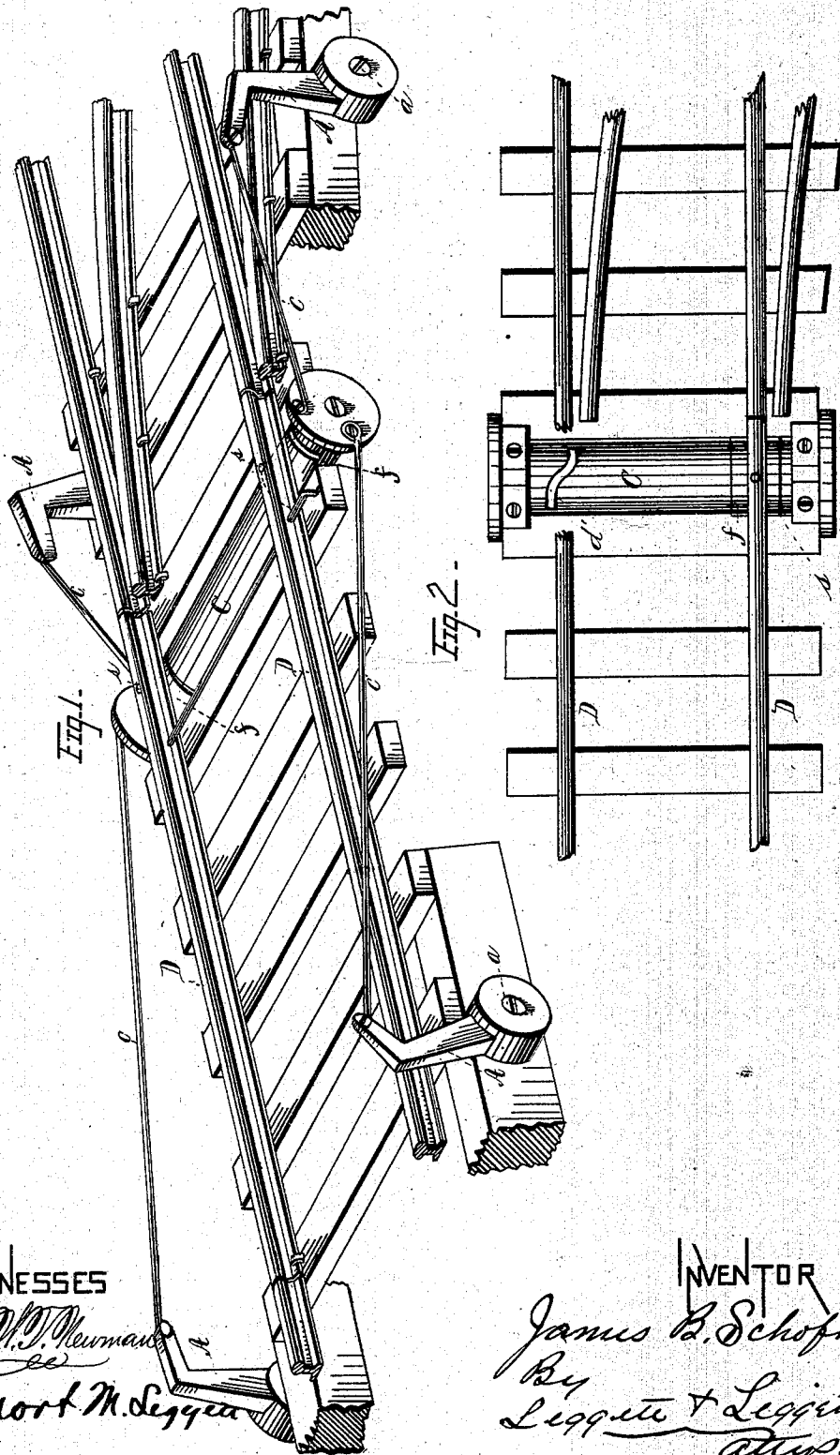


J. B. SCHOFIELD.
Railway-Switches.

No. 146,364.

Patented Jan. 13, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES B. SCHOFIELD, OF CALDWELL, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSHUA M. DAVIS AND DAVID H. SCHOFIELD, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **146,364**, dated January 13, 1874; application filed February 24, 1873.

To all whom it may concern:

Be it known that I, JAMES B. SCHOFIELD, of Caldwell, in the county of Noble and State of Ohio, have invented certain new and useful Improvements in Railroad-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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in self-acting railroad-switches.

In the drawings, Figure 1 exhibits my invention in perspective; and Fig. 2, a view in plan of the same, one rail being broken to show the operation of the prolonged cam-groove in the switch-cylinder.

My invention consists as follows: The bent arms *A A* are attached to the road-bed in a suitable manner, swinging from the pivots *a a*. From the extremities of the bent arms connecting-rods *c c* pass to the switch-cylinder *C*. This cylinder is placed beneath the swinging rails *D D*, and has cut in it the prolonged cam-grooves *d d*, in which operate the spuds *s s*, attached to the under surface of the swinging rails.

It will be seen that, when the cylinder *C* revolves, the swinging rails will be shifted by the operation of the eccentric groove upon the spuds *s s*.

The revolution of the switch-cylinder *C* is effected as follows: To the locomotive is attached a sliding bar, running in appropriate grooves and fastenings. Attached to this sliding bar is a rod operating it. The said rod is worked by a lever, which passes along the locomotive, and is manipulated by the engineer.

When approaching a switch, the engineer, by means of the lever-rod, throws out the sliding bar, so that its end projects from the side of the locomotive in such a way that, in passing the raised arm *A*, it depresses said arm, and, in so doing, operates the switch-cylinder *C*, through the connecting-rod *c*, and

switches the swinging rails *D D* to the desired position.

I design constructing a sliding rod for each side of the locomotive, or I will construct a single sliding rod that shall operate at either side.

It will be seen that whenever an arm, *A*, on one side of the track is raised, the one upon the opposite side is depressed, and the engineer can, at pleasure, depress the raised arm, and thus switch his train; or he can permit the sliding bar to be drawn in and pass the switch without operating it should such be his desire.

In order to protect against the introduction of snow, ice, dirt, or other objectionable matter within the eccentric grooves *d d*, I attach to the under surface of the swinging rails the shields *f f*, made of metal or other suitable material.

On the switch-cylinder *C*, it will be noticed that at each end of the cam-grooves *d d* I have prolonged the groove in a line at a right angle with the axis of the cylinder.

By this provision I accomplish two ends: First, the rails are held in position during the transit of the cars, whereas, otherwise, the force upon the rails might bear in the direction of the cam-groove, and the swinging rails be thus displaced; second, after the arms *A* have revolved the cylinder *C* to a sufficient degree to switch the swinging rails, the prolongations of the slots *d d* permit of a further revolution of the cylinder *C*, and therefore of a greater depression of the arms *A*; and, by this extra depression, the switch-bar *E* of the moving train can pass safely over the arms *A* without danger of collision.

In my invention, I have placed it always in the power of the engineer, or other person on the approaching train, to switch said train independently, and thus is secured not only a greater immunity against accident from the neglect or blunders of a switch-tender, but also an economy to the extent of said switch-tender's wages.

Having thus described my invention, what

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

The combination, substantially as herein described, in a self-acting railroad-switch, of the pivoted crank-arms *A*, connecting-rods *c*, cylinder *C*, with cam, prolonged cam-grooves *d* *d*, spuds *s s*, and shields *f*, all arranged and operating as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of February, 1873.

JAMES B. SCHOFIELD.

Witnesses:

HAMILTON WILEY,
J. D. WILEY.