

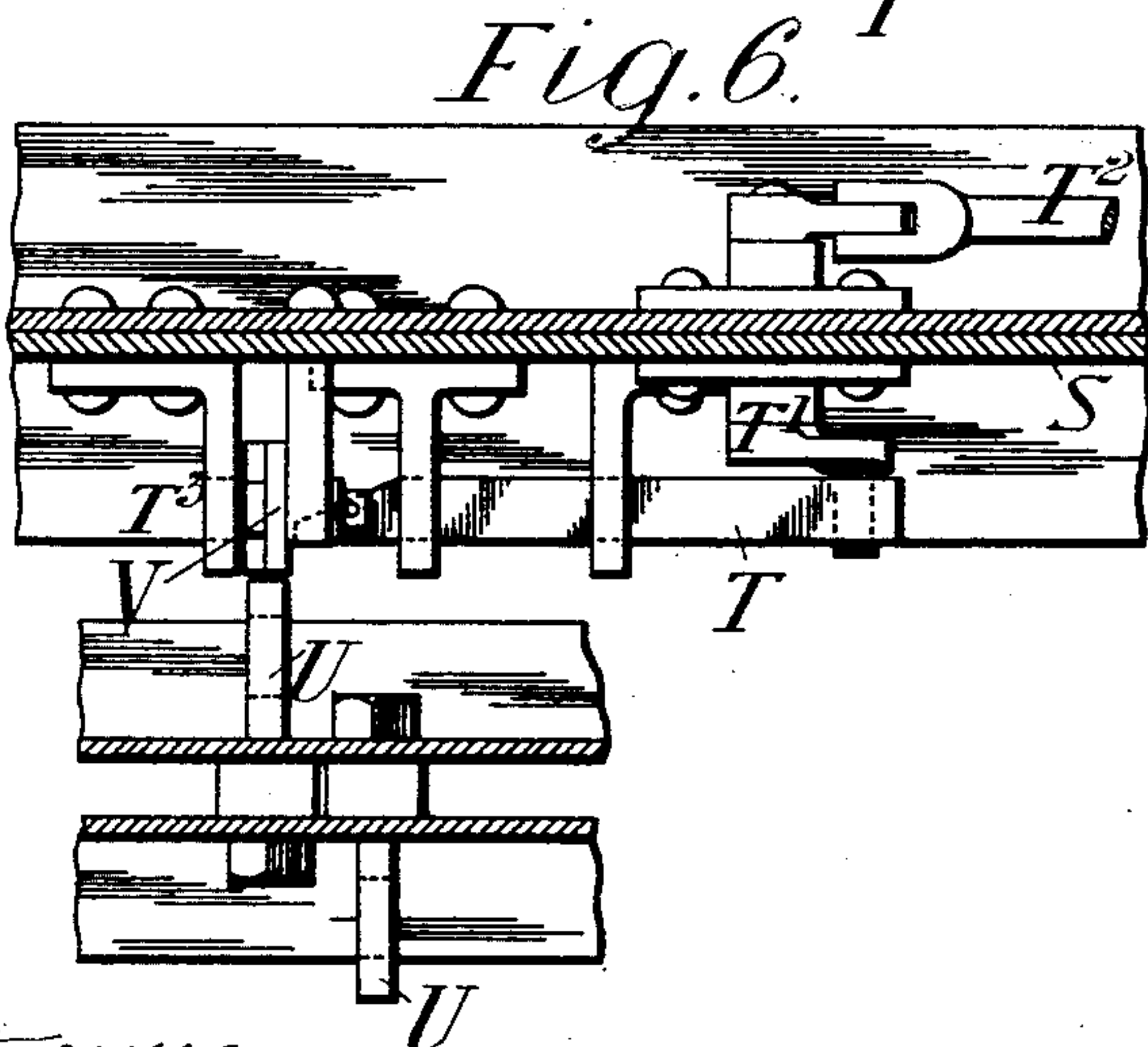
