





# United States Patent Office.

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*Letters Patent No. 61,967, dated February 12, 1867.*

## IMPROVED RAILROAD SWITCH.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE WESTINGHOUSE, Jr., of Schenectady, Schenectady county, and State of New York, have invented a new and useful improvement in Portable Railroad Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a portion of the track of a railroad with my improvement applied to one of the rails.

Figure 2 is a longitudinal section of the track, showing also my improved switch in side view.

Figure 3 is an under side view of the switch arranged for transportation or for stowing away.

The object of this invention is to provide ready and efficient means for replacing locomotives and cars upon the track of a railway from which they have run off. It consists in a portable switch, which is adapted to be used with equal efficiency on the right and left-hand sides of the track.

The letter A designates the rails of a railway, and B the ordinary ties. C is the frog or body of the switch made in one piece. I prefer to make it of steel in one piece by casting; but the mode of making it I leave for the subject of another application for Letters Patent. The under side of the frog is grooved lengthwise, so that it can lie upon and fit over the rail A, the edges of which it overlaps and encloses, as is seen in fig. 2. The frog C has a right and left-hand branch track, D D, at one end, which tracks run into one, designated by the letter I, at the other end of the frog, grooves H H being made across them at or near the place where they unite, to allow the flanges of the wheels of a locomotive or car to run across the frog so as to reach the inside of the track. The parts F of the right and left branch tracks D D are lowered so as to bring their under surfaces down upon the ties, thereby forming rests, which support and always give a solid bearing to the frog. The ends of the said branch tracks D D are cut down, as is seen in fig. 2, and are provided with pins G, which enter holes in the under side of a switch-bar, E, the said bar being thereby hinged to one or the other of the said branch tracks, according as it is applied to the one on the right or left-hand side. The end of the switch-bar is curved, and works in a socket made for it in the adjacent shoulders of the branch tracks D, so as to make a hinge-joint, which allows the bar to be moved horizontally towards and away from the rail A without disconnecting it from the rest of the switch or disturbing its proper relations with the branch track D, to which it is connected. Each branch track D is made so as to receive the said switch-bar, and allow it to be hinged or pivoted thereto, as shown in the drawing, so that the bar can be applied to either one at pleasure. The rests F come upon the ties B in the same manner upon opposite sides of the rail A, and the frog has, consequently, always a firm bearing. The length of the switch-bar E is greater or less, according to the distance of the ties from each other. When the apparatus is applied to a rail, A, it is adjusted thereon so that the rests F and the free or outer end of the bar shall each have a bearing on one of the ties B. The under side of the bar near its free end is bevelled, so as to allow it to come squarely upon one of the ties. Each rail A of a track is to be provided with a switch of the construction here shown; and since each switch will be a duplicate of the other I have only shown one, the application of which to the rail A will enable any one acquainted with the art to understand how to apply a duplicate switch to the other rail when it is desired to replace a locomotive or car upon a railway track. The apparatus is secured to the rail on which it is placed by means of a set-screw, seen in figs. 1 and 3. When the switch-bar is not in use it is lifted off from the apparatus, and is packed in the groove which is formed on the under side of the frog to receive the rail A, in which condition the whole switch is in readiness for transportation or for being stowed away, the switch-bar being then held fast in the bottom of the frog by the set-screw aforesaid. The free end of the switch-bar E on its under side is roughened or corrugated to prevent it from slipping or moving laterally when receiving the impact of the wheel of a car. The length of the bar is such as to allow its end to rest on one of the ties B, the upper surfaces of the rests F being inclined backwards, so as to give the bar a firm support thereon, and to bring the upper surface of the bar into or nearly into the same plane with the surfaces of the branch tracks D D. It will be observed that the outer end of the part I of the frog which is directly over the rail A is bevelled off, so as to make the inclination from the frog to the rail as gentle as possible. My improvement prevents the flange or other part of the wheel of a car from striking against the side or edge of the rail when it is being replaced, since the part I of the track on the frog always guides the wheel smoothly to its proper position on the rail A; and it does this for either rail of a track, whether the rail be approached by a wheel from the right or left-hand side. It will also be observed



that the bearing surface of the parts F, on which the switch-bar rests, has a considerable length, the object being to prevent the frog from being tilted when a wheel is running upon the bar, and also to allow the apparatus to be moved along upon a rail for proper adjustment of the free end of the bar to bring it over one of the ties. This prolongation allows the switch-bar to bear on the top of said parts F for some distance behind the joint, and it is therefore not necessary in adjusting the apparatus on a rail to bring the place of such joint vertically over a tie, it being sufficient, in order to secure a firm bearing, and prevent the apparatus from tilting when a wheel ascends it, that the end only of the rest or part F come over a tie. This result is due to such prolongation of the parts F of the branch tracks D, with which the switch-bar is put in connection, as above explained. The free end of the switch-bar should rest on one of the ties; and the length of the bar and the position of the rests F are such that the jointed end of the bar shall also have a solid bearing, through the rest F beneath it, on another tie, whatever may be the adjustment and position of the apparatus on the rail A. Instead of making rests F on the under side of the branch tracks, and having the joints on the upper sides, the reverse arrangement may be made, viz, the joints may be made on the under side, and the joint end of the switch-bar be allowed to come between said branch track and the tie, and thus be made to support the apparatus at that point; but I prefer the arrangement shown in the drawing.

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

1. A portable railroad switch, having double branch tracks D D, which converge, as shown, and are intersected by grooves H H, substantially as set forth.
2. I also claim the double-grooved frog C, having branch tracks D, in combination with the switch-bar E, substantially as set forth.
3. I also claim the extension of the rests F of the branch tracks D backwards, so as to form a bearing surface for the switch-bar behind its joint, substantially as shown.
4. I also claim the combination of the double grooves, the right and left branch tracks, and the track I at the forward end of the frog C, substantially as shown.

GEORGE WESTINGHOUSE. JR.

Witnesses:

J. VAN SANTVOORD,  
S. EDWARDS TODD.