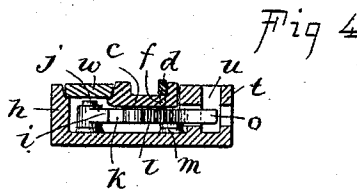
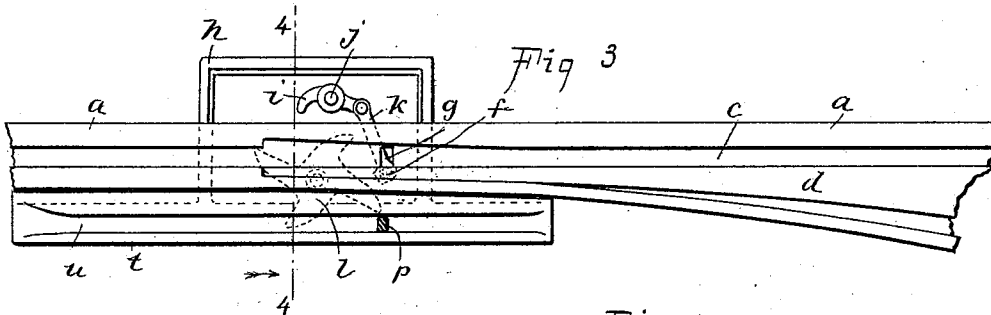
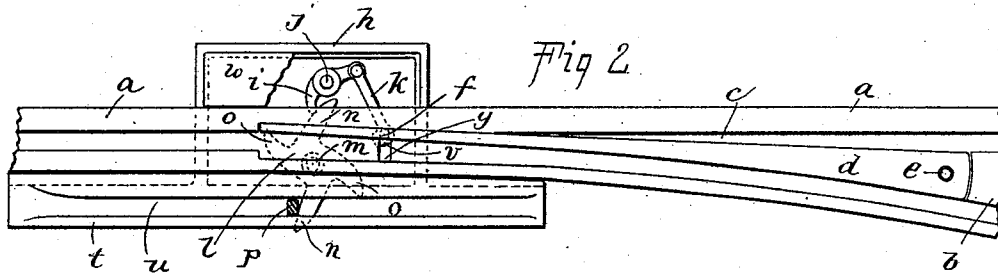
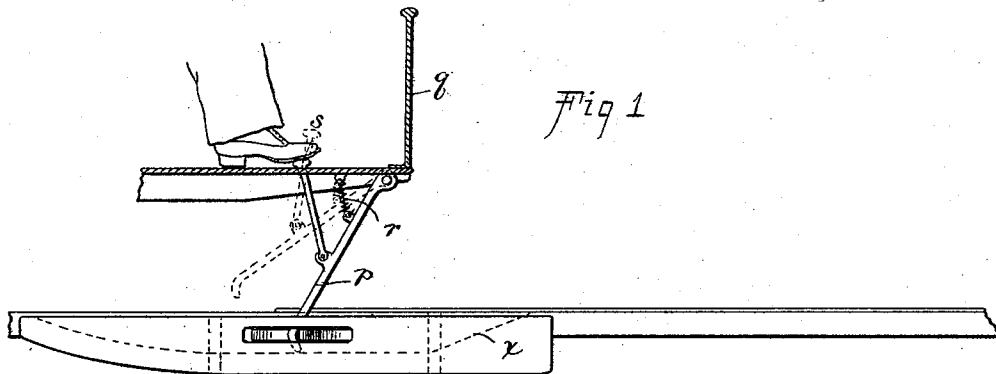


(No Model.)

W. J. WARD.
RAILWAY SWITCH MECHANISM.

No. 498,337.

Patented May 30, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. WARD, OF BROOKLYN, NEW YORK.

RAILWAY SWITCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 498,337, dated May 30, 1893.

Application filed March 6, 1893. Serial No. 464,757. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. WARD, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Railway Switch Mechanism, of which the following is a specification.

This invention relates to railway switch mechanism, the main object of the invention being to provide improved mechanism whereby a switch rail or tongue can be moved when desired by an arm or device projecting down from a car traveling along the track, and the invention consists in the several combinations hereinafter more fully described and set forth in the claims, for accomplishing said object.