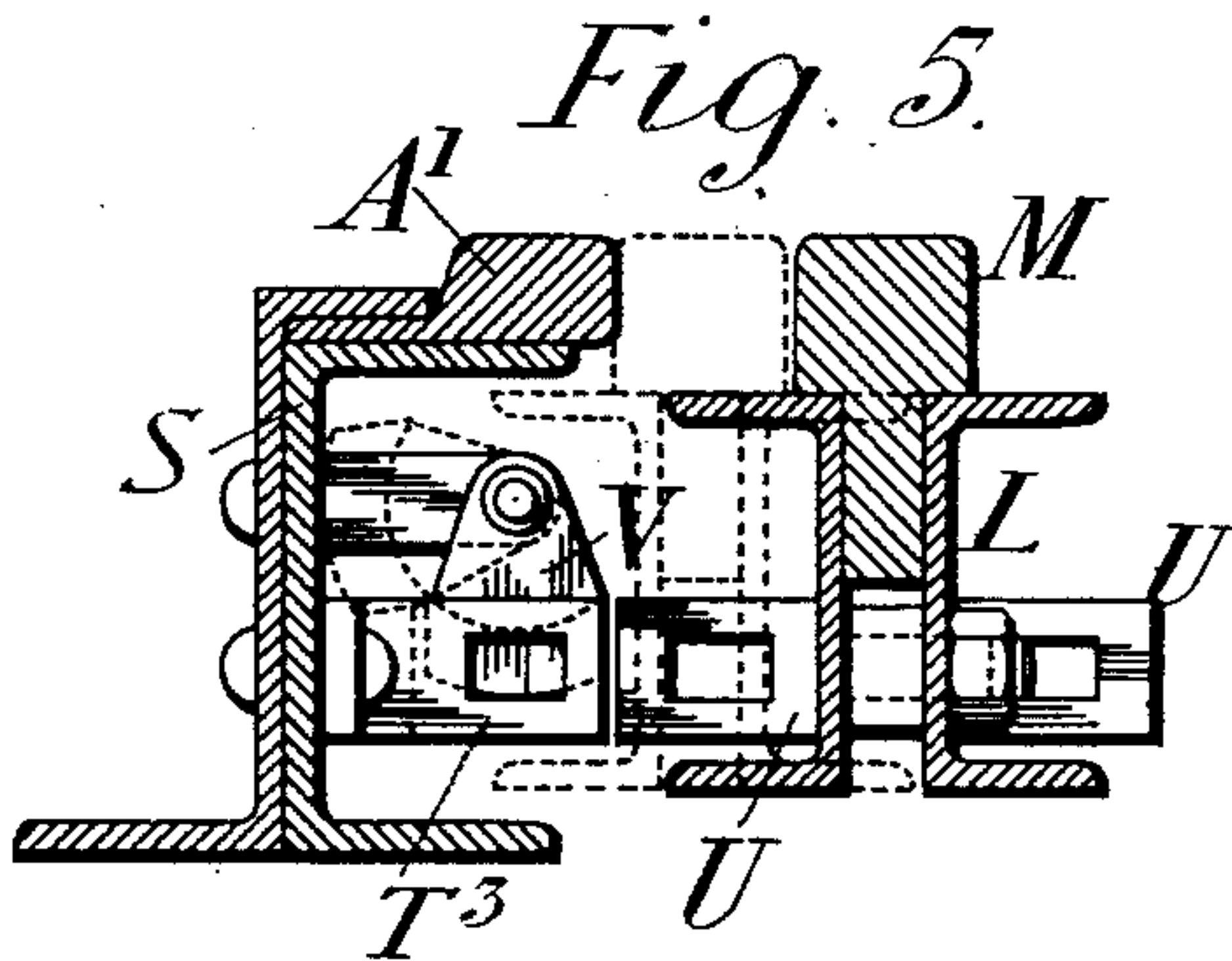
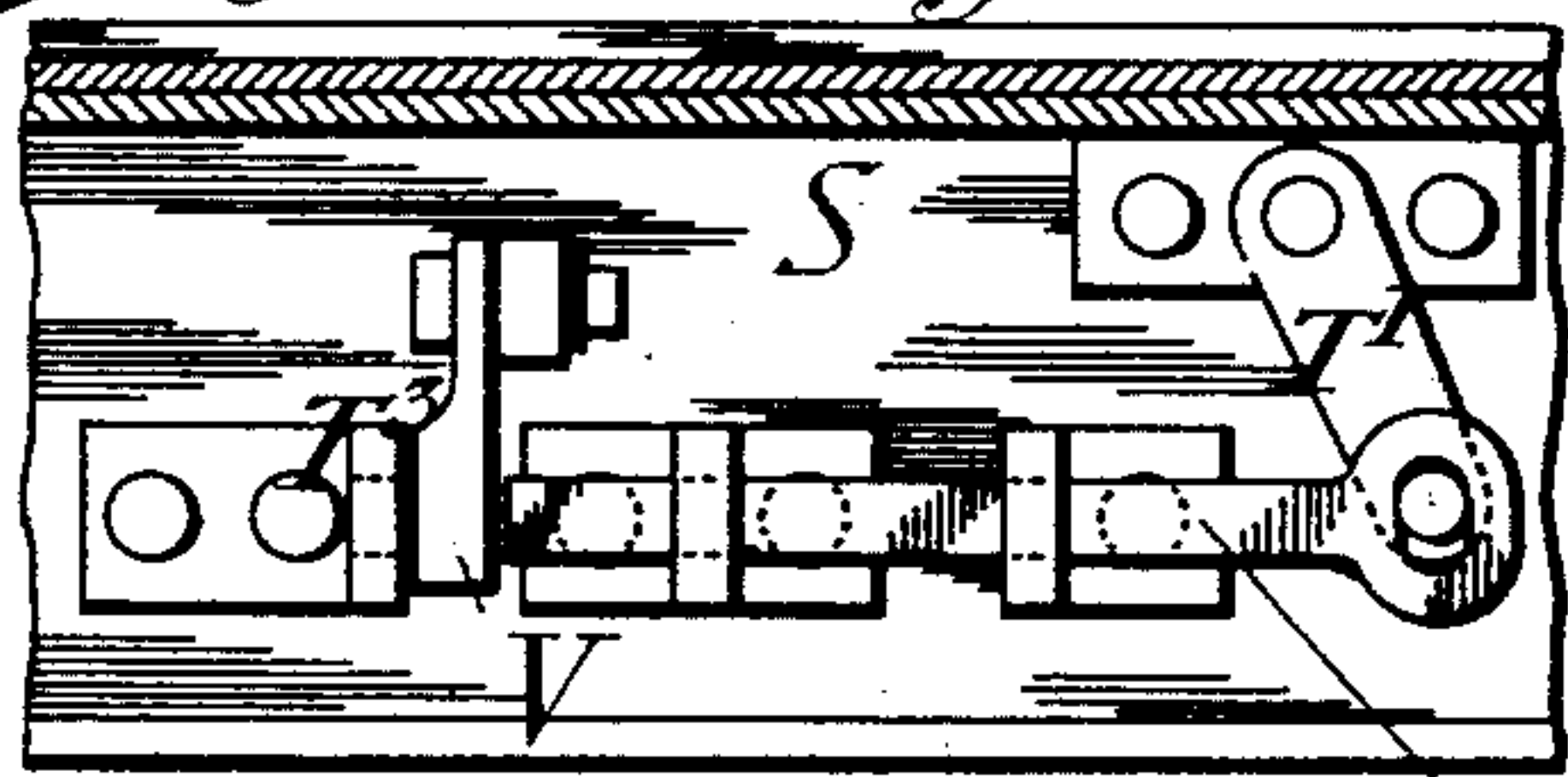
