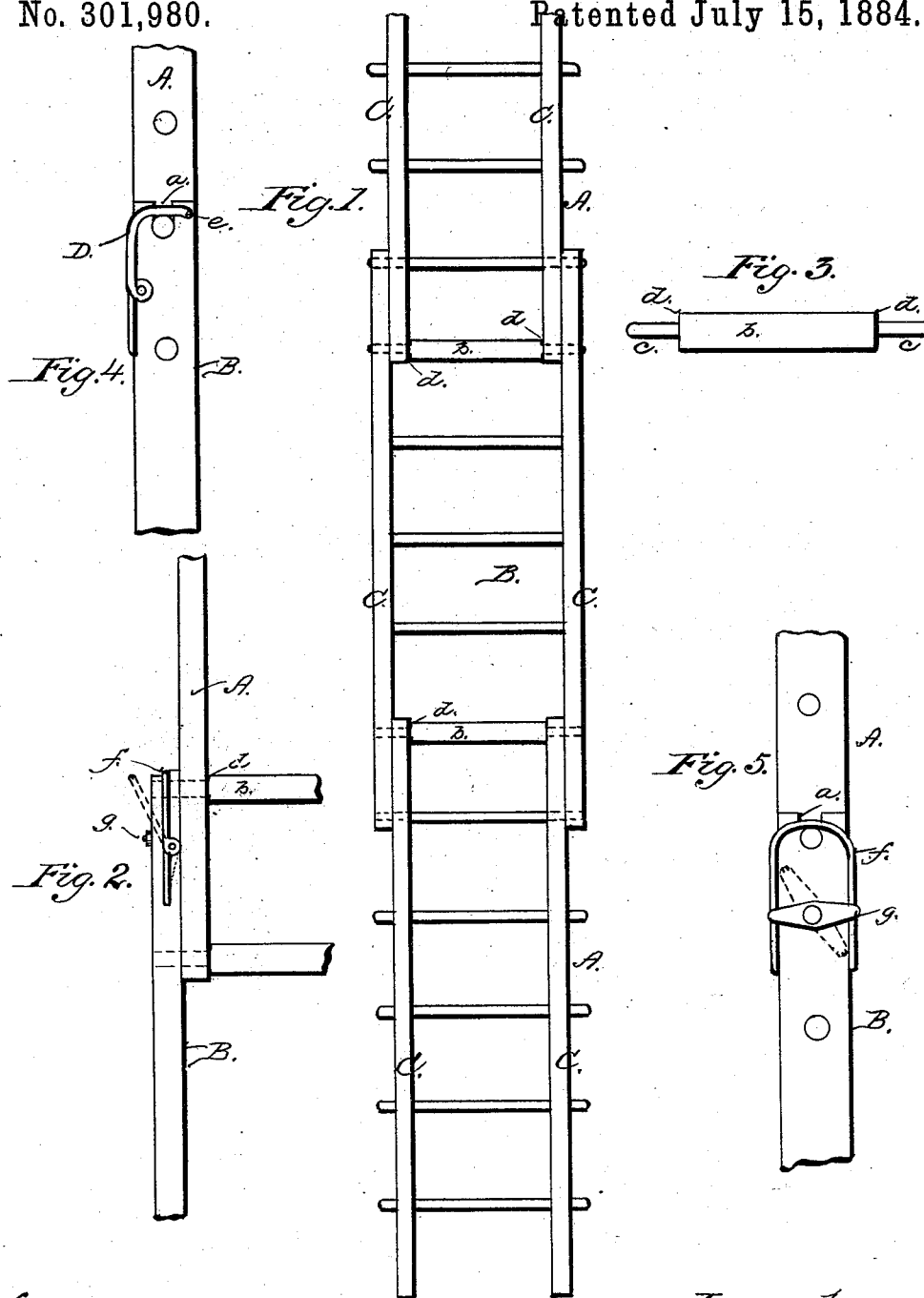


(No Model.)

P. T. GATES.
SECTIONAL LADDER.

No. 301,980.

Patented July 15, 1884.



Witnesses:
O. Fred. Sellers,
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Inventor:
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UNITED STATES PATENT OFFICE.

PHILEMON TENNEY GATES, OF NEW YORK, N. Y.

SECTIONAL LADDER.

SPECIFICATION forming part of Letters Patent No. 301,980, dated July 15, 1884.

