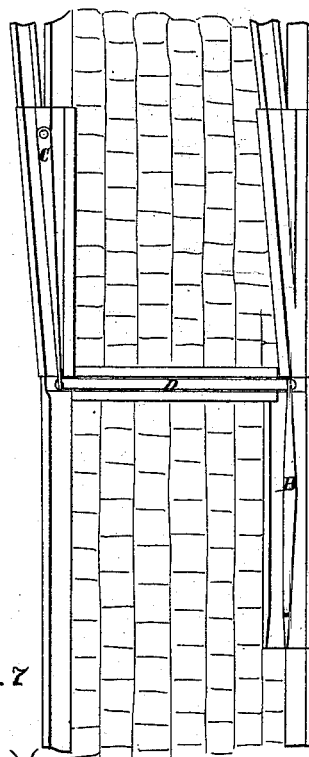
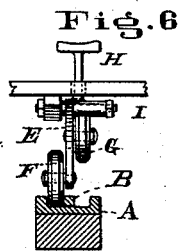
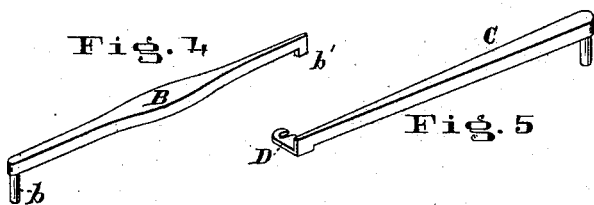
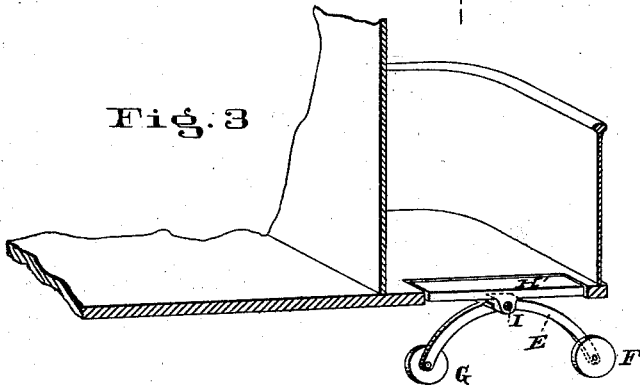
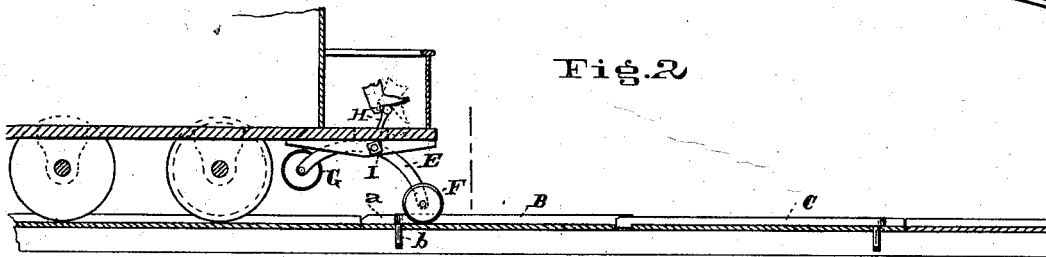
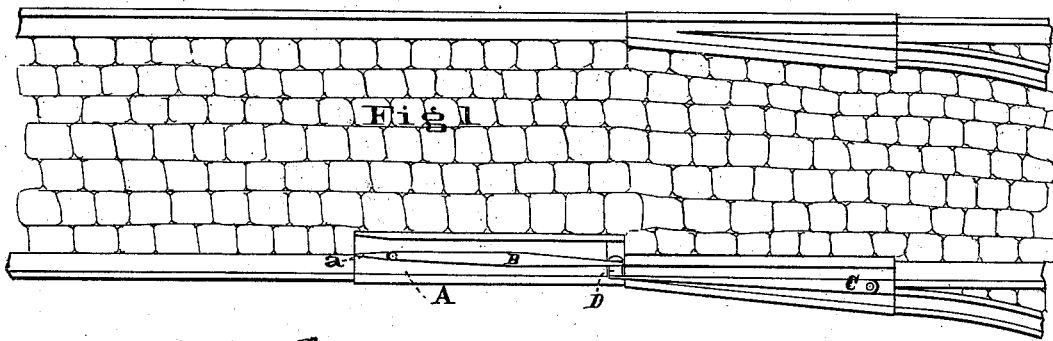


C. F. GESSERT.
Railway-Switch.

No. 203,133.

Patented April 30, 1878.



Attest
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Inventor
Chas. Fremont Gessert

UNITED STATES PATENT OFFICE.

CHARLES F. GESSERT, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF HIS
RIGHT TO M. W. OLIVER, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **203,133**, dated April 30, 1878; application filed
October 29, 1877.

To all whom it may concern:

Be it known that I, CHARLES FREMONT GESSERT, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Railway-Switches and devices for operating the same, which improvements are fully set forth in the following specification and accompanying drawings.

This invention relates to switches for street-railways, and the means of operating said switches from the car without the delay of stopping. Its object is to provide a cheap, convenient, and reliable means of operating the switches now in common use.

It consists, first, in an operating-arm, one end of which is linked to the switch-rail, and the opposite end pivoted in the tram-rail; and, second, in a peculiar operating device attached to the car-platform in a position to be operated by the driver to change the switch-tongue to either position.