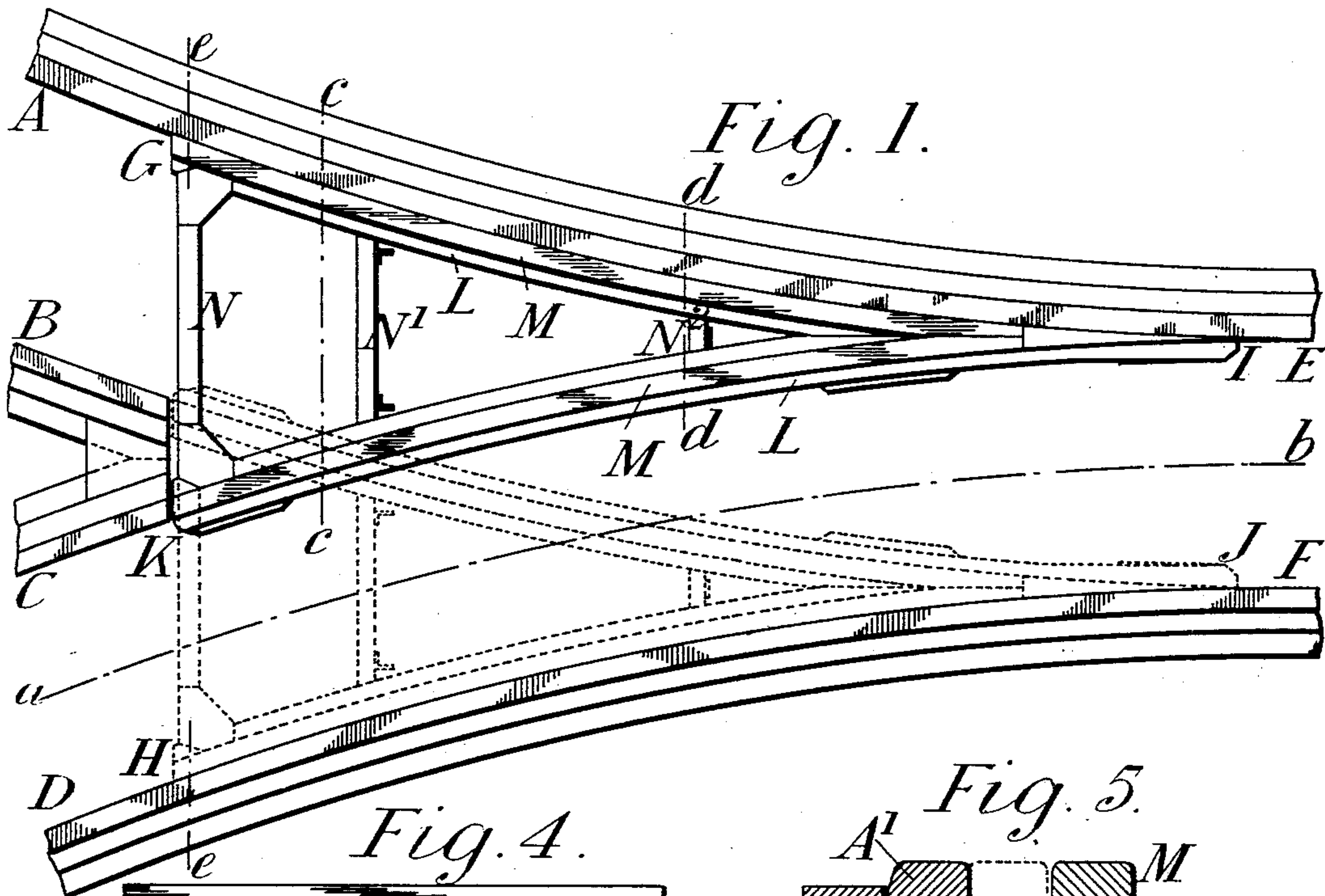
(No Model.)

