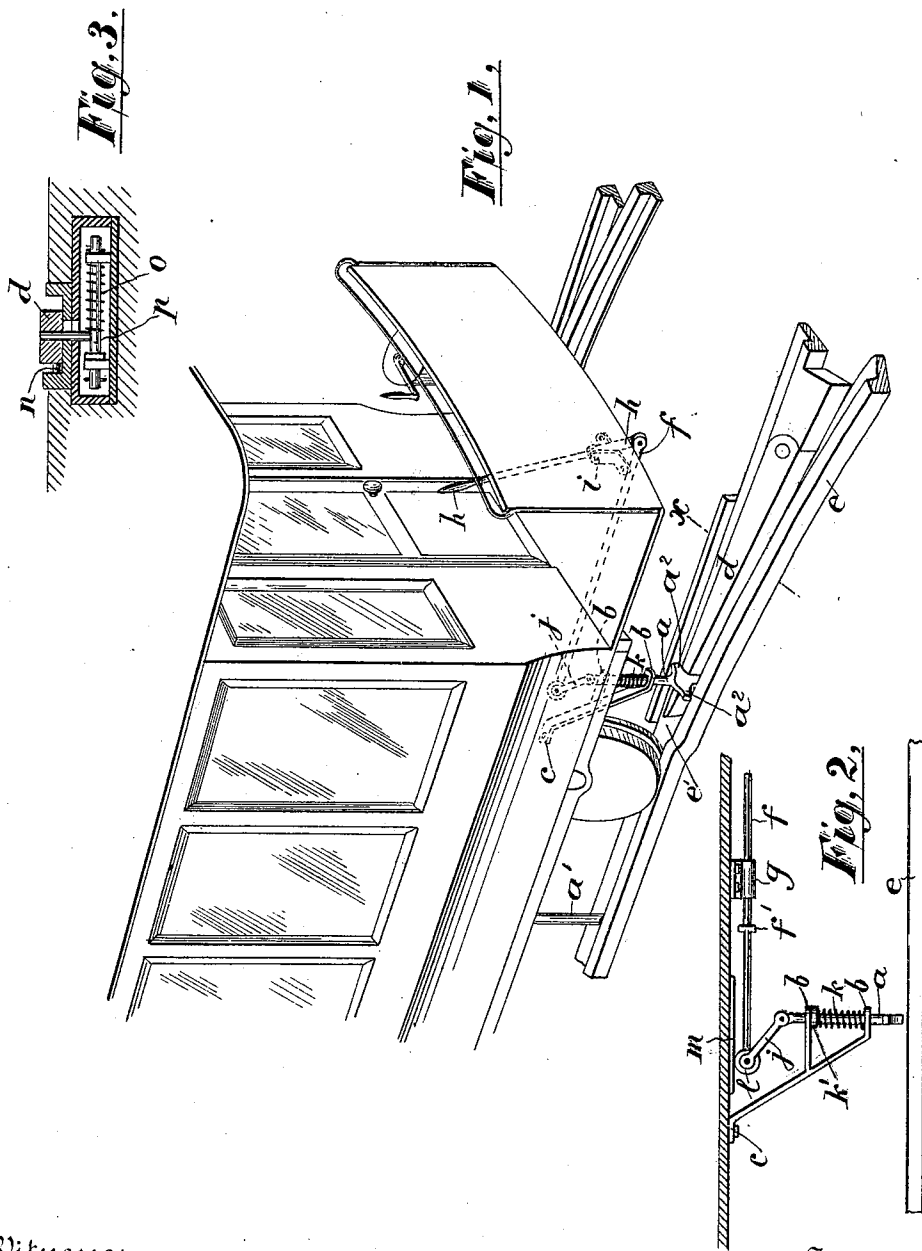


(No Model.)

H. B. BÜTTEL.
RAILWAY SWITCH.

No. 521,014.

Patented June 5, 1894.



Witnesses

Robert Solberg
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UNITED STATES PATENT OFFICE.

HARRY B. BÜTTEL, OF NEWARK, NEW JERSEY.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 521,014, dated June 5, 1894.

Application filed September 19, 1893. Serial No. 485,804. (No model.)

