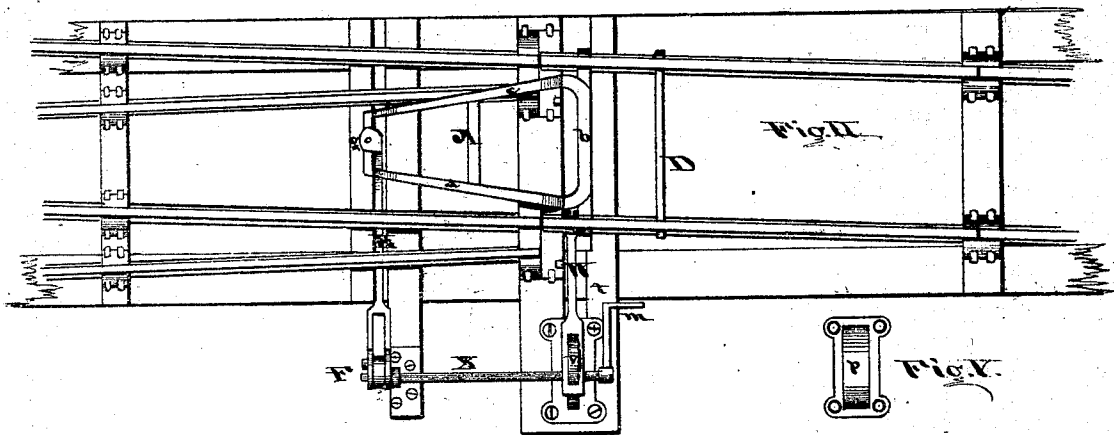
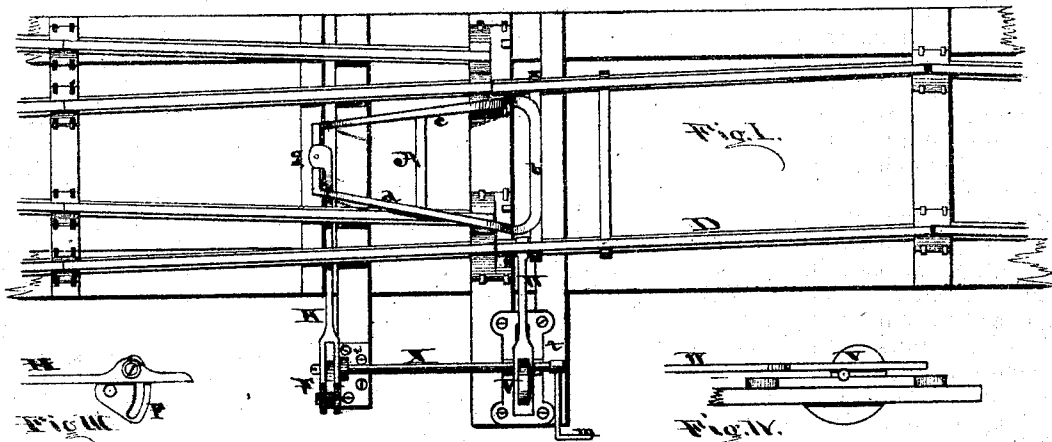


EDWARD MERCIER.

Improvement in Railway Switches.

No. 120,592.

Patented Nov. 7, 1871.



Inventor.
Edward Mercier
by his Attorneys
Gardiner & Hyde

Witnesses.
E. Dudley Chapin.
F. W. Chapin.

UNITED STATES PATENT OFFICE.

EDWARD MERCIER, OF SPRINGFIELD, ASSIGNOR TO HIMSELF AND LITTLE & STANTON, OF HUNTINGTON, MASSACHUSETTS.

IMPROVEMENT IN RAILWAY SWITCHES.

Specification forming part of Letters Patent No. 120,592, dated November 7, 1871.

To all whom it may concern:

Be it known that I, EDWARD MERCIER, of Springfield, Hampden county, Commonwealth of Massachusetts, have invented an Improved Self-Operating Railroad Switch, of which the following is a specification:

My invention consists in an operating metallic frame attached to the sliding switch, and having one of its sides rising above and passing over one of the rails of the disconnected track at an acute angle, and sufficiently separated from the rail at the end in the direction of the approaching train to enable the flange of the first wheel to act as a wedge in separating it from the rail and in that action bringing the switch, to which the frame is attached, opposite the desired track. The frame is so formed that one side of it always rests over a rail of the disconnected track; and, in connection with the above, the device is shown for locking the switch when opposite either track, and for moving the switch when the train shall pass over it to either of the tracks. This consists of two rods running in a parallel direction and at right angles to a line through the horizontal center of the operating frame, one attached to the switch where the base of the frame is, and the other directly to the smaller end of the frame and running under the rails. The other ends of these rods are outside of the track, and are connected severally to a crank and eccentric upon the ends of a connecting-rod or shaft working in bearings. The one from the base of the frame is attached to or bears against an eccentric on a center. When the switch shall have completed its traverse to either track, the handle upon the rod projecting beyond the eccentric, by coming against the face of the tie, limits the revolution of the eccentric to one-half. Now, it is evident that no force brought against the switch could move it from the position it held when the eccentric was on a dead-point, so that it would be impossible for any jar or movement to start the switch when a weight is upon it going in either direction; but proceeding toward it from a disconnected track, the flange of the first approaching wheel moves the smaller end of the frame, and with it the rod attached thereto, which rod, by its crank connection, starts the shaft and eccentric in its half revolution, while the continued insertion of the flange of the wheel between the

frame and rail as a wedge completes the movement, and the engine passes onto the switch locked in position as a continuation of the traveled track.

In the drawing, Figure I is a plan view of the track with switch and frame in one position. Fig. II shows the same parts in another position. Fig. III is a view of the crank; Fig. IV, a view of the eccentric and connecting-rod; and Fig. V, a top view of the cover.

A is the metal operating frame, having its larger end *b* securely fastened to the switch D, and its sides *c d* (properly braced) swelled to pass over the rail and present an acute angle to the rail so covered, as seen in Figs. I and II. To the smaller end *g* of the frame is fastened the end of rod H, which is carried under the rails; and to the rail of the switch, opposite end *b* of the frame is secured the end of rod W. The rod H terminates in a fan-shaped crank, having a slot in it on the circumference of a circle, the center of which is the center of the shaft, to which it is keyed or otherwise fastened, the rod being connected to this fan F by a pin passing through the groove, so that the rod H and pin bear against either end of the slot to start the revolution of the shaft X and eccentric V, and after thus starting the crank has lost motion until the pin bears against the other end. The end of the rod W is slotted to pass over the eccentric V, and is confined to a horizontal movement by the cover *p*, under which it slides. The handle *m*, as before described, rests directly against the tie 4 and locks the switch in place. The eccentric, as shown in Fig. IV, is covered below as well as above, so as to be perfectly protected from dust, gravel, &c.

In this manner I construct a switch simple and sure in action, and one easily worked, and self-locking as well as self-operating.

What I claim as my invention, and desire to secure by Letters Patent, is—

In combination with the switch D, the metallic frame A, fan F, eccentric V, shaft X, and connecting-rods H and W, the parts being all constructed and arranged substantially as hereinbefore specified.

EDWARD MERCIER.

Witnesses:

EDWARD MORRIS,
L. COLNEY.

(120)