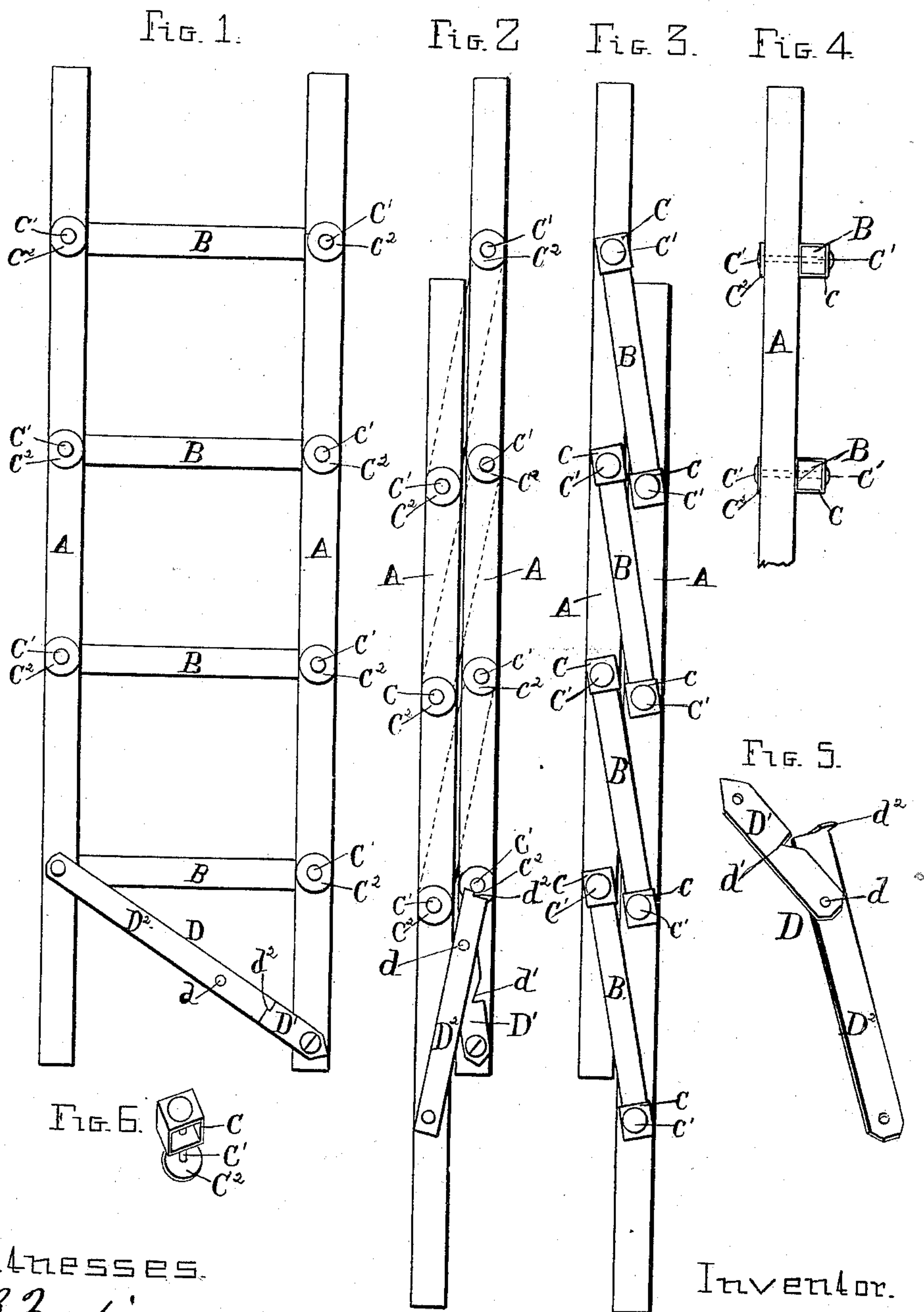


(No Model.)

S. DENNIS.  
LADDER.

No. 314,438.

Patented Mar. 24, 1885.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

SAMUEL DENNIS, OF MONROE, WISCONSIN.

