(No Model.) 2 Sheets—Sheet 1.

A. DI TRANI.

SWITCH.

No. 580,779. Patented Apr. 13, 1897.

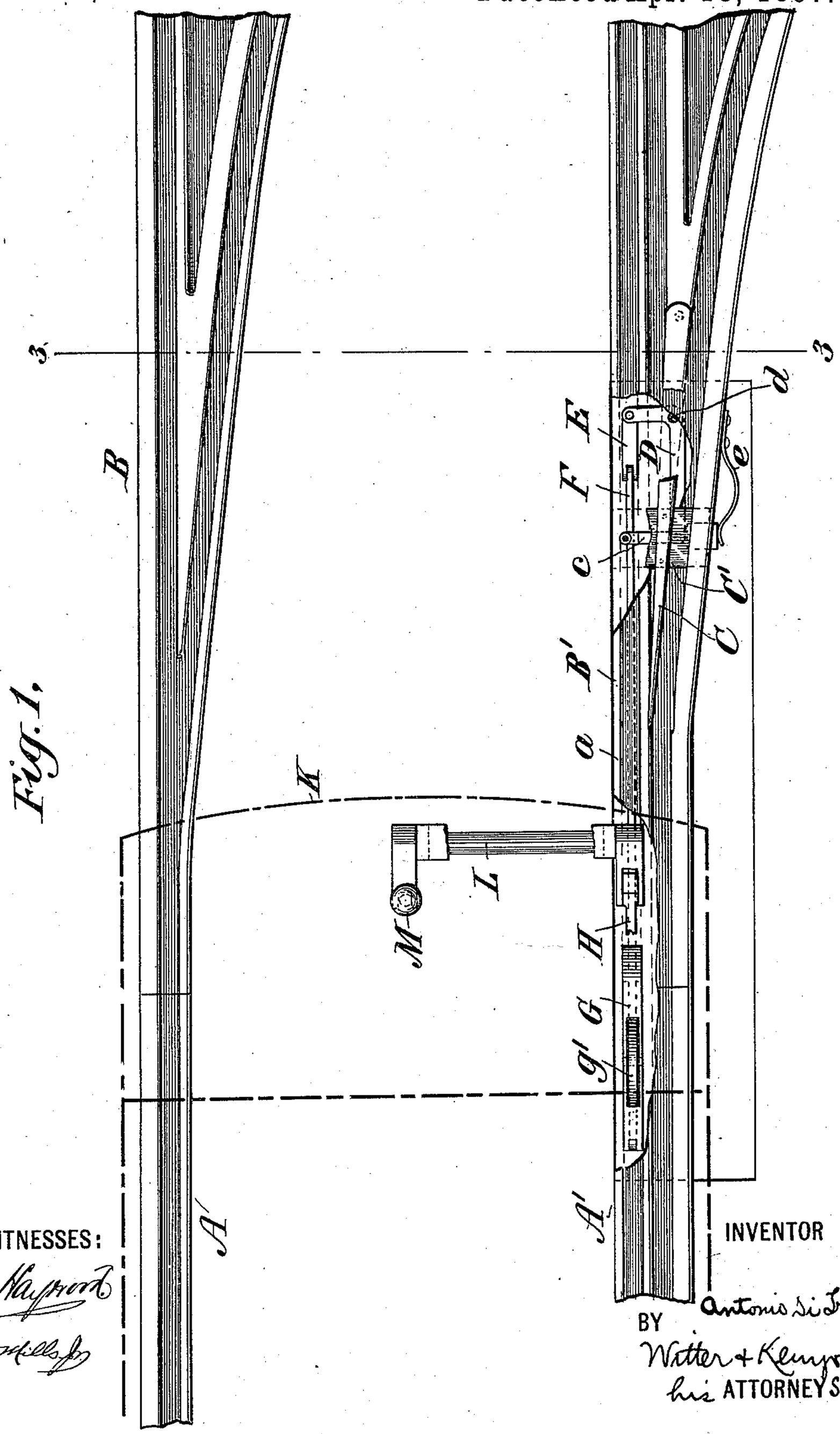

Fig. 1.

WITNESSES:

D. K. Hayford

Geo. Wills Jr.

INVENTOR

Antonio Di Trani

BY

Witter & Kenyon

his ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

A. DI TRANI.

SWITCH.

No. 580,779. Patented Apr. 13, 1897.