Application filed May 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, PHILEMON T. GATES, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Sectional Ladders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has for its object to provide an improved and novel construction of sectional ladders, whereby two or more sections of different widths are adapted to be joined together to form a continuous ladder of any desired length, the abutting ends of one section being firmly interlocked with the ends of an adjacent section or sections, all as will be hereinafter fully described, and specifically designated in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improvements, showing a number of sections united together to form a continuous ladder; Fig. 2, a detail sectional view of the interlocking ends of two sections, and Figs. 3 to 5 detail views of my improvements.

Similar letters of reference occurring on the several figures indicate corresponding parts.

In carrying out my improvements the several sections of the ladder are constructed of different widths—that is to say, each alternate section being of a narrower width than the preceding one, or vice versa—the sides of the narrow sections A fitting within the inner sides of the wider sections B, as fully shown in Fig. 1. The upper and lower ends of the sides C of each of these sections A B are provided with suitable slots, *a*, while the upper and lower rounds of each section are so constructed as to provide an enlarged central portion or tread, *b*, terminating in elongated ends *c* of a less diameter, leaving a shoulder or projection, *d*, a suitable distance from the inner sides of each section sufficient to provide a firm seat for the slotted ends of the sides of the next adjacent section or sections,

as fully shown in Fig. 2. By means of this construction the ends of each section are securely held in the seat thus provided, the projections *d* effectually preventing any lateral motion or slipping of the ends thus interlocked. The one ends of the sides of each of the sections A B are provided with suitable fastening devices for securing the said sections together. One form of fastening device is shown at Fig. 4, and is composed of a suitable spring, D, which is attached to both ends of the sides, C—one on each side—the free end of the said spring being provided with an inwardly-projecting end or arm, *e*, which projects over the slots *a* in the ends of the sections, as shown.

Another form of spring or fastener is shown in Fig. 5, and is composed of a spring-loop, *f*, the lower ends of which are secured to the sides of the sections, while the upper or looped end is adapted to be sprung over the end of the round which fits in the slot *a* of the said section. A suitable button or lever, *g*, being pivoted at its center on the end of the sides, C, is provided for the purpose of holding the said looped spring in position over the end of the round after it has passed into the slot *a*, the said button or lever being turned so that its projecting ends lap over the spring on each side, as fully shown in Fig. 5.

I do not confine myself, however, to the springs or fasteners above described, as it is obvious that equivalents or modifications of the same may be employed with equal effect, and such equivalents and modifications are hereby contemplated by me.

In the operation of connecting two or more of the sections A B together the ends of the narrow sections A are adjusted within the sides, C, of the wider sections B until the slots *a* in the ends of the sections A fit snugly into the recesses on the first round in the wider section B, and the slots *a* in the ends of the said wider or adjacent section B fit over the projecting ends of the round in the narrow section A, as fully shown in Fig. 1. The spring or fastener is then adjusted in place over the ends of the said rounds to hold the several parts in their relative positions, as shown in the drawings.

By means of my improvements the several

sections are not only held together on a straight line with each other by means of the interlocked ends and the fastening devices, but the rest or recess formed on the inner ends of the rounds effectually prevent the sections from having a lateral motion when connected together, thereby enabling a great number of sections to be joined together to form staging, platforms, or a continuous ladder, without liability of the same breaking by lateral or sidewise pressure.

I am aware that sections of ladders have heretofore been made with slots in the ends of the side pieces in such manner that the slots of each section abut over the round of an adjacent section, and that said sections have been held together by suitable locking devices, and I do not therefore desire to claim, broadly, such construction; but,

Having thus described my invention, I claim as new and useful—

1. The herein-described means for securing sections of ladders together, consisting in interlocking the ends of the narrow sections A

within the inner sides, C, of the wider sections B by means of the slots *a* in the ends of the narrow sections A fitting in recesses in the rounds of the adjacent wider sections B, and the slots *a* in the ends of the said adjacent wider sections extending over the projecting ends of the rounds of the narrow sections, substantially as and for the purpose specified.

2. The narrow sections A, provided with projecting rounds, and the slots *a*, in combination with the wider sections B, having similar slots *a*, and rounds provided with recesses to receive the slotted ends of the said narrow sections A, and suitable spring fastening devices, substantially as and for the purpose specified.

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

PHILEMON TENNEY GATES.

Witnesses:

WM. S. SMITH,

WILLIAM E. BROCK.