

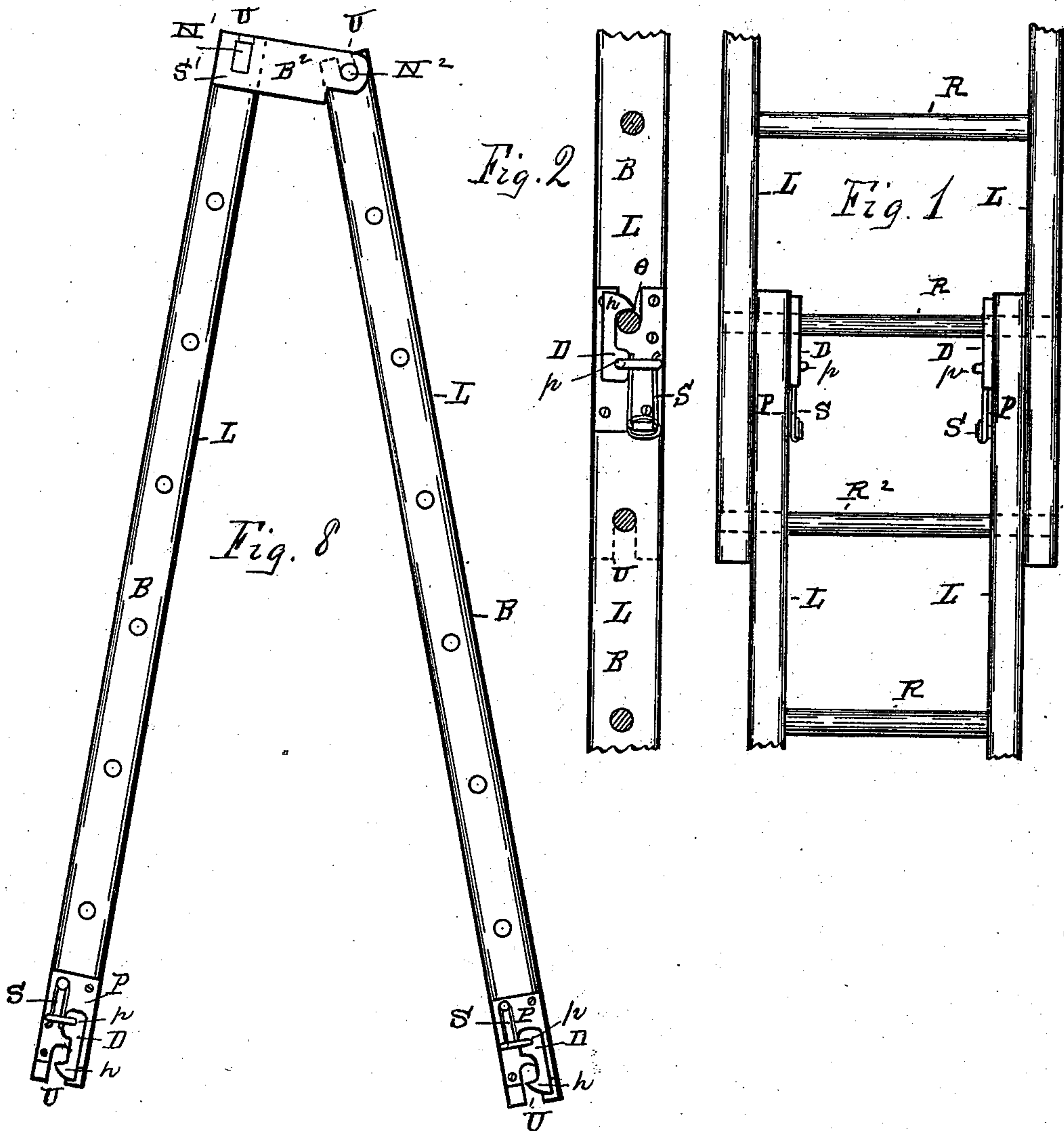
(No Model.)

2 Sheets—Sheet 1.

J. S. TILLEY.  
LADDER.

No. 377,966.

Patented Feb. 14, 1888.



WITNESSES

Geo. A. Garby.

Charles S. Brintnall.

INVENTOR

John S. Tilley.

By W. E. Hagan, atty

(No Model.)

2 Sheets—Sheet 2.

J. S. TILLEY.

LADDER.

