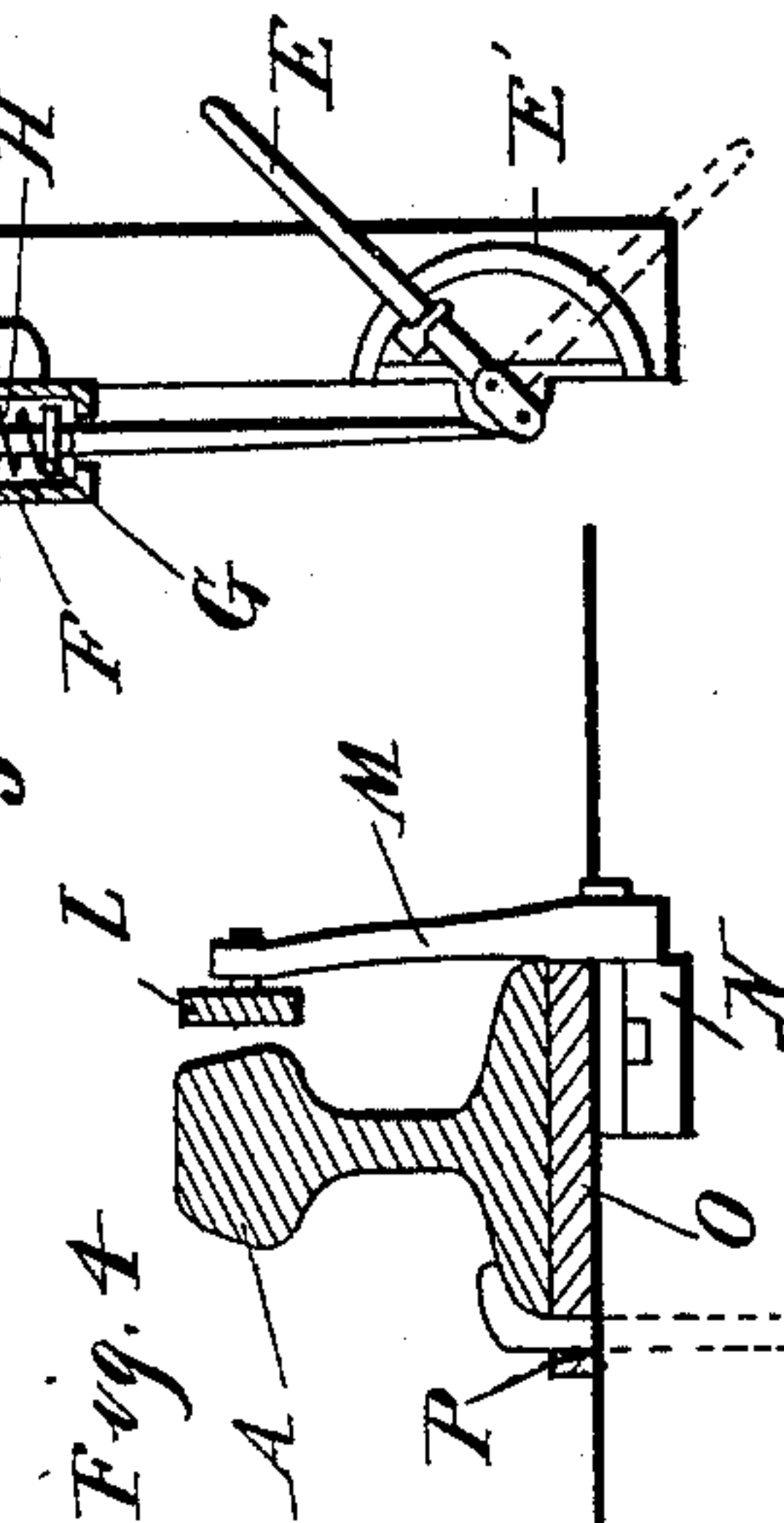
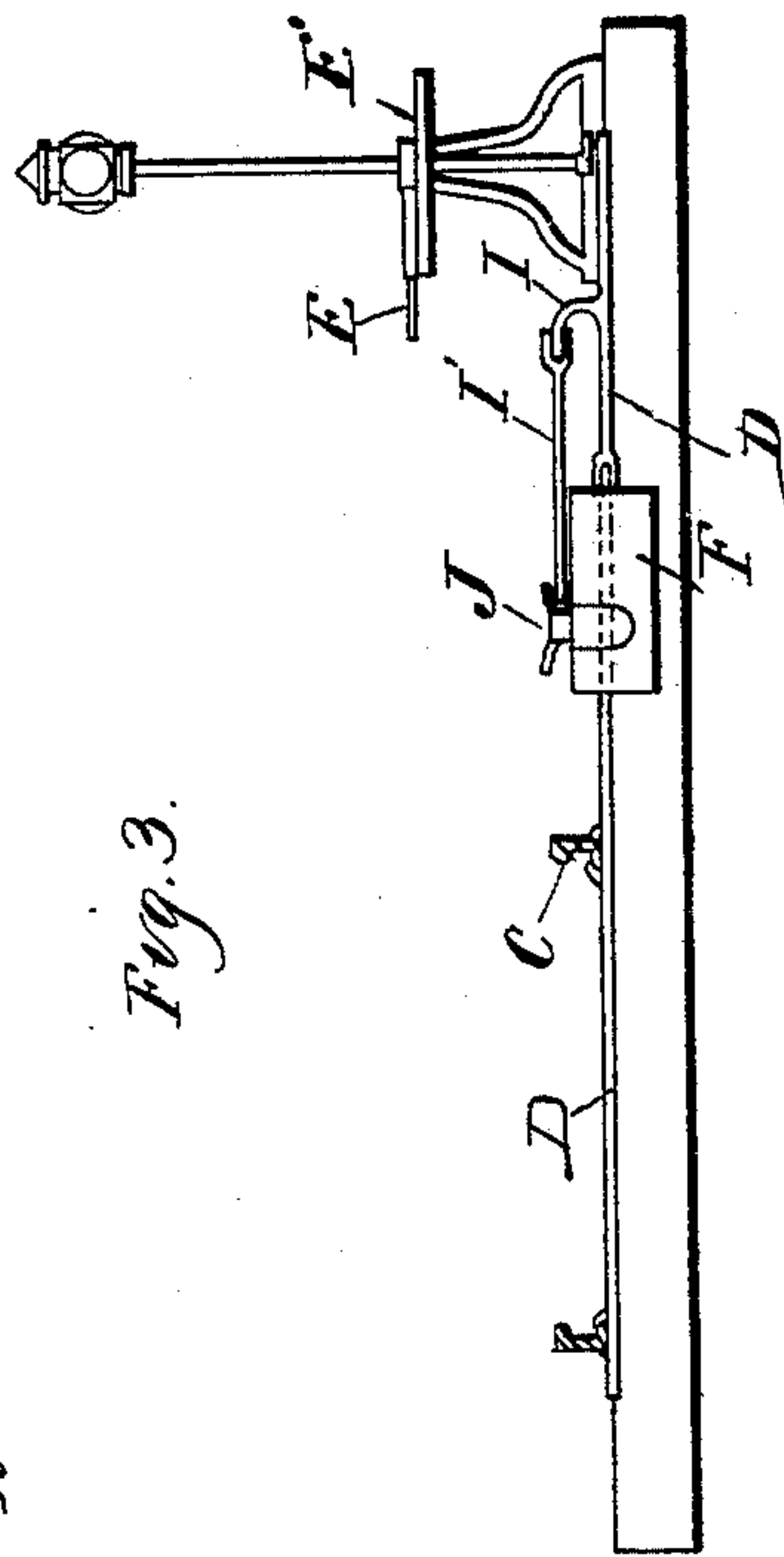
