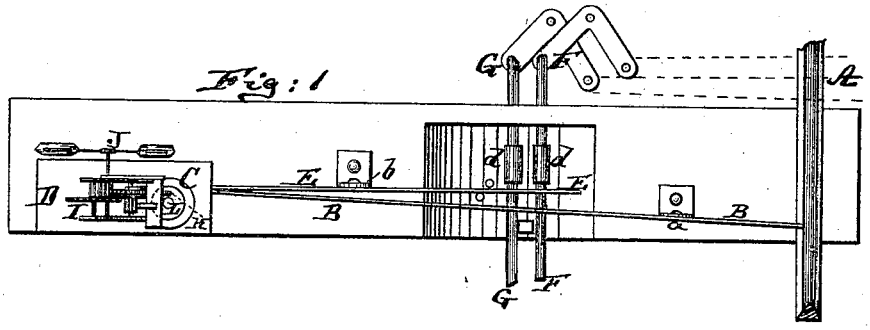
D. ROUSSEAU.

RAILROAD-SWITCH.

No. 186,626. Patented Jan. 23, 1877.

Fig: 1



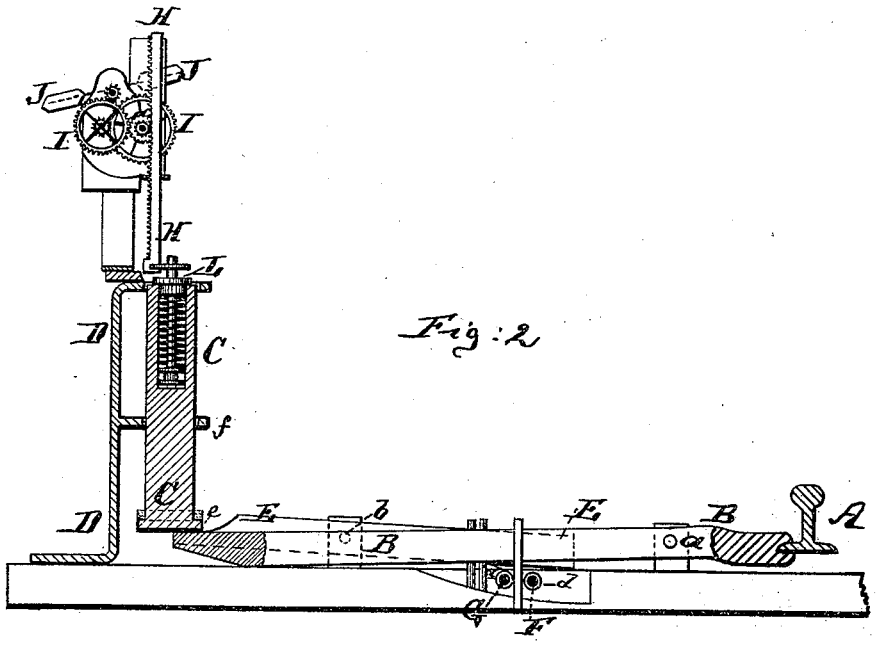
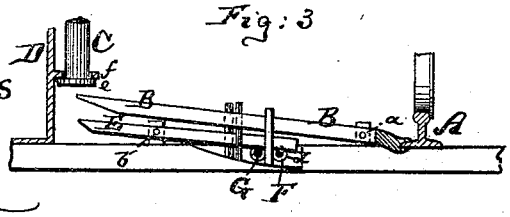


Fig: 2

Fig: 3



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID ROUSSEAU, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND WILLIAM C. SMITH, OF SAME PLACE.

IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. **186,626**, dated January 23, 1877; application filed December 26, 1876.

To all whom it may concern:

Be it known that I, DAVID ROUSSEAU, of the city of New York, county and State of New York, have invented an Improved Railway-Switch Lock, of which the following is a specification:

Figure 1 is a top view of my improved railway-switch lock; Fig. 2, a sectional side elevation of the same; Fig. 3, a detail side view, on a reduced scale, of part of the same.

Similar letters of reference indicate corresponding parts in all the figures.

The object of this invention is to produce means for locking the locking-bolt and moving device of a railway-switch, and for preventing the displacement of such switch at the time of the passage of a train over the same.

Switch-moving mechanism, even if provided with proper locking mechanism, does not prevent a careless switch-tender from unlocking and then moving a switch during the passage of a train over the same, and many trains have been wrecked and torn asunder by such displacement of a switch during its occupation.