In the accompanying drawings Figure 1 is an elevation, partly in section, of the mechanism. Figs. 2 and 3 are plan views of the mechanism in the roadbed in two different positions, and Fig. 4 is a section on line 4—4 of Fig. 3, looking in the direction of the arrow.

a is one of the rails of a street railway or other track, and *b* is a rail of a branch track.

c is a casting forming a bed for the switch rail or tongue *d*, which is pivoted at *e*, and which has a pin or extension *f*, extending down through a slot *g* in the casting *c*, as indicated in Fig. 2, said slot being so arranged that the switch tongue can move to its position in line with the straight rail as indicated in Fig. 3, or to its opposite position, to direct the car on the track to the branch, as indicated in Fig. 2.

h is a suitable box below the rails and switch bed in which is pivoted a lever *i* on a bearing *j*.

k is a link connecting one end of said pivoted lever with the pin or projection *f*.

l is a wheel or body adapted to rotate on a suitable bearing *m* and having several teeth or projections *n o*, alternately long and short. All of these teeth are long enough to project into or across the path of an arm *p*, carried by the car *q* adapted to travel along the track, and which arm is preferably normally pulled up by spring *r*, but which may be pressed down into the position shown in Fig. 1 by the foot of an operator on the foot-piece *s*. At one side of the bed or casting and the rail *a* is placed a body *t* having a longitudinal groove *u* into which said arm *p* can extend and travel.

The arms *n, o* extend one after the other across said groove in the manner indicated in Figs. 2, 3 and 4. The long teeth of the wheel *l* are sufficiently long to strike the end of link *k* at *v* when the wheel is turned, moving the switch tongue and lever *i* from the position of Fig. 3 to the position of Fig. 2, and also, by a subsequent movement, striking the end of lever *i* at the left of its pivot, thereby moving the switch tongue in the opposite direction. The shorter teeth, however, of the wheel, while long enough to extend into the groove *u* to be struck by the arm *p*, are not long enough to strike the point *v* and the lever *i*.

w is a cover, which can be removed to give access to the lever *i*.

The operation of the device described is as follows: Supposing the switch tongue to be in the position shown in Fig. 2, and a car to be moving on the track from left to right—if the car is to turn onto the branch the switch operating arm *p* is not depressed, since the switch tongue is already in the desired position, but if the car is to remain on the straight track the arm *p* is depressed so that it will enter into the groove *u*, and as it moves along will turn the wheel *l*, causing one of its long arms *n* to strike the lever *i*, moving the switch tongue *d* to the position shown in Fig. 3. When the wheel *l* has made a movement of ninety degrees the arm *p* passes the teeth on which it is operating, the incline *x*, pressing up the arm *p*, and the foot of the operator, unless the latter has previously removed his foot, leaving the apparatus in condition for a subsequent use. The next car which comes along will have its arm *p*, depressed or not, according to the track on which it is to travel.

The main feature of the improvement, it will be seen from the above description, resides in the rotatable wheel *l* and accompanying device for opening and then closing a switch by successive movements, as described. Evidently the form of the wheel, and of the lever *i*, can be changed considerably without departing from my invention, and in some cases the link *k* will not be essential.

What I claim is—

1. The combination, with a switch tongue adapted to be used in connection with the rails of a street-railway, or other track, of a

toothed wheel or body supported on a suitable bearing, alternate teeth on said wheel being respectively long and short, a part connected to said switch tongue, against which the long
5 teeth of the wheel are adapted to strike in succession as the wheel is turned, step by step, to move the switch tongue in one direction, and a pivoted lever *i* also connected to the switch tongue against which the same long
10 teeth are adapted to strike on alternate movements of the wheel to reset the tongue to its original position, the short teeth of the wheel being too short to reach the part connected to the switch rail and said pivoted lever, but
15 long enough to extend into the path of an operating arm, substantially as described.

2. The combination of a switch tongue, a wheel *l* having long teeth *n*, and shorter alternating teeth *o*, the pivoted lever *i*, and the link *k* connecting said lever with the switch
20 tongue, the long teeth, when the wheel or body is moved being adapted to strike a part connected to the switch tongue to move it in one direction, and by a subsequent movement striking the pivoted lever on the opposite
25 side of its pivot from the link *k*, to move the switch back, substantially as described.

WILLIAM J. WARD.

Witnesses:

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