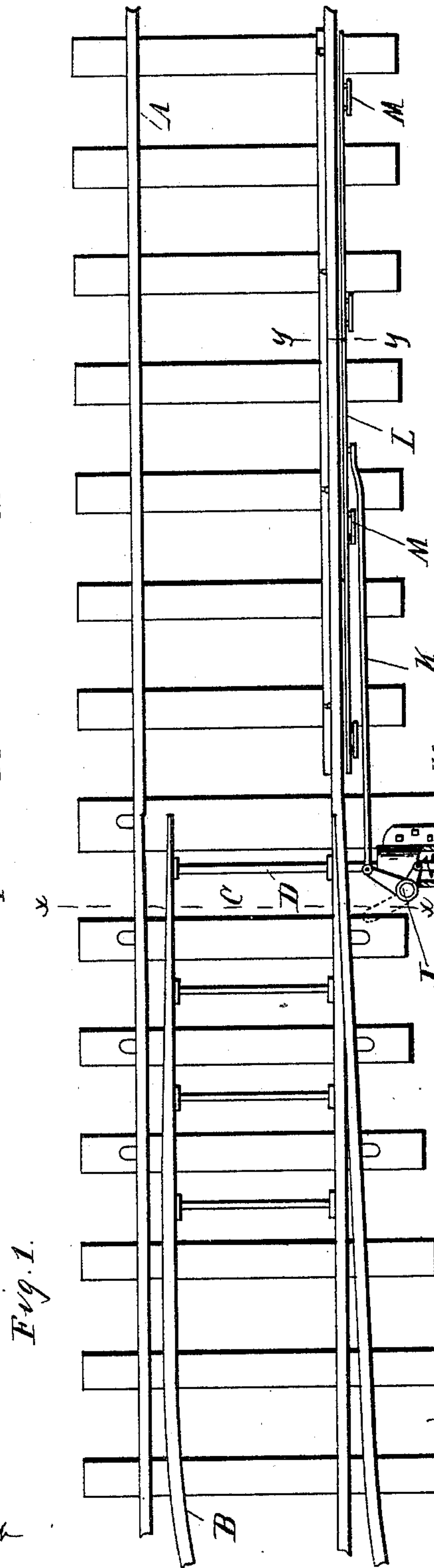
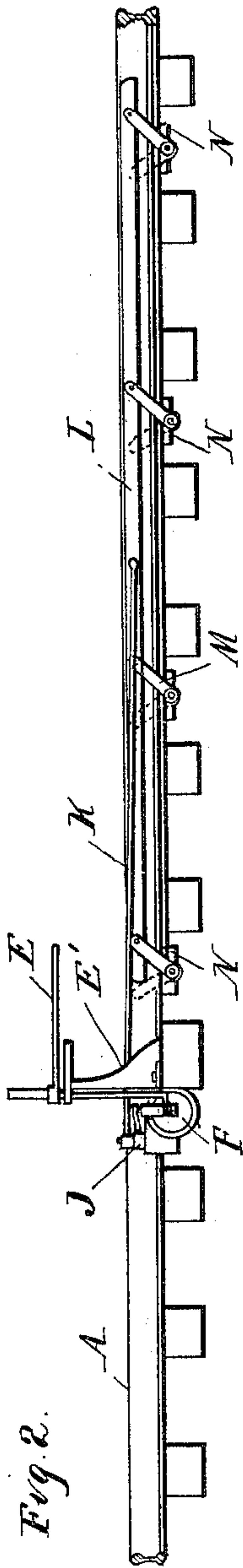