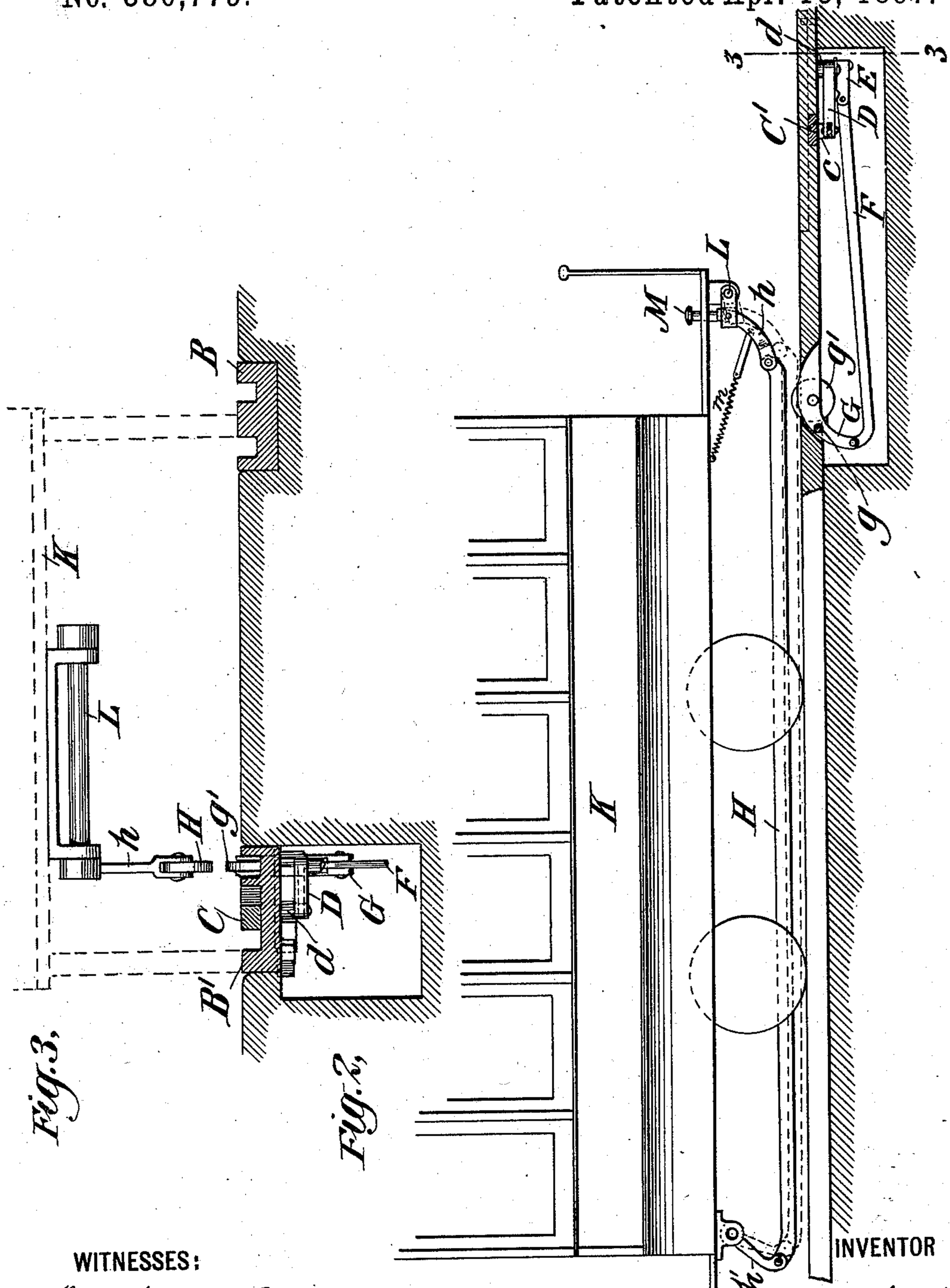

Fig. 3.

Fig. 2.

WITNESSES:

D. H. Haywood

Geo. W. Mills Jr.

INVENTOR

Antonio Di Trani

BY

Witter + Kenyon

his ATTORNEYS

UNITED STATES PATENT OFFICE.

ANTONIO DI TRANI, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO JOHN C. HEIN AND GEORGE W. GLAZE, OF SAME PLACE.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 580,779, dated April 13, 1897.

Application filed August 4, 1896. Serial No. 601,656. (No model.)

To all whom it may concern:

Be it known that I, ANTONIO DI TRANI, a subject of the King of Italy, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Switches, of which the following is a specification.

This invention relates to switches, and especially to switches such as are adapted for use in connection with tracks for street-railway cars, and it also relates to means for operating such switches from the moving car.

The invention consists of the construction hereinafter set forth.

In the drawings, in which one embodiment of the invention is illustrated and in which like letters of reference designate corresponding parts in all the views, Figure 1 is a plan view of a track and showing a car in outline in which my invention is embodied. Fig. 2 is a side elevation showing a car and a switch, partly in section, embraced within my invention; and Fig. 3 is a transverse section taken on the line 3 3, Fig. 3.

Referring now more particularly to the specific embodiment of the invention as shown in the drawings, A A′ are the rails of a car-track.

