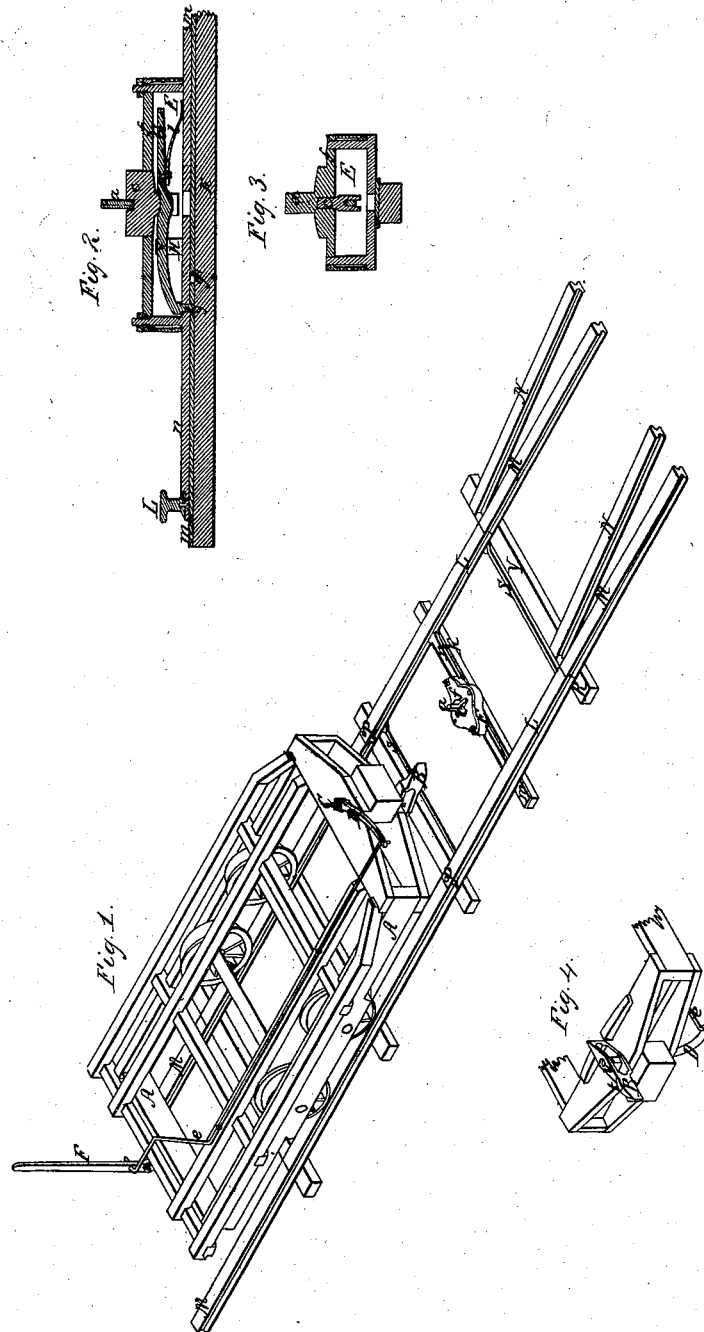


*A. Ralston,*

*Railroad Switch,*

*N<sup>o</sup> 4,977.*

*Patented Feb. 20, 1847.*



# UNITED STATES PATENT OFFICE.

ANDREW RALSTON, OF WEST MIDDLETOWN, PENNSYLVANIA.

## OPERATING RAILROAD-SWITCHES.

Specification of Letters Patent No. 4,977, dated February 20, 1847.

*To all whom it may concern:*

Be it known that I, ANDREW RALSTON, of West Middletown, in the county of Washington and State of Pennsylvania, have invented sundry Improvements in the Manner of Constructing and Operating Railway-Switches; and I do hereby declare the following to be a full, clear, and exact description, thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a perspective view of a main rail-road track, a diverging track, and my improved switch for bringing them into connection with each other; also the supporting frame of a car or locomotive resting upon the main track of rails; Fig. 2, is a transverse section through the central portion of my improved switch; Fig. 3, a longitudinal section through the same; Fig. 4, is a perspective view of the front end of the locomotive frame, broken off from the remainder.