(No Model.)

B. F. WILLISTON.  
RAILWAY SWITCH.

No. 467,730.

Patented Jan. 26, 1892.



Witnesses  
M. L. Lindop  
P. M. Halbert

Inventor  
Benjamin F. Williston  
By  
M. L. Lindop, Attys.

# UNITED STATES PATENT OFFICE.

BENJAMIN F. WILLISTON, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF  
TO CHARLES E. SMART, OF SAME PLACE.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 467,730, dated January 26, 1892.

Application filed February 26, 1891. Serial No. 382,889. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. WILLISTON, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in railroad-switches; and it consists in the peculiar construction of a switch-rail designed to be operated by a hand-lever, a bar located beside the rail moved by said  
15 lever or its connection, so arranged that as soon as the train reaches the bar the wheels of the train will hold the switch in its adjusted position as long as any truck of the car is upon it, and a spring for returning the  
20 switch and bar to their normal positions as soon as the train has passed.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts, all as hereinafter  
25 more fully described.

In the drawings, Figure 1 is a plan view of a railroad-track to which my invention is applied. Fig. 2 is a side elevation thereof. Fig. 3 is a cross-section thereof on line *x x*,  
30 showing the switch extended and operating-levers in operation. Fig. 4 is an enlarged section on line *y y*.

A are the rails of the main track.

35 B are the rails of the switch, and C is the movable section or switch-rail. The switch is held normally in position to allow the train to pass upon the main track.

40 D is the switch-operating bar secured to the switch-rails and extending to the side of the track, where it is connected to the switch-lever E and the switch-stand E' of ordinary construction.

