

(No Model.)

2 Sheets—Sheet 1.

E. SCHÜLER.  
RAILWAY SWITCH.

No. 579,015.

Patented Mar. 16, 1897.

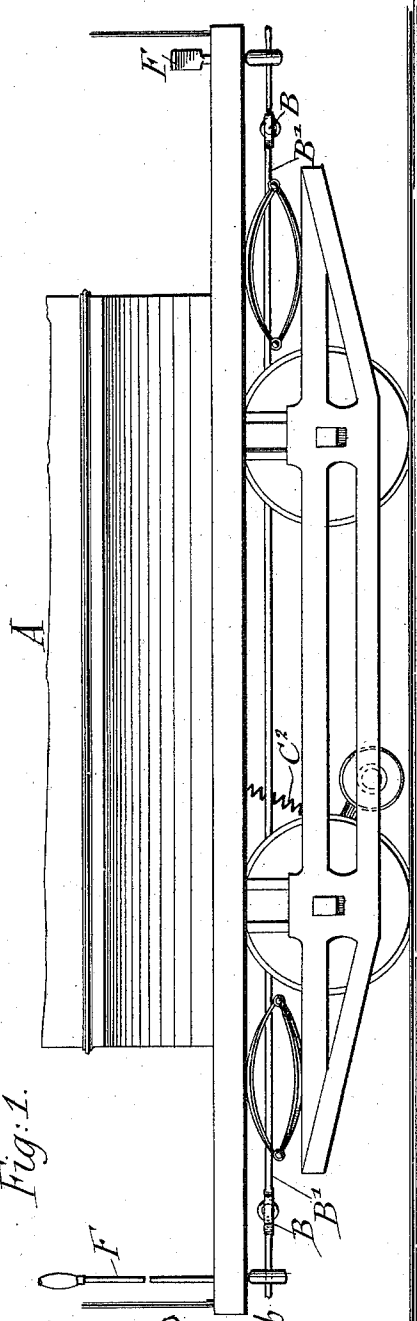


Fig: 1.

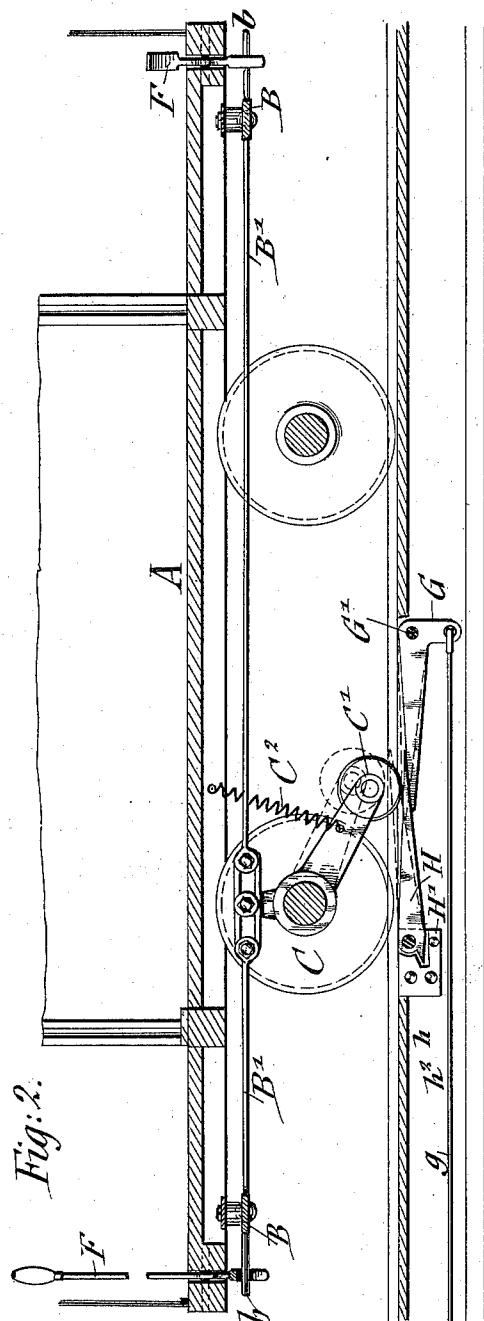


Fig: 2.