2 Sheets—Sheet 1.

E. LANGEN.  
SWITCH FOR OVERHEAD RAILWAYS.

No. 541,365.

Patented June 18, 1895.



Witnesses:  
Geo. M. Rea.  
Thos. A. Green

Inventor:  
Eugen Langen,  
By James L. Norris  
att'y

(No Model.)

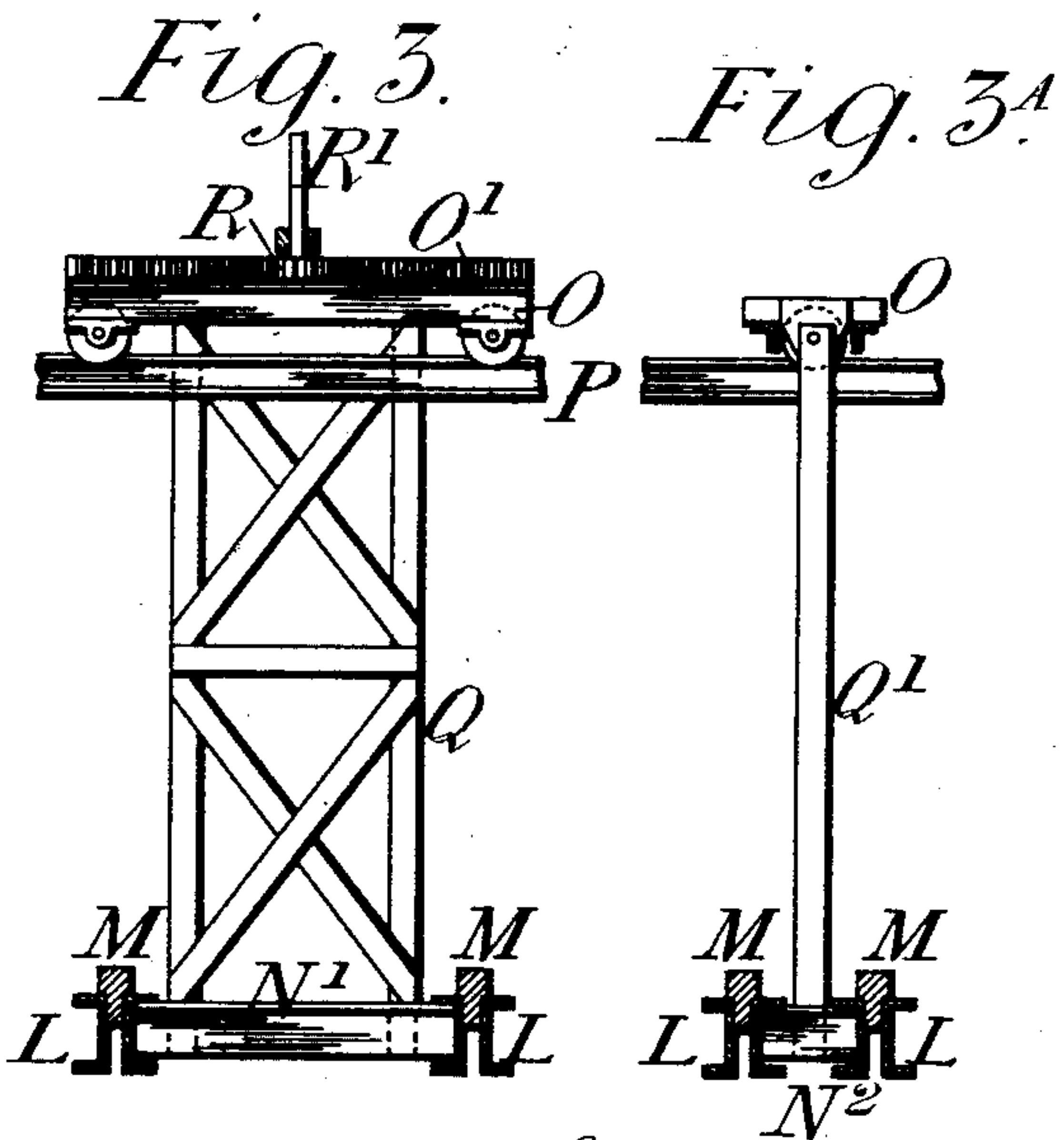