45 F is a barrel or box surrounding the connecting-bar D outside of the rails and in proximity thereto. Within this barrel the bar D is provided with a head G, which bears against one end of a spiral spring H, sleeved upon the bar and bearing with its other end on the opposite side of the barrel, all so arranged that  
50 the tension of the spring will tend to hold the

switch normally in the position shown in Fig. 1.

I is an offset upon the bar D, to which is pivotally secured the connecting-bar I', which is secured at its opposite end to one arm of 55 the bell-crank lever J, which is preferably pivoted upon the barrel F. The other arm of the bell-crank lever is connected to a rod K, which is secured centrally to the bar L, extending parallel with the rails of the main 60 track and in close proximity to the head thereof. This bar is of a length equal to the greatest distance between the tracks of any railway-car, and is supported by the links M normally in an inclined position, as shown in 65 full lines in Fig. 2, in which position the top of the bar L is slightly below the top of the rail. These links are pivoted to the blocks N. These blocks are all secured to a single plate O, which lies directly beneath the rail 70 of the track, and is spiked to the ties in such a manner as to prevent its creeping. This I preferably accomplish by notching the sides of the plate, as shown at P, and drive the spike in such a manner that the body will 75 enter that notch, as plainly shown in Fig. 4. The plate may be apertured to accomplish the same result.

The parts being constructed and arranged substantially as described, if a train moving 80 on the main track is desired to be side-tracked, or if a train on the side track is desired to enter the main track, the operator by turning the switch-lever E will throw the switch-section C in proper position. It will be nec- 85 essary for the operator to retain his hold of the lever E after he has moved it in that position, as such movement compresses the spring H. The movement of the lever also rocks the bell-crank lever into the position 90 shown in dotted lines in Fig. 1, and through the medium of the connecting-rod K also rocks the links to an oppositely-inclined position, as shown in dotted lines in Fig. 2. The top of the bar L being substantially level with 95 the top of the rail beside which it is placed as the train moves forward, as soon as the first truck has passed to a position over the bar L the operator will release his hold of the lever E, as the switch-section may be held 100



in its adjusted position by a wheel bearing upon the top of said bar. This bar is of such length that before the forward trucks of a train pass off the wheels of the rear trucks  
 5 will have engaged therewith. As soon as the train shall have passed clear of the switch and of engagement with the bar L the spring H will be free to expand, and will return the bar to its normal position (shown in full lines  
 10 in Fig. 2) and at the same time retain the switch-section in proper position relative to the main track.

I am aware that heretofore switches have been made designed to be moved by a part of  
 15 a train and held in their adjusted position by the movement of the train and returned to their normal position by a spring; but it is to overcome the objection to such switches as this that my device is constructed.

20 I desire to make it necessary for some one to be in position to operate the switch by means of a lever and to remain at such point until the train has actually passed from one track to the other, and then that the oper-  
 25 ator may be free to get upon the train, the switch being held in its adjusted position by the train until it shall have passed, and will then be returned to its normal position by the tension of the spring.

30 The use of my bar L with the links M, adapted to be moved to oppositely-inclined positions, I consider an especially good construction. It is evident that it locks the  
 35 switch-rail positively in either one of two positions—that is, either in line with the main

or side track. It is evident that the bar L may be located either beside the rails of the side track or on the main track.

What I claim as my invention is—

1. In a railway, the combination, with the  
 40 track, of a longitudinally-movable bar at the sides of the rails thereof, inclined pivoted supports for the bar, a switch-rail, an actuating-rod connected therewith, a spring for normally holding the bar in an extreme posi-  
 45 tion relative to the stand and the switch open, and a lever for moving the rod back and reversing the inclination of the links against the tension of the spring, substantially as described.

2. The combination, with the rail, of the  
 50 plate O, notched to receive the body of the spike, a series of links M, pivoted to said plate, the bar L, supported by said links, and means  
 55 for reciprocating said bar to move the links to oppositely-inclined positions, substantially as described.

3. The combination, with the switch-section, the connecting-rod D, and lever E, of  
 60 a spring holding said switch normally in line with the main track, and the bell-crank lever J, connected to a bar L, substantially as described.

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

BENJAMIN F. WILLISTON.

Witnesses:

M. B. O'DOHERTY,  
 N. L. LINDOP.