To all whom it may concern:

Be it known that I, HARRY B. BÜTTEL, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Railway-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to enable the driver or motor-man of a street-railway-car to operate a switch without stopping or getting off the car, and thereby save the expense of switch-men.

The invention consists in the improved apparatus and in the arrangement and combination of the several parts thereof, as herein set forth and finally pointed out in the claim.

Referring to the accompanying drawings, in which similar letters of reference indicate corresponding parts wherever they occur, Figure 1, represents, in perspective, a section of a railway and switch and a car standing thereon provided with my improvement, shown mainly in dotted lines. Fig. 2, shows, in section, a portion of the bottom of the car, and, in elevation, the main portion of the apparatus connected thereto, and Fig. 3, is a vertical section taken through the line *a*, of Fig. 1, and also through a box located in the earth beneath the switch, in which is located the mechanism, shown in elevation, for holding the switch-tongue in its normal position.

In said drawings, *a*, indicates a vertically-movable rod mounted in suitable bearings, *b*, firmly secured to the bottom of the car, as indicated at *c*, Figs. 1 and 2, and adapted to engage with and move the tongue, *d*, to one side as the car-wheel is about to enter the switch, as will be understood upon reference to Fig. 1.

To facilitate the proper engagement of the rod *a*, with the tongue *d*, the latter is held, normally, out of contact with or apart from, the side of the rail, *e*, and a slight off-set may also be formed in said rail at, *e'*, near the point of said tongue, as indicated in Fig. 1, as a further means to the same end. To hold

the tongue in the position above noted I insert a block or bumper, *n*, Fig. 3, between the tongue and rail, below the surface of the track; or said bumper may be formed upon and project from the side of the tongue as a lug, as will be understood. Said rod *a* is connected with a rod, *f*, mounted and working in suitable bearings, *g*, secured to the bottom of the car, and connecting, pivotally, with a hand-lever, *h*, fulcrumed at *i*, within easy reach of the driver or motor man, as indicated in Figs. 1 and 2. The opposite end of said rod, *f*, is connected with said rod *a*, by means of a cam-rod, *j*, the upper end of which carries a friction roller, *l*, which engages with the bottom of the car, or with a plate *m*, secured thereon, as indicated in Fig. 2, to facilitate the working of the parts and avoid friction, as will be understood.

The rod *a* is held in its normal position by means of a suitable spring, *k*, interposed between the lower bearing, *b*, and a fixed collar, *k'*, upon the rod, as indicated in Figs. 1 and 2; and the cam-rod is prevented from being drawn to and catching upon the center by means of a suitable stop-lug, or collar, *f'*, as indicated in Fig. 2.

It may sometimes happen that the distance between the trucks of the car is greater than the length of the tongue, in which event the latter would, of course, close before the rear truck would enter and thus cause derailment. To meet and overcome this difficulty I adjust, between the trucks, another vertical rod *a'*, in the same manner as the rod *a*, and to be worked in the same manner and by the same means, the rod, *f*, being lengthened to make the connection therewith, as will be understood. The lower ends of the rods *a*, and *a'*, are, preferably, tapering or wedge-shaped to facilitate their entrance into the mouth of the switch and may be provided with shoulders, *a²*, to engage the top of the rail and tongue and prevent the point or end of said rods from engaging with the bottom of the rail, as will be understood.

The switch-tongue is held in its normal position by means of a spring, *o*, coiled around a rod, *p*, mounted in suitable bearings, beneath the switch, and with which the tongue is connected, as indicated in Fig. 3. This arrangement permits the car to be run back,

through the switch, upon the main track again without any difficulty or obstruction should it be necessary or desirable to do so.

Having thus described my invention, what
5 I claim, and wish to secure by Letters Patent of the United States, is—

The improved switch-operating apparatus, herein described, consisting of a vertically-movable rod mounted in suitable bearings secured to the car, and adapted to engage with
10 and open the switch-tongue; a lever fulcrumed on the platform of the car within

reach of the driver or motorman, and means, as *f, j*, connecting with said lever and said rod, whereby the latter is operated; as de- 15 scribed, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of September, 1893.

HARRY B. BÜTTEL.

Witnesses:

OLIVER DRAKE,

ROBERT SOLLBERGER.