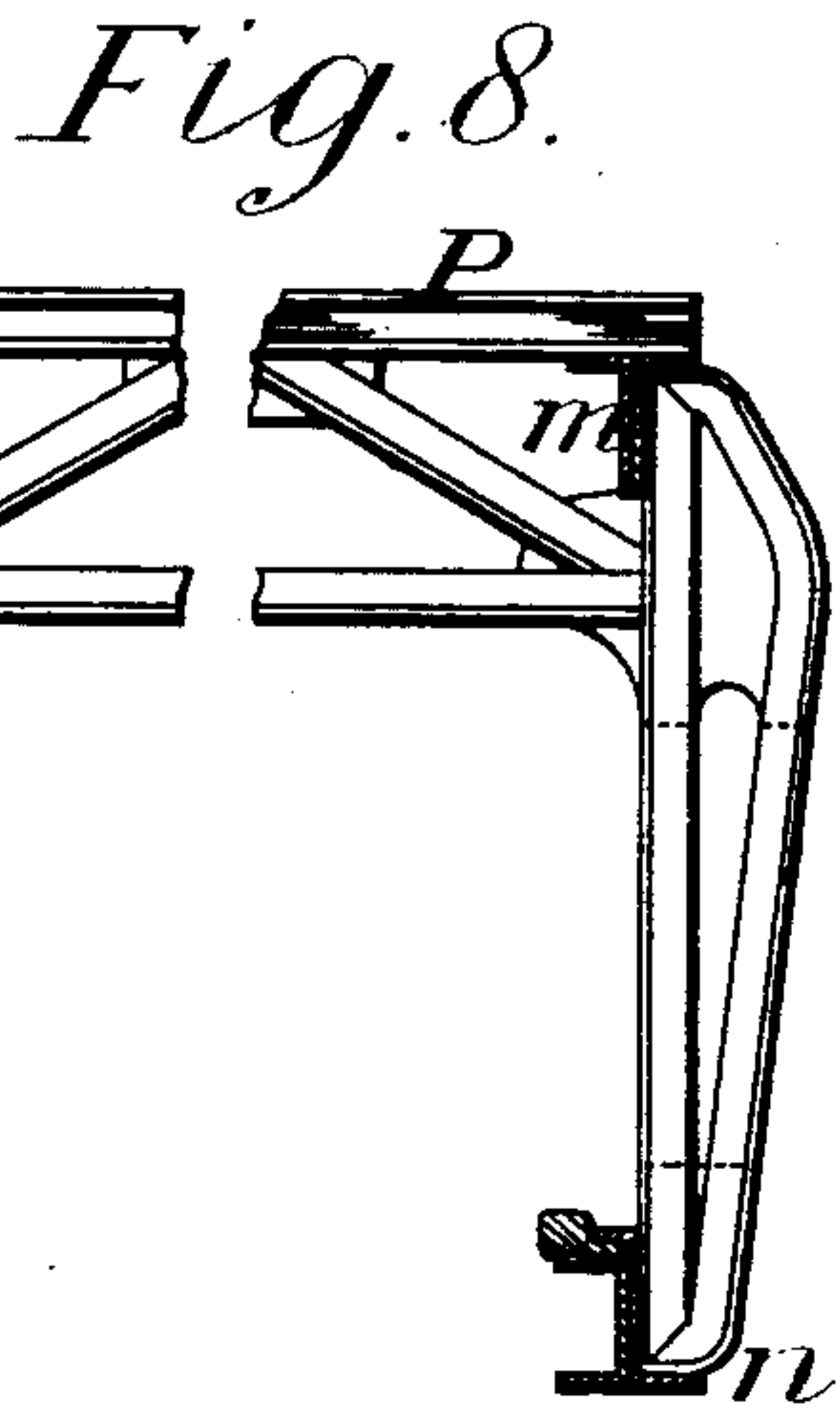
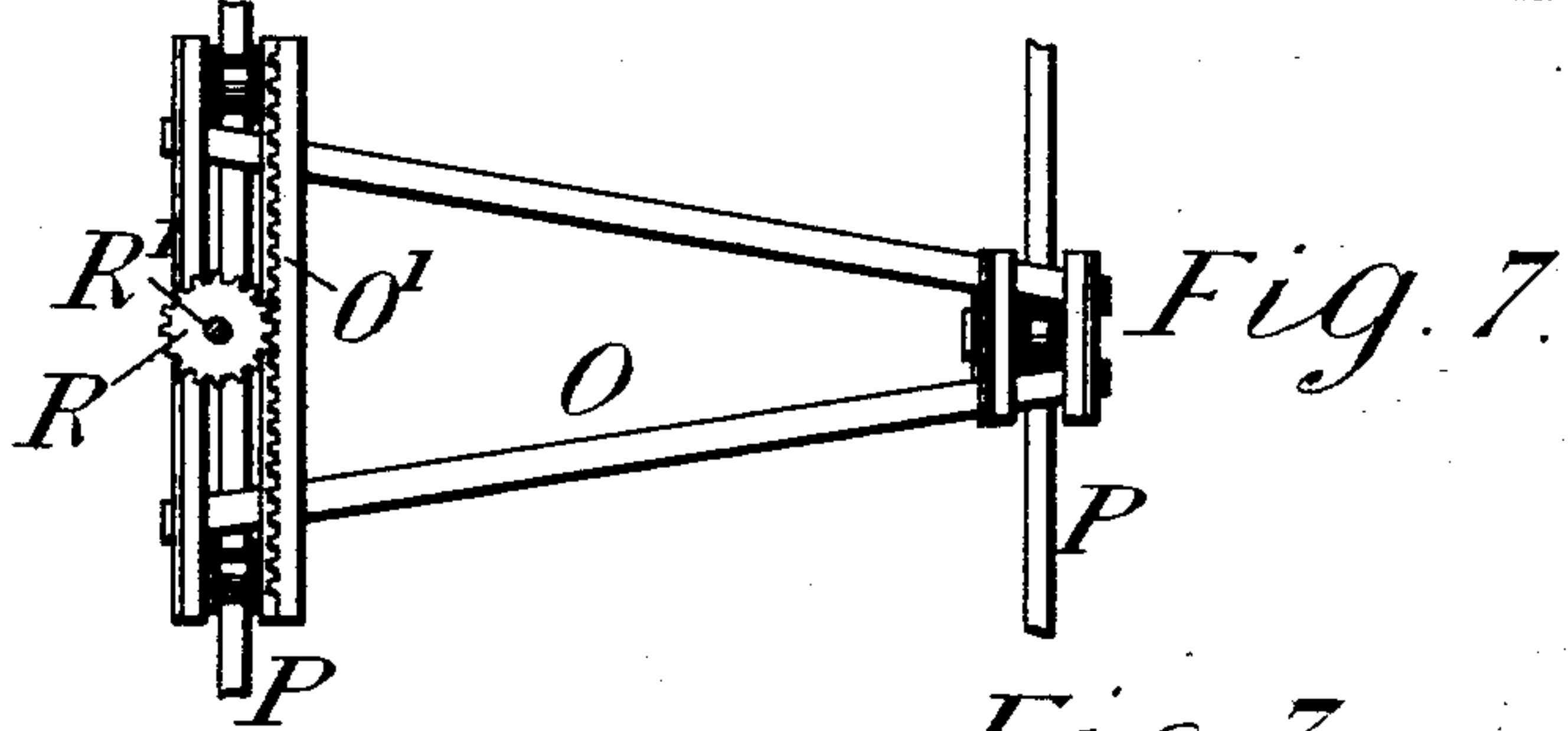
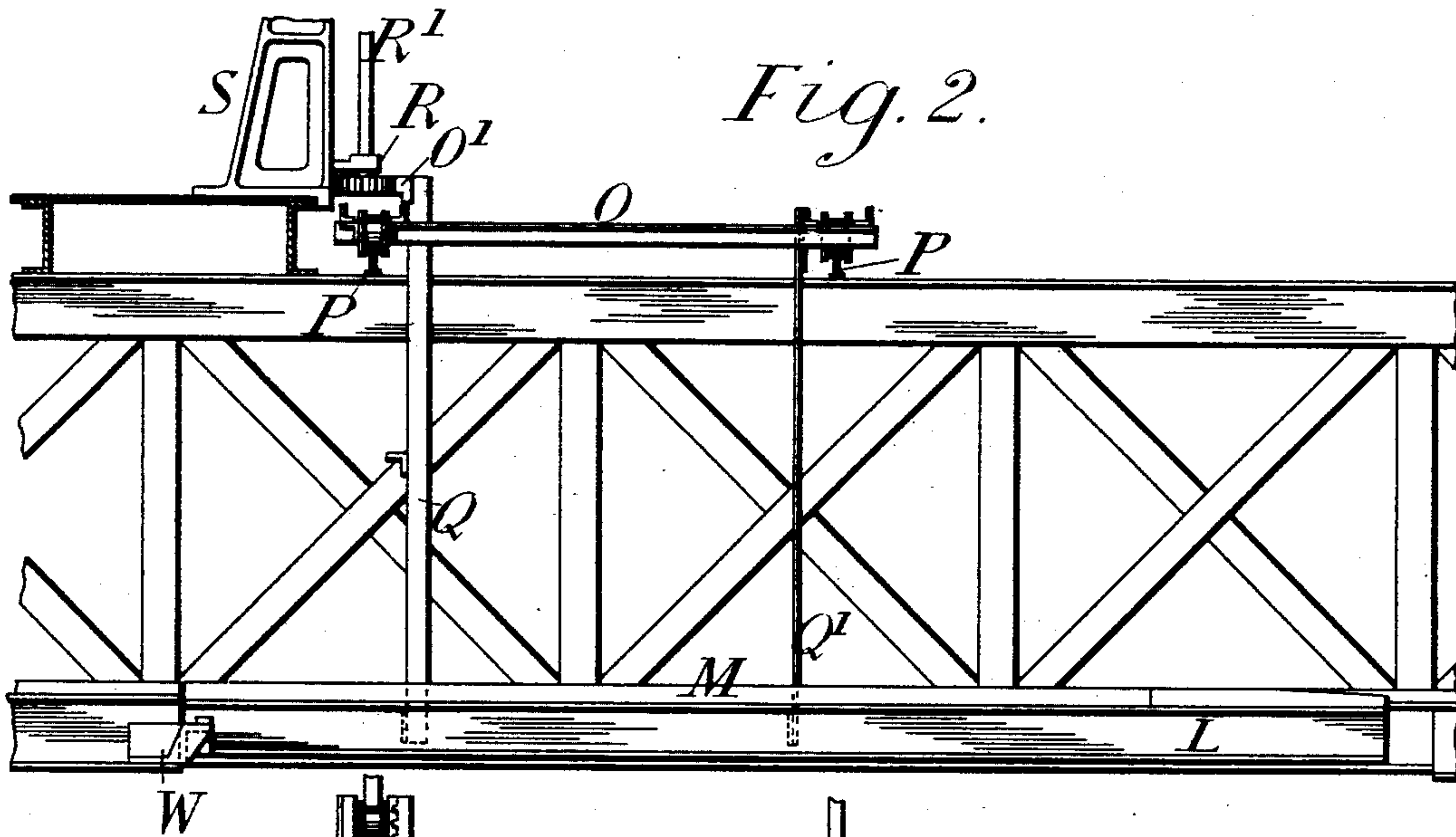
2 Sheets—Sheet-2.