No. 377,966.

Patented Feb. 14, 1888.

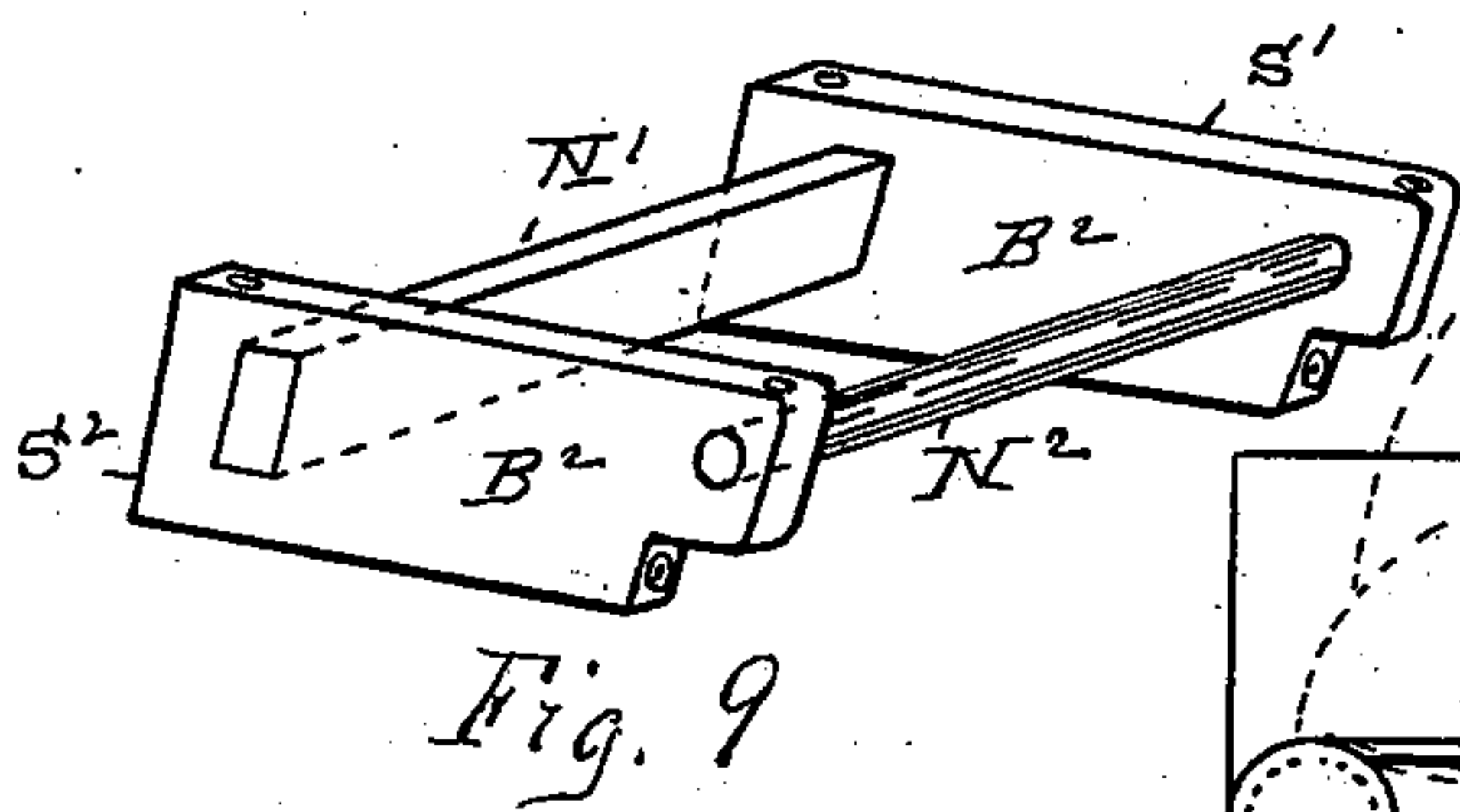


Fig. 9

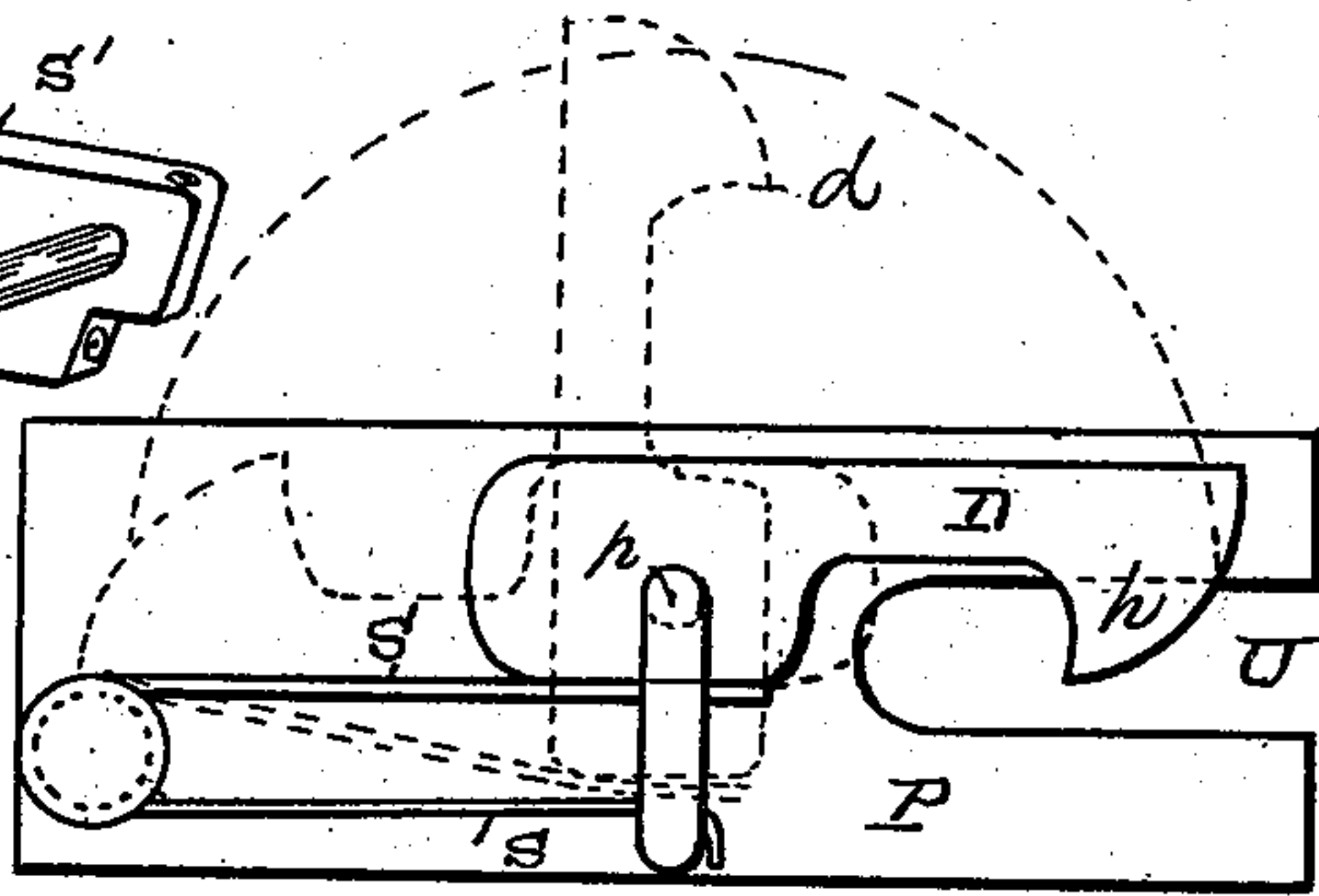


Fig. 3

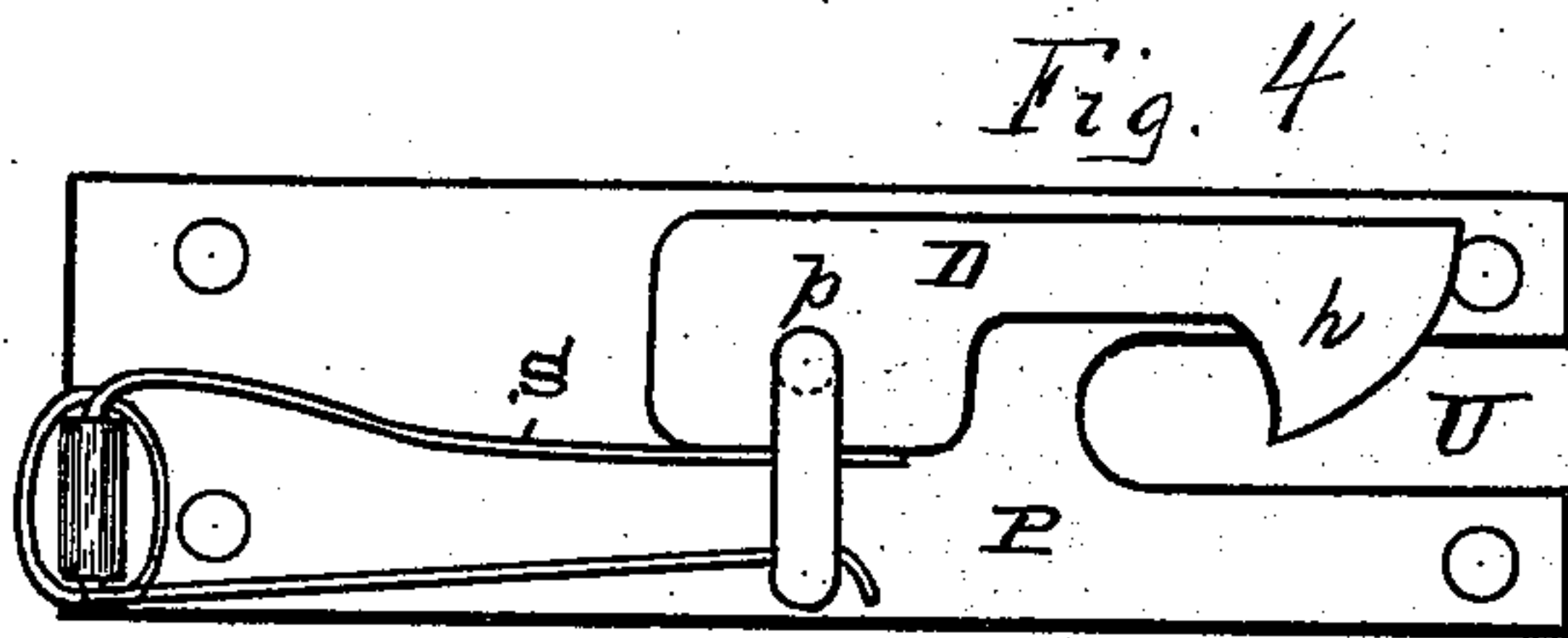


Fig. 4

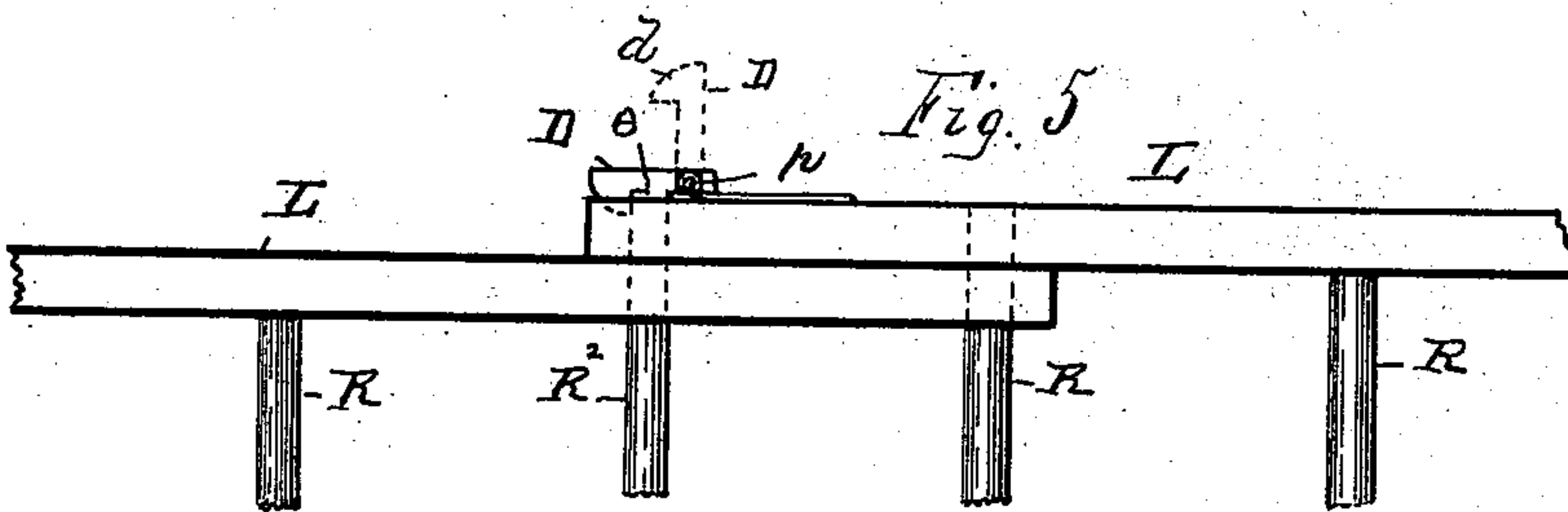


Fig. 5

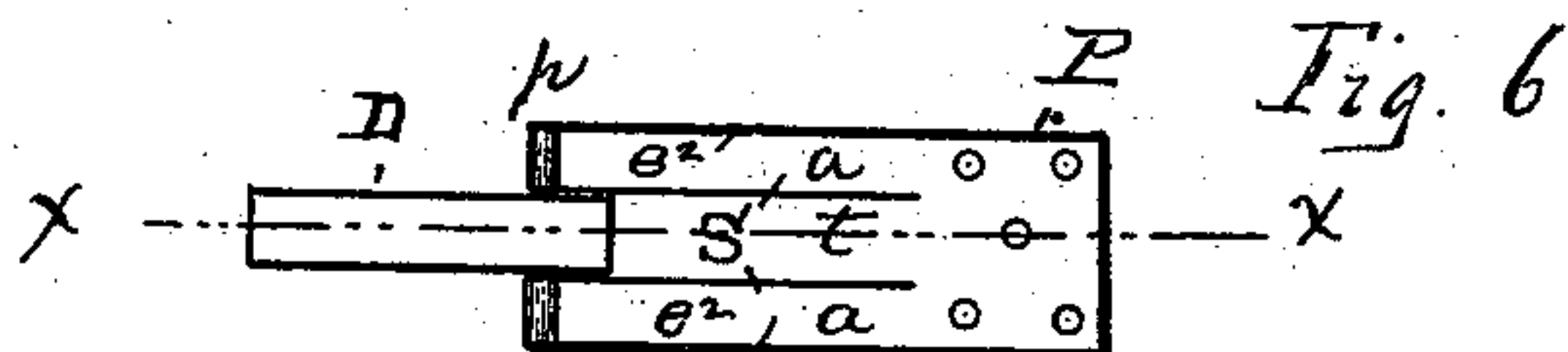


Fig. 6

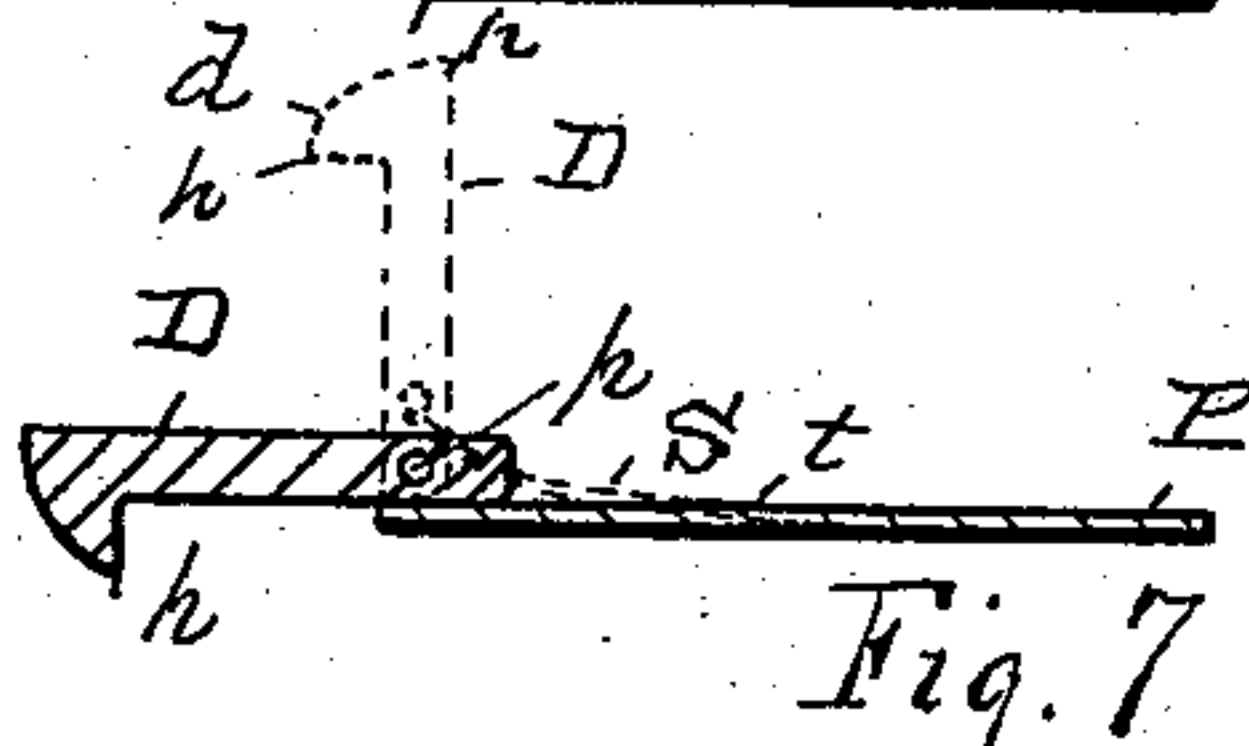


Fig. 7

WITNESSES

Geo. A. Darby

Charles S. Buntinall.

INVENTOR

John S. Tilley.

by W. C. Hagan, his atty.



# UNITED STATES PATENT OFFICE.

JOHN S. TILLEY, OF WEST TROY, NEW YORK.

## LADDER.

SPECIFICATION forming part of Letters Patent No. 377,966, dated February 14, 1888.

Application filed July 13, 1887. Serial No. 244,125. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. TILLEY, of the village of West Troy, county of Albany, and State of New York, have invented a new and useful Improvement in Ladders, of which the following is a specification.