WITNESSES:  
*Geo. W. Fackel*  
*Carl Kastle*

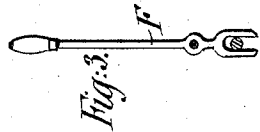


Fig: 3.

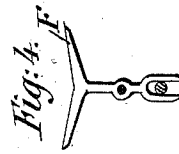


Fig: 4.

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 BY *Guise & Raegner*  
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Fig. 5.

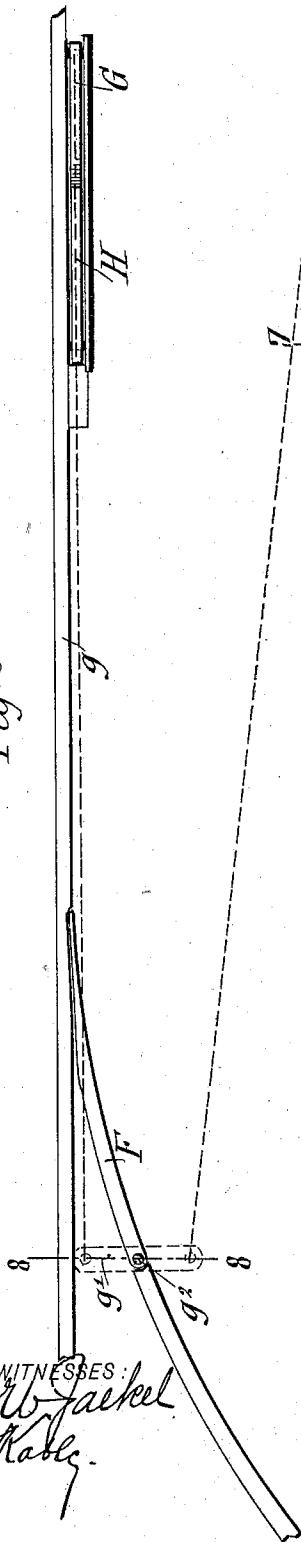


Fig. 6.