## LADDER.

SPECIFICATION forming part of Letters Patent No. 314,438, dated March 24, 1885.

Application filed September 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL DENNIS, a citizen of the United States, residing at Monroe, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in 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.

This invention relates to ladders; and it has for its object to provide a ladder which may be easily folded and unfolded, so it can be conveniently transported and quickly adjusted for use, and will be strong and firmly braced when so adjusted.

The invention consists in certain details of construction and combination of parts, as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a rear elevation of the ladder ready for use. Fig. 2 is a similar view of the ladder folded. Fig. 3 is a front view of the ladder folded. Fig. 4 is a partial edge view of the ladder. Fig. 5 is a detail view of the sectional brace or lock. Fig. 6 is a detail view of the round-support.

The side bars, A A, have formed through them from front to rear a series of bolt-holes corresponding in number to the number of the rounds. The rounds B have their ends fitted snugly in boxes C, which are lapped against the front edges or faces of the bars A, and pivotally secured thereto by bolts C', passed through the boxings C. The ends of the rounds and the bars are secured by a rivet, C<sup>2</sup>, or in other suitable manner. This bolt forms a pivot, on which the rounds may turn and permit the ladder to be adjusted to bring it into the position shown in Fig. 1 for use, or that shown in Figs. 2 or 3 for transportation or storage. The boxings, it will be seen, prevent the ends of the rounds from splitting, and also provide efficient bearings for the bolts, and prevent the same from splitting the rounds by any rotary twist or strain.

The brace or lock D is pivoted at one end to each of the side bars, A A, and at different distances from the ends thereof, so the brace will, when the ladder is open for use, be inclined about as a strut-brace, as shown. This brace is made of sections D' D<sup>2</sup>, pivoted together at d. In the upper side of the section D', I form a notch, d'. The section D<sup>2</sup> is extended beyond the pivot d alongside section D', and is provided at its extremity on its upper edge with a lateral lug extended toward the section D', and adapted to engage in the notch d' when the brace is adjusted into its locked position and secure it at same. It will be seen that the notch d' and pivot d are arranged out of line, the notch being nearer the upper edge of the section D', so that when the brace is adjusted to the position shown in Fig. 1 it will hold firmly against any longitudinal strain, and can only be displaced by pressure against the side opposite that in which the notch d' is formed.

Where desired, the bars A may be provided with hooks suitable to catch on a window-sill when the ladder is used as a fire-escape ladder, for which use its convenience for transportation especially commends it. When not in use or being transported, the latch is released and the bars A A folded together, as shown in Figs. 2 and 3, in which arrangement the ladder may be conveniently carried. When desired for use, the side bars are drawn apart and the brace, &c., adjusted to the position shown in Fig. 1, when the ladder will be firmly held, and may be mounted and descended as though the rounds were rigidly fixed to the side bars.

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

1. In a folding ladder, the combination of the side bars, A A, the rounds B, the boxes C, fitted on the ends of the rounds, and the bolts C', passed through the ends of the rounds, the boxes, and the bars A, substantially as set forth.

2. The combination, with the bars A and the rounds pivoted at their ends to said bars, of the brace D, composed of sections D' D<sup>2</sup>, pivoted together at d and at their outer ends one



to each bar A, the section D' being provided in its upper edge midway its ends with a notch,  $d'$ , and the section D<sup>2</sup> being extended beyond its pivot  $d$  alongside the section D', and provided at the upper edge of the extremity of such extension with a lateral lug,  $d^2$ , fitted and arranged to engage in the notch  $d'$ , substantially as set forth.

3. The improved folding ladder herein described, consisting of the bars A A, the rounds B, the boxing C, placed and fitted snugly on the ends of the rounds B, the bolts C', inserted through the boxes C, the rounds B, and the

bars A, and the brace D, composed of sections D' D<sup>2</sup>, pivoted together at  $d$  and at their outer ends to bars A, the section D' having a notch,  $d'$ , and the section D<sup>2</sup> an extension beyond its pivot, and a lug,  $d^2$ , at the extremity of such extension, substantially as set forth.

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

SAMUEL DENNIS.

Witnesses:

CHAS. BALL,

C. E. TAUBERG.