E. LANGEN.

## SWITCH FOR OVERHEAD RAILWAYS.

No. 541,365.

Patented June 18, 1895.



Witnesses;  
Jno. W. Rea.  
Thos. A. Green

Inventor =  
Eugen Langen,  
By James L. Norris  
att'y



# UNITED STATES PATENT OFFICE.

EUGEN LANGEN, OF COLOGNE, GERMANY.

## SWITCH FOR OVERHEAD RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 541,365, dated June 18, 1895.

Application filed April 6, 1895. Serial No. 544,779. (No model.)

*To all whom it may concern:*

Be it known that I, EUGEN LANGEN, a citizen of Prussia, residing at 14 Werthstrasse, Cologne, in the Empire of Germany, have invented certain new and useful Improvements in Points or Switches for Overhead Railways with Suspended Vehicles, of which the following is a specification.

My invention relates to an improved construction of points or switches for overhead railways with suspended vehicles wherein there is required only a single movable point or switch in connection with two meeting lines of rails as I will explain with reference to the accompanying drawings, in which—

Figure 1 shows a sectional plan of part of the railway at the junction of a branch line with the main line or where two lines run into one. Fig. 2 shows a longitudinal sectional elevation on line *a b*, Fig. 1. Fig. 3 shows a part cross-section on line *c c*, Fig. 1. Fig. 3<sup>a</sup> shows a part cross-section on line *d d*, Fig. 1. Figs. 4, 5, and 6 show, respectively, in side view, cross-section, and sectional plan enlarged details of the locking-gear for the switch. Fig. 7 shows a plan of the carriage supporting the switch. Fig. 8 shows a part cross-section of the railway at the point *e e*, Fig. 1, just in front of where the two lines intersect.