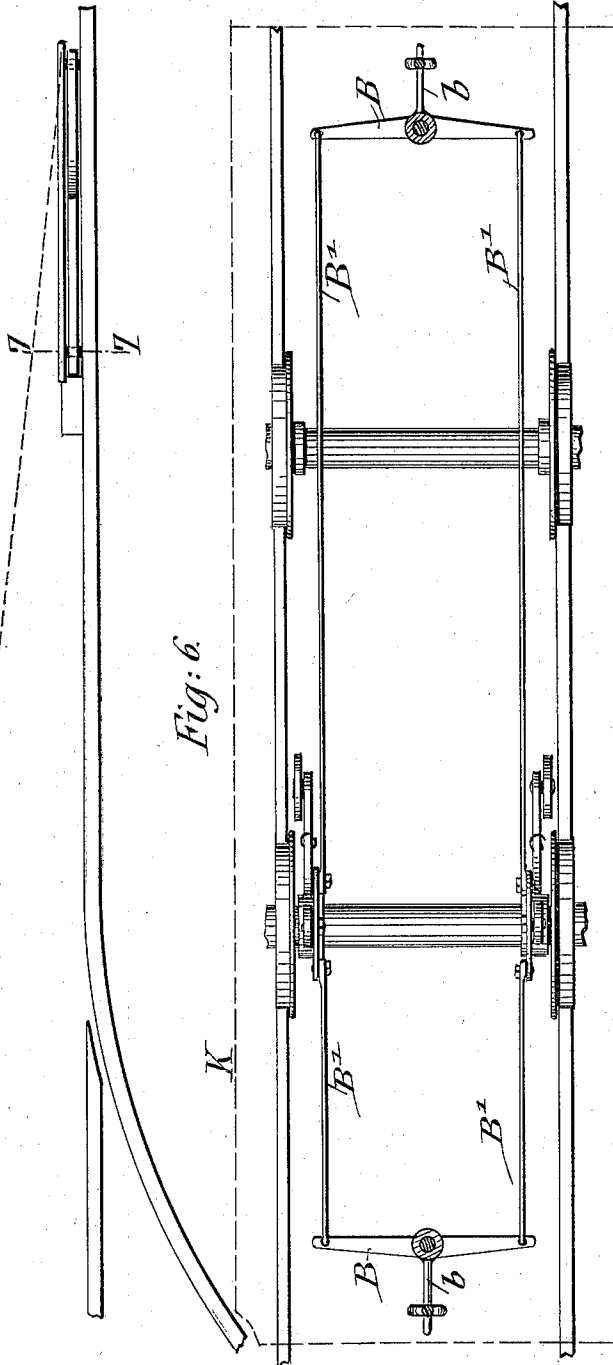


Fig. 7.

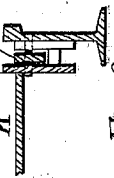
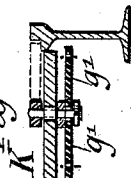


Fig. 8.



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# UNITED STATES PATENT OFFICE.

EDWARD SCHÜLER, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO  
FREDERICK WENDLER, OF SAME PLACE.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 579,015, dated March 16, 1897.

Application filed February 8, 1897. Serial No. 622,404. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SCHÜLER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention has reference to certain improvements in switches for the tracks of street-railways, so that the switch-tongue can be shifted from one track to the other from the car with perfect safety, and thereby the special attendant for shifting the switch-tongue dispensed with; and the invention consists of a switch for railway-tracks which comprises a pivoted switch-tongue, a lever applied to said pivot, a transverse bar applied to said switch-tongue, a chain or rope connection with said bar, and elbow-levers fulcrumed to each side of the track-rails at some distance from said switch-tongue, the upper end of said elbow-levers supporting the pointed ends of drop-levers located between the track-rails and auxiliary rails parallel with the same. The elbow-levers are operated by means of rollers supported at the lower ends of bracket-arms that are pivoted to the axle and operated against the tension of supporting-springs by means of a foot or hand lever operated by the motorman and suitable lever connections between said foot or hand lever and the upper ends of the bracket-arms, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of a car with my improved switch-operating attachment thereon. Fig. 2 is a longitudinal central section of the car and switching mechanism. Fig. 3 is a detailed section of the hand-lever, and Fig. 4 is a detailed section of the foot-lever, by which the switch-actuating mechanism on the car is operated. Fig. 5 is a plan view of the track and switch-tongue, with the mechanism for operating the same. Fig. 6 is a plan view from above of the switch-operating mechanism, the car being removed. Fig. 7 is a cross-section on the line 7 7 of Fig. 5. Fig. 8 is a cross-section on the line 8 8 of Fig. 5.

Referring to the drawings, A represents a street-car operated by electricity, cable, or

other suitable motive power. On the platforms at both ends of the car are fulcrumed foot or hand levers F, which are fork-shaped at their lower ends, so as to engage forwardly-extending arm *b* of a lever B, that is fulcrumed at its center to the under side of the car-bottom and connected at its ends, by means of connecting rods and chains, with the upper end of an angular lever or bracket-arm C, that is pivoted to one of the car-axes and provided at its lower end with a roller C'. A helical spring C<sup>2</sup> connects the longer arm of the angular lever C with the bottom of the car, as shown in Fig. 1, so as to return the bracket-arm into raised position when no pressure is exerted on the foot or hand lever F. The foot or hand lever F is arranged at both ends of the car, likewise the centrally-fulcrumed transverse lever B and connecting-rods B', while two angular levers C are arranged on the axle, one near each wheel of the same, so that they can be operated from either end of the car in such a manner that when the hand or foot lever F is moved in one direction the bracket-arm and roller at one side of the car are lowered and the bracket-arm and roller C C' at the opposite side of the car raised, or vice versa. When the opposite side of the foot or hand lever is depressed, the angular lever at one side is likewise depressed and the angular lever at the other side raised.