In the respective drawings the same letters refer to corresponding parts.

The nature of my invention consists in so constructing the switch, that by means of an adjustable guiding wedge attached to the front end of the locomotive, the engineer can unfasten and move the switch to the right or left, and again secure it in the desired position for connecting the sections of the main track of rails with each other, or with a diverging track, while the locomotive is in motion.

L, L, are the rails of the switch, united by the cross-ties *s, s*, and *n*; the switch is jointed to the rails M, M, of the main track, at *p, p*, in the usual manner; the opposite ends of the rails of the switch slide upon the cross tie Y, upon which the ends of the rails (M, M,) of the main track, and the rails (N, N,) of the diverging track, are secured. The central portion of the rails of the switch rest and slide upon the cross tie K.

*m*, is a metallic friction plate secured to the top of K, the flat metallic central cross tie *n* of the switch, rests and slides upon the plate *m*. To the cross tie *n*, there is secured a metallic box E.

G, is a lever secured in the box E, working in the fulcrum support H.

*i*, is a vertical pin on one end of the lever

G, (passing through *n*) which is forced into either of the apertures *g, g'*, in the plate *m*, by the spring *l*; thereby securing the switch firmly in its proper position.

*c*, is a vertical metallic detaching plate passing through a transverse slit in the top *f*, of box E, and resting upon the lever G.

*a*, is a strong stud secured to the center of the top *f*, (of box E,) its cross section being in the form of a rhombus. The detaching plate *c*, in the center of its upper edge, has a recess which permits it to project above the top of the cover *f*, on each side of the stud *a*; it also has an oval projection at the center of its under edge, fitting into a recess in the top of lever G, so that any downward pressure upon *c*, on either side of *a*, will act equally upon G—raising the pin *i*, out of either of the recesses *g, g'*, thereby disengaging the switch so that it can be vibrated to the right or left.

C, is a vertical shaft having its bearings in the center of the front end of the frame of the locomotive, to the lower end of which, is secured a guiding wedge B; having a sharp point projecting in front of the locomotive. On the under side of the guiding wedge B, there is a downward swell *t*, curving from its front point to the horizontal plane *v*, of the same.

D, is an arm on the top of the shaft C, connecting the same to the vertical hand lever F, by means of the rod *e*.

In approaching a turn out, if the engineer wishes to take the track N, N, he draws back the hand lever F, which throws the front point of B, to the right, causing it to pass on the right side of the stud *a*; the upward curve of the front portion of the swell *t*, passes over the detaching plate *c*, the central portion of the same presses down the detaching plate and acts upon the lever G; thereby disengaging the switch from the fastening pin *i*; as soon as the switch is disengaged from its fastening, the guiding wedge B, begins to exert a lateral pressure upon *a*, which forces the switch to the left into its proper position, in connection with N, N, and there being no downward pressure exerted on the lever G, by B, while laterally operating, the pin *i*, is forced into the aperture *g'*, and firmly secures the switch in its place. Should the

switch be in connection with the track N, N, and the engineer wishes to proceed on the main track, he throws the front point of B, to the left, which brings the switch into  
5 connection with the main track, and adjusts it, in the manner above set forth. In approaching a turn out, the engineer—to avoid accidents—will set the guiding wedge B, in such a position as to insure its bringing the switch into the proper position with  
10 the track he wishes to take. The operation of the guiding wedge B, upon the switch, will be the same in approaching it in both directions, either on the main track, or diverging tracks.  
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Having thus fully described the nature of my improvements in the manner of constructing and operating rail-way switches,

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

The combining with the central cross-tie 20 *n*, of the switch, the stud *a*, the detaching plate *c*, the lever *G*, the spring *l*, and the friction plate *m*, with the apertures *g*, *g'*, in the same, in such a manner that the forward motion of the guiding wedge B, (of  
25 the form herein set forth,) secured to the front end of a locomotive, will unfasten, and move the switch to the desired position, and the switch refasten itself again substantially 30 as herein set forth.

ANDREW RALSTON.

Witnesses:

Z. C. ROBBINS,  
H. DORN.