B is the permanent frog in alinement with the rail A, and B′ is the switch-rail in alinement with the rail A′. The switch-point C is pivoted at one end in the switch-rail B′ and is carried from side to side by a reciprocating block C′, which works in a recess in the under side of the switch-rail. On the under side of this block is a link *c*, pivoted at one end to the block and pivotally connected at its other end to a bell-crank lever D, whose elbow is pivoted to the switch-rail at *d*. The other end of this lever is connected, by means of the links E F, with a track-treadle G. In its best form the track-treadle is a lever pivoted at *g* to the switch-rail and pivotally connected with the link F and provided with an antifriction-roll *g′*. The treadle G is located at a point in advance of the switch-point C and projects above the track. In order that the treadle may not be subjected to outside injury, such as might be occasioned by trucks or carriages, I provide means for suitably protecting it. To this end the switch-rail is provided with a groove *a*, through which the treadle projects. In the present embodiment of the invention the switch-point is permanently biased to occupy a predetermined position, such position being herein shown as the position for traffic onto the turnout. The means employed for this purpose comprises a flat spring *e*, secured at one end to the switch-rail and bearing with its other end against the projecting end of the block C′, but other means may of course be employed for this purpose besides this spring, and in some cases the switch-point may be unbiased. As thus described, it will be seen that when the track-treadle G is depressed the links and bell-crank lever operate to move outward the block C′ and throw the switch-point from side traffic to through traffic, and that when the treadle is released the spring or whatever means is employed for the purpose returns the switch-point and its connections to the normal position.

In order that the switch-point may be conveniently operated by a moving car, I provide a bar H, connected by pivoted links *h h′* to the bottom of the car K. One of these links, as *h*, is fixed to a rock-shaft L beneath the car-platform, and the rock-shaft is arranged to be operated by a foot-treadle M, extending up through the car-platform. A spring *m* or other suitable means is employed to hold the bar normally above the track and out of position to engage the track-treadle G. It will thus be seen that by depressing the treadle M the bar H is thrown down and rides over the track-treadle G and throws the switch, and that when the treadle M is released the bar H rises to its normal position. The bar extends from a point in advance of the front wheels to a point in the rear of the rear wheels, so that the switch may be held over until both front and rear wheels have cleared the switch-point. The groove *a* in the switch-rail is arranged to receive the bar H when depressed, and, if desired, the rail A′, immediately in advance of the switch-rail B′, may be provided with such a groove.

It will be observed that in accordance with the several features of my invention as herein set forth the switch-point when required to be thrown may be easily and conveniently oper-

ated by the driver or motorman from the platform of a car approaching a turnout without stopping the car and without the operator leaving the platform.

The drawings and description set forth the best specific embodiment of the various features of the invention now known to me, but I do not wish to be understood as limiting the invention to such specific embodiment, as various changes such as will readily occur to any one skilled in the art might be made without departing from the scope of the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a movable switch-point, a bar connected to a car and extending beneath the same from a point in advance of the front wheels to a point in the rear of the rear wheels, said bar being movable to and from the level of the track and provided with a rock-shaft, an operating-treadle projecting above the platform of the car in operative connection with the rock-shaft, and means operatively connected with the switch-point and arranged to be operated by the said bar to actuate the switch-point, substantially as set forth.

2. In a switch, the combination of a switch-rail having the groove *a*, a switch-point pivoted to said rail, a reciprocating block carrying the switch-point, a link pivoted at one end to said block, a lever pivoted to the other end of said link and a track-treadle projecting through the groove *a* at a point in advance of the switch-point and operatively connected with the said lever to operate said block, substantially as set forth.

3. The combination of a switch-rail, a switch-point pivoted to the switch-rail, a reciprocating block carrying the free end of said switch-point, a link pivoted at one end to said block, a lever pivoted to the other end of said link, a track-treadle operatively connected with the said lever, and a bar carried by a car and extending from a point in advance of the front wheels to a point in the rear of the rear wheels of the car and adapted to be thrown into engagement with the track-treadle, substantially as set forth.

4. The combination of a switch-rail, a switch-point pivoted to the switch-rail, a reciprocating block carrying the free end of said switch-point, a link pivoted at one end to said block, a lever pivoted to the other end of said link, a track-treadle operatively connected with the said lever, a swinging bar carried by a car and extending from a point in advance of the front wheels to a point in the rear of the rear wheels of the car, a rock-shaft carried by the car and connected with said bar and a treadle projecting above the car-platform arranged to operate the rock-shaft whereby the bar is adapted to be thrown into engagement with the track-treadle, substantially as set forth.

5. The combination of a movable switch-point, a bar connected by means of pivoted links to a car and extending beneath the same from a point in advance of the front wheels to a point in the rear of the rear wheels, said bar being movable to and from the level of the track and provided with a spring or springs arranged to normally maintain the bar in elevated position, a rock-shaft on the car in operative connection with the bar, a treadle projecting above the car-platform for operating the rock-shaft, and means operatively connected with the switch-point and arranged to be operated by the said bar to actuate the switch-point, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANTONIO DI TRANI.

Witnesses:

GEORGE W. GLAZE,

JOHN C. HEIN.