My invention relates to improvements in ladders, and more particularly to that class of them which are made in connecting lengths or sections, the sides of which are slotted at the ends and made to lap past each other, so as to receive within the slotted ends of each of the sides the adjacent end round of the connecting length or section.

My invention has for its object a better connection for securing the ladder-lengths after being interlocked to produce a ladder from several sections and to better adapt ladder-lengths for connection when used for scaffolding.

As heretofore used ladder-lengths when connected have been secured on their interlocking connection by means of a pin passed through the slots in the ends of the laddersides beyond where inclosing the round and by means of spring-clasps that grasped the round ends to hold the latter within the slots in the ladder sides, and it is upon this latter class of fastenings and to produce a means to better connect ladder-lengths for scaffolding that my invention relates.

Where a spring-clasp is used to grasp the round to retain it within the slot at each side of the ladder-lengths, to disconnect the ladder both of the clasps must be opened at the same time. As these clasps, to be of any service at all in securing the parts, must grasp the round with a firm hold, and as they are some distance apart, one person must operate at arms-length to unclasp them, which is impracticable. To remedy this difficulty, I employ a pivoted latch to grasp the round beyond the slot, the said latch being held in its grasp of the round by means of a spring, and each of which latches may be separately thrown back, and the ladder-lengths thus disconnected by one person with ease.

Accompanying this specification to form a part of it there are two plates of drawings, containing nine figures, illustrating my inven-

tion, with the same designation of parts by letter-reference used in all of them.

Of these illustrations, Figure 1 shows two ladder-lengths connected by my pivoted latch-fastening. Fig. 2 shows a side elevation of two ladder-lengths in which the connection of the two parts is secured by pivoted latch-fastenings. Fig. 3 shows a side elevation of my ladder-length-connecting mechanism with the latch thrown up on its pivoted connection, shown in larger proportion than in the other figures. Fig. 4 shows the same parts that are illustrated at Fig. 3, but with the latch down and in a position to grasp the round of the adjoining section. Fig. 5 shows a side elevation of a modification of my pivoted latch-connecting mechanism, illustrated as securing one of each of the adjacent sides of two connecting ladder-lengths. Fig. 6 shows a top view of the same modified pivoted latch and spring that is shown at Fig. 5, but illustrated as detached. Fig. 7 shows a longitudinal section of the modification of the pivoted latch shown at Figs. 5 and 6, taken on the line *xx* of Fig. 6. Fig. 8 shows two ladder-lengths connected to form a scaffolding, and Fig. 9 shows as detached a perspective of the brace which connects the two ladder-lengths at their tops.