In the drawings, Figure 1 is a plan view of a railway-switch and a portion of the track fitted with my operating-arm. Fig. 2 is a longitudinal vertical section, taken in front of the switch-rail and its operating-arm, and sufficient of a car to show a plan view of the device for changing the switch. Fig. 3 shows, in perspective, a modification of the treadle for operating the switch-changing device. Fig. 4 is a perspective view of the shifting-arm, detached and enlarged to more clearly show its shape and its pivot and connecting pins; and Fig. 5 is a similar view of the switch-rail. Fig. 6 is a transverse vertical section through dotted line of Fig. 2, looking in the direction of the car, to show an end plan view of the switch-changing device. Fig. 7 is a plan view of a portion of a track and switch, illustrating the mode of operating the switch-rail when the curve is to the left and the switch-rail upon the opposite side from the operating device for shifting it.

Referring to the parts in the several figures, A is a guide-rail adjoining and in advance of the switch-frog. This rail is wider than the rails proper, and has a flange projecting up from its inner edge similar to the wheel-flange upon the outer edge, and a central projecting

stirrup, *a*, near its forward end, and a transverse depression near the end which joins the switch-frog. B is the switch-operating arm. When in position it corresponds in height with the switch-rail. Its vertical sides bulge near its mid-length, forming cam-projections for operating it by means of the wheels of the changing device. A pivot-pin, *b*, projects from the lower side at one end, to enter a hole in the bottom of the guide-rail A at the end of stirrup *a*. The office of this stirrup is to protect the pivot-pin from being bent or broken by wagons running on the track. The arm has also a projection, *b'*, from its opposite end to connect it with the switch-rail.

C is the switch-rail or tongue. It differs from the ones now in common use only in being slightly longer than the switch-frog, so as to project over the depression in the guide-rail A, and in having the link D secured to the under side of the end thus projecting over. This link D drops into the transverse depression in the guide-rail A, so as to be below the rail and out of the way of the wheel-flange. It has a notch or hole in its outer end to receive the coupling-pin *b'* of the operating-arm, to connect the arm B and switch-rail C together.

In the modification shown in Fig. 7 the operating-arm B is on the same side of the track, while the switch-tongue is upon the opposite side, and link D is extended across the track to connect them. For the purpose of protecting the link, it is best to place it within a metal guide-box, either open on the top, as shown, or completely inclosed.

The device for changing the switch-rail is composed of a yoke, E, which carries two wheels, F and G, at its opposite ends, journaled upon stud-pins projecting from opposite sides of the yoke. The yoke is centrally journaled upon a stud-pin, secured in the side of the beam which supports the platform. H is a lever secured to or made part of the yoke. It projects up through an opening in the platform, in a position to be operated by the foot of the driver.

The wheels F and G are alike in construction, and should be a little less in width than the space between the opposite edges of the

arm B and flanges of the guide-rail A, at the forward or pivoted end of the arm, so that they will freely enter the grooves, and in passing forward one side of the wheel will press against the flange of the rail, and the other side will wedge the arm over and change the switch, if it is not already in the proper position.

To avoid scraping, the angles at the edge of the wheels should be beveled or rounded off, and the wheels should be fitted upon their journal-pins to have sufficient lateral play to compensate for the lateral motion of the car. The beveled stirrup *a* will insure the entrance of the wheel in the proper groove.

When the yoke is in the position shown in Fig. 3, which position it will occupy except when used for moving the switch, it will be a sufficient distance above the road to allow for vertical motion of the car, and be out of the way of obstructions upon the track.

In the modification shown in Fig. 3, a portion of the platform is cut out, and the treadle H' fitted to the opening, and secured to the yoke. This form is intended to be used upon open platforms, where the lever H, projecting up, would be in the way; or it may be used in place of the device shown in Fig. 2 in any case.

The yoke being secured in a proper position to bring the wheel F in the outer groove in rail A, and the wheel G in the inner groove, as desired, the driver has only to press the lever forward if he desires to turn the curve to the right, and backward if he desires the car to go along the straight track or turn to the left as the car approaches the switch, and this he can do without regard to what position the switch is in, as no injury can be done if the switch is in the right position.

As the guide-rail A, the arm B, and link D constitute all the changes required in the railway-tracks now in common use to apply the first part of my invention, this part can be applied at very little cost, and, even if the operating device for changing the switch be

dispensed with, it will still give good results, as it will enable the driver to change the switch in advance of the curve by placing the common switch-iron in the groove between the arm B and one of the flanges on rail A, and, by turning it, change the switch to either position.

The changing device, which is the second part of my invention, can also be used with advantage in connection with the common switch-tongues now in use by making the peripheries of the wheels F and G cone or wedge shaped, and bringing the proper wheel down when the car has reached the switch; but this would require more attention upon the part of the driver, and would not have the same degree of certainty as when the arm B is used.

It is also evident that this changing device can be fitted upon both platforms, or the stud-pins I only secured at each end, so that the same device can be readily changed from one end to the other when desired.

I claim—

1. In combination, the lever-arm B, pivoted in rail A, switch-rail C, and link D, to connect said lever-arm and switch-rail, the parts being constructed to operate substantially as described.

2. In combination with a street-car platform, the switch-changing device consisting of yoke E, secured beneath said platform, said yoke carrying wheels F and G in a position to change the switch, and lever H, to operate said yoke, substantially as specified.

3. The combination, substantially as specified, of a railway-switch, composed of the parts A, B, C, and D, and the device for operating said switch, composed of yoke E, wheels F and G, and lever H, secured to the platform of the car upon stud-pin I.

CHAS. FREMONT GESSERT.

Witnesses:

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G. C. WISWELL.