The lower roller at the lower end of the angular levers C serves to engage, when the car is at some distance from the switch-tongue E, arranged at the connection of the side-track with the main track, and depress an elbow-lever G, that is fulcrumed to an auxiliary rail G', located parallel with the main rail at one side of the track. The lower ends of said elbow-levers are connected by means of rods or chains *g* with a transverse bar *g'*, that is rigidly attached to the pivot *g*<sup>2</sup> of the switch-tongue F. The end of the upper and longer arm of the elbow-lever G is beveled and covered by the tapering point of a guard-lever H, which is likewise pivoted to the auxiliary rail G', said guard-lever H being provided beyond its pivot with a heel *h*, that engages a recess *h*<sup>2</sup> of a stop-plate H', that is attached to the auxiliary rail, so as to give a certain play to the tapering lever H. When the roller of the

depressed arm moves from the elbow-lever G' and the pointed lever H, the spring-tongue is shifted either against the main rail or in position clear of the same, as shown in dotted lines in Fig. 4, according as the car is to move along the main track or onto the side-track. When the spring-tongue is to be shifted in its dotted position, the right-hand angular lever is depressed, while when the spring-tongue is to be shifted into position shown in full lines in Fig. 4, the left-hand angular lever is depressed, so that thereby the actuating mechanism of the spring-tongue is operated.

The fulcrumed lever G and the guard-lever H are located between the main track-rail and the auxiliary track-rail G' and are slightly below the track-rail, so that they are not affected by the passage of the wheels over the rails, but only by the roller of the angle-lever, which is depressed by the action of the foot or hand on the angle-lever-operating mechanism.

The depressing of the elbow-lever G and the guard-lever H at one side of the track produces the setting of the switch-tongue and simultaneously the raising of the corresponding elbow-lever and guard-lever at the other side of the track, so that no springs are necessary for placing the levers operated by the mechanism on the car into the required normal position ready to be acted upon by the mechanism on the car. The recessed plate H', that limits the motion of the pivoted guard-point H, limits the motion of the levers and switch-tongue to the extent required, so that a positive and reliable shifting motion of the operating-levers as well as the switch-tongue is produced.

The switch mechanism is located between the rails and is protected by a cover K of any suitable material and construction.

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

1. The combination with a car-bottom, of a forked foot or hand operated lever at each end

of the car, a transverse lever fulcrumed to the under side of the car connected by a central shank with said foot or hand lever, two angle-levers pivoted to one of the axles of the car and provided with rollers at their lower ends, connecting-rods between said transverse levers and the upper ends of said angle-levers, and springs for supporting said angle-levers in raised position, substantially as set forth.

2. The combination with angle-levers pivoted to one of the axles of the car and mechanism for raising or lowering said angle-levers from the platforms of the car, of a switch-tongue located at the point of connection of the side-track with the main track, a transverse bar applied with a pivot to said switch-tongue, elbow-levers arranged at each side of the track at some distance from said switch-tongue, connecting-rods between the transverse bar of the switch-tongue and the lower ends of the elbow-levers, a pointed guard-lever acting on the lower arm of the elbow-lever, substantially as set forth.

3. The combination with a pivoted switch-tongue located at the junction of the side-track with the main track, a transverse bar attached to the pivot of said switch-tongue, elbow-levers fulcrumed to parallel auxiliary rails located at some distance from said switch-tongue, one along each track-rail; connecting-rods between the lower ends of the elbow-levers and the transverse bar of the switch-tongue; a pointed guard-lever extending from the longer arm of the elbow-lever, and a recessed stop-plate engaging a heel of the pointed lever so as to limit the motion of the elbow-lever, pointed lever and switch-tongue, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EDWARD SCHÜLER.

Witnesses:

PAUL GOEPEL,  
GEORGE W. JAEKEL.