Now, my invention seeks to lock the switch-lock automatically by the passing of the train, so that the switch-tender will not be able to unlock the switch, much less to move the same, while a train or car is on the switch.

My invention consists in uniting a deflecting switch-rail—by which I mean a switch-rail that is depressed by the weight of the car that passes over it—with a slide and with a locking-lever, all arranged so that the slide will be raised off the lever, releasing the same whenever the rail is depressed.

The invention also consists in further details of invention, hereinafter more fully described.

The letter A in the drawing represents a switch-rail so placed that it will be deflected or depressed by the weight of a car or train passing over it, and elevated to its normal position after such car or train has passed. B is a lever, pivoted at *a* to a suitable support, and connected with the deflecting-rail A by a forked end grasping the rail-flange, as shown in Fig. 2, or by other suitable means. The farther end of this lever is beneath a weighted slide, C, which is guided in a stationary frame, D. This slide, when the rail is not weighted down, is in its lowermost position, as in Fig. 2, and bears in this position upon one end of another lever, E, which is, at *b*, pivoted to a suitable support. The weighted other end of the lever E is, by the lowered slide C, held away from the rods F and G, by which the switch and switch-lock are moved, so as not to interfere with the free use of these rods, and with the free displacement of the switch, or unlocking of the same. As soon, however, as the rail A is depressed by a passing train or car, the farther end of the lever B is elevated, and the weighted slide C thereby raised, whereby the lever E is liberated and allowed to drop upon the rods F G, as shown in Fig. 3. Now, these rods have each a stop or shoulder, *d*, and as the lever E bears upon the rod and against the end of such shoulder, it prevents the longitudinal or other motion of such rods, and, consequently, also the moving or displacement of the switch, and even the unlocking of the same. Instead of causing the lever E to affect the rods F and G, which move and lock the switch, it may be caused to affect only the switch-moving rod F, or only the switch-locking mechanism G, with substantially the same effect, and may, in like manner, be used to prevent the displacement of a signal. It is evident that the end of the lever E which drops upon the rods F G, or either of them, is heavier than that end which enters below the slide C, or, if not heavier, that it must be provided with a weight or spring to cause it to bear upon said rod or rods. As soon as the rail is relieved from the passing train or car it resumes its normal position, and thereby vibrates the lever B, so as to allow the weight C to drop, and to bear upon the lever E and raise it off the rods F G. In order to prevent the drop C from descending with rapidity, and to permit the switch to be held locked within a reasonable time after the train has left the switch, I provide the slide C with a projecting rack, H, which engages into a train of toothed wheels, I, having a suitable fly, J, so that the weight C will be retarded in its down-

ward motion by said train of wheels and fly J, which it must rotate during its descent; but instead of the train of wheels herein shown any other suitable retarding mechanism may be employed, such as an air-cushion, a system of pulley-blocks united by a rope passing around them, or a spring, to expand and contract during the descent of the weight, or other suitable device. The lower part of the weight C is provided with a projecting flange, *e*, which, when the weight is raised to its greatest height, may strike a plate, *f*, of the guide D. In order to counteract any rebound that may be occasioned by a too violent striking of the flange *e* against the plate *f*, I have placed into a cavity of the weight C a spring-plunger, L, with which the rack H is directly connected, and which, during any rebound, would be retained in its upper position by the rack and train of wheels, while the weight itself might harmlessly descend, contracting the spring of the plunger in so doing; but, instead of this spring-plunger, or in addition thereto, a suitable elastic cushion may be placed upon the flange *e*, with substantially the like effect. Any other rail than the switch-rail may be used with this apparatus.

I claim as my invention—

1. The combination of the lever B, slide C, and locking-lever E, all arranged to operate substantially as specified.

2. The combination of the locking-lever E, which is operated by the deflection of the rail A, with the switch locking or moving mechanism F G, having the stop or shoulder *d*, substantially as described.

3. In combination with the switch-locking lever E and its actuating-weight C, the retarding mechanism H I J, substantially as and for the purpose herein shown and described.

4. The spring-plunger L, combined with the retarding-blade H, and with the sliding weight C of the switch-locking mechanism, substantially as specified.

5. The combination of the deflecting switch-rail A with the lever B, and with mechanism for locking the switch-locking lever, substantially as specified.

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Witnesses:
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