The several parts of the mechanism thus illustrated are designated by letter-reference, and the function of the parts is described as follows:

The letters LL designate two ladder-lengths, each of which in the ends of the sides B has the usual slot, U.

The letters R indicate the rounds, and R<sup>2</sup> the rounds which at the ends of the ladder-lengths project through and beyond the sides, so that when the smaller end of one of the lengths is passed inside of the sides of a wider length the slots in the sides of the entering length will embrace the lower round of the upper length, and the slot in the ends of the subtending sides of the upper length will grasp the ends of the upper round in the lower length where said rounds project beyond the sides, said method of thus connecting ladder-lengths being an old and well-known means. To secure the lengths thus connected, I employ a latch, D, that is pivoted at *p*. This latch is



provided with a spring, S, against the force of which spring this latch is thrown back, as indicated by the dotted line *d* of Figs. 3 and 7, and by which spring this latch is at each side of the ladder automatically caused to closely embrace, by means of its hook-form end *h*, the ends *e* of the projecting rounds, and also rounds R of the other ladder-lengths.

The latch D is arranged upon one end of each of the ladder-lengths upon each side, and each of the latches may be separately thrown back, as shown by the dotted line *d* of Figs. 3 and 7, when it is desired to separate the lengths.

In the modification shown at Figs. 5, 6, and 7 the latch is arranged to pass down on and over the end of the projecting round instead of being passed around the latter, as shown at Figs. 1, 2, 3, and 4; but in either instance a pivoted latch is used that has the same office in connection with a spring as distinguished from a spring-hasps which had before been used and in which latter device the spring and hasp were integrally made.

Where a spring-hasps is used, the hasps at each side of the ladder must be sprung back at the same time to disconnect two ladder-lengths, which, from their position relatively to the position where the operator must stand, is impracticable. By using a pivoted latch either of them may be thrown back separately and the lengths easily disconnected.

The letter B<sup>2</sup> designates a brace, that is shown as detached at Fig. 9, and at Fig. 8 as applied to connect the ends of two ladder-lengths to form a scaffolding. This brace is constructed with two sides, S' S<sup>2</sup>, connected by rods N' N<sup>2</sup>, one of the rods, N', being made square and the one designated at N<sup>2</sup> being round. When it is desired to connect two ladder-lengths at the ends to form a scaffolding, the brace is passed down outside of the ends of two ladder-lengths, with the square rod N' arranged within the end slot, U, of one of the lengths and the round rod N<sup>2</sup> in the slot

U of the other length, the square rod being secured with its vertical sides within the slot of one length and coincident with the sides thereof. It thus keeps the ladder-length from turning on the rod.

The latch D is preferably attached to a plate, P, with the latter secured to the sides of the ladder-lengths at one of the ends, and where the modification shown at Figs. 6, 7, and 8 is employed the plate P has cut in it a tongue, *t*, with the latch-pivot *p*, where passing through the sides of the latch proper, arranged to turn in the tubularly-bent ends *e*<sup>2</sup> of the plate, where outside of the tongue *t*, with the sides *a a* of the plate forming the spring S.

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

1. The combination, with two ladder-lengths that are each constructed with the slots U, arranged in the ends of their sides and adapted to lap past each other so that the said slots in one end of the sides of one of the lengths will grasp the end round of the other length, and the slots in the sides of the other length will grasp the subtending ends of the round of the other length, substantially as described, of the pivoted latch D, made with the spring S, and adapted to grasp the end round of one of the ladder-lengths, substantially as and for the purposes set forth.

2. The combination, with two ladder-lengths that are each made with slots U in the ends of their sides, of the brace B<sup>2</sup>, having the sides S' S<sup>2</sup>, and the connecting-rods N' N<sup>2</sup>, adapted to connect said ladder-lengths at their ends, substantially in the manner as and for the purposes set forth.

Signed at Troy, New York, this 18th day of May, 1887, and in the presence of the two witnesses whose names are hereto written.

JNO. S. TILLEY.

Witnesses:

GEO. A. DARBY,  
W. E. HAGAN.