The inner rails B and C of the two separate meeting lines A B and C D stop short at the line *e e* and the two outer rails A and D and their supports are made at that point to join on to a correspondingly widened section of the single line E F, the box girder carrying the lines being suitably strengthened at the widened part as shown in the section at Fig. 8. By the widening out of these two side girders from E F to the line *e e*, there is formed a space G H I J, within which is situated the laterally moving point or switch G K I. This switch is constructed of two curved bearers L L carrying rails M M as shown at Figs. 3 and 5, which meet in a point at I and are connected together at G K and intermediate points by transverse pieces N N' N<sup>2</sup>.

The sides G I and K I are curved to the same radius as the rails at A E and D F, and are so constructed that when the point or switch is moved over, say to the left hand as at Fig. 1, its one side lies close against the rail

A E while the other side forms a continuation of the rail C, parallel with the rail D F, until it meets the rail A E. Thus in this position a carriage can run from line C D on to the line E F. If on the other hand the switch be moved over to the other side as indicated by the dotted lines Fig. 1, the side G I will form a continuation of the rail B of the line A B, meeting the rail F of the line E F. For carrying the switch during such motion, and for imparting the motion thereto, there is provided at the top of the box-girder *k l m n*, a carriage O, constructed as shown at Figs. 2 and 7, running on transverse rails P P fixed on the top of the box girder from which carriage the switch is suspended by connections Q Q'.

The carriage has a toothed rack at O' with which gears a pinion R Fig. 2 on a shaft R' carried by a standard S and rotated by suitable gearing for shifting the carriage O and with it the switch either to the right or to the left. When in the one or the other position, the switch is locked by the device shown at Figs. 4, 5 and 6.

On the bottom member S of the girder is provided a sliding bolt T, worked by a lever T' and rod T<sup>2</sup> from any convenient point at a distance, and on the side of the switch is fixed a part or flange having an eye U through which, when the switch is brought completely home against the rail A', as shown by the dotted lines Fig. 5, the bolt T can be shot into another eye T<sup>3</sup> fixed to S. In order to prevent the bolt from being shot home without passing through the eye U, should the switch not have been moved completely over as for example in the position shown in full lines Fig. 5 a pivoted guard V is provided in front of the eye T<sup>3</sup>, so that the bolt is prevented from being shot.

When the switch is moved completely over as in the position shown in dotted lines Fig. 5 then the part having the eye U pushes the guard to one side, into the position shown in dotted lines Fig. 5, so that the bolt T can then be shot.

The end of the bolt is made wedge-shape as shown, so that if the eye U should not be exactly in line with the eye T<sup>3</sup>, the wedging action of the bolt in passing through will cause the eye U, and consequently the switch to be brought completely home.



The rear ends of the switch at G and K are supported by brackets W on the bottom members of the girder, Fig. 2 when in either extreme position.

5 Having now particularly described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

1. A switch or point for two meeting lines  
10 of an overhead railway for suspended vehicles, consisting of a laterally movable triangular structure, two sides of which are curved to correspond with the curvature of the meeting lines of railway, so that when the switch is  
15 moved over into either position its one side lies against the outer rail of the one line of rails, while its other side forms a continuation of the inner rail of the other line of rails, meeting at its end the outer rail of the other line;  
20 substantially as described.

2. In an overhead railway for suspended vehicles, the combination with two meeting lines of rails A B and C D, of a triangular switch G I K adapted to be moved laterally so as to  
25 make a through passage either for the line A B or for the line C D, a carriage O running on

transverse rails on the top of the box girder carrying the lines of rails, from which carriage the switch G I K is suspended, and means for traversing the carriage and switch from 30 the one line to the other, substantially as described.

3. In combination with a laterally moving switch G I K adapted to form the continuation of the inner rails of two converging lines of  
35 an overhead railway, a locking bolt T carried by the girder support of the rails adapted to engage with an eye U on the switch, and a pivoted guard V which prevents the bolt T from being shot when the eye U of the switch is not  
40 in position to be engaged thereby, but which is pushed to one side by the said eye when the switch comes into position, substantially as described.

In testimony whereof I have signed my  
45 name to this specification, in the presence of two subscribing witnesses, this 16th day of March, A. D. 1895.

EUGEN LANGEN.

Witnesses:

FRITZ SCHRÖDER,  
MARIA NAGEL.