

LOCKING MECHANISM FOR RAILWAY SWITCHES.

1,008,590.

FIG. 2

WITNESSES

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UNITED STATES PATENT OFFICE.

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LOCKING MECHANISM FOR RAILWAY-SWITCHES.

1,008,590.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK H. ELLIS, a citizen of the United States, residing in Somerville, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Locking Mechanism for Railway-Switches, of which the following is a specification, reference being had to the drawings accompanying the same and forming a part thereof.

My invention relates to a device for locking the point of a switch in its running positions with sufficient resistance to prevent its accidental displacement by the wheels of a car running over it.

The objects of my invention are to produce a locking device for switches, simple in construction; that can be easily assembled and adjusted; that may be mounted in a watertight box designed to be filled with lubricating oil; and that can be attached to the tongue of a switch without any cutting, drilling or fitting of the tongue.

In the drawings accompanying this specification and forming a part thereof—Figure 1 represents a sectional elevation of my device showing the position of the switch tongue and one of the adjusting tread surfaces; Fig. 2 is a sectional plan through line 2—2 Fig. 1; and Fig. 3 is a sectional elevation taken through line 3—3 Fig. 1.

In the drawings, 1 is the box in which the locking mechanism is contained and which is provided with a cover-plate 2 that can be secured to the top of the box and fitted to be water and dust-tight. The rod 3 of the locking mechanism passes through a stuffing-box in the side of the box 1, having a gland 4 threaded into one end and a stuffing-gland 5 threaded into the other end in such manner that the packing 6, of any desired material to form an oil and water-tight joint, may be compressed between the glands 4 and 5. The locking-mechanism is comprised of the lever 7 which has a down-turned point 8 fulcrumed in a groove 9 formed in the bottom of the box 1. The lever 7 is provided with an elongated hole 10 which has a round pin 11 extending through it, upon which is mounted a roll 12. The lever is provided with a boss 13 in which a screw-threaded plug 14 is mounted, the lower end of the plug 14 having a boss 15 on it adapted to fit into the upper end of a spring 16, the lower

end of the spring 16 being mounted on a round projection 17. The boss 15 and the projection 17 are designed to keep the spring 16 in alinement. The threaded portion of the plug 14 is mounted in a threaded bearing in the end 13 of the lever 7 and can be adjusted up and down by means of a wrench fitted upon the head 18 to turn it. By screwing said screw 14 up or down it increases or decreases the tension on the spring 16.

The tongue operating mechanism consists of the rod 3 provided with the forked portion 19 which is formed to fit upon the lower part of the switch-tongue 20. The other end is threaded to receive the nuts 21 and 22. The threaded part of the rod 3 passes through a hole 23 in the rack 24 for the purpose of adjustment and so that the nuts 21 and 22 may be tightened on each side of the hole to firmly hold the rod 3 in adjustment with relation to the rack 24. The rack 24 has teeth 25 on its lower portion which enmesh with the teeth on the portion 26 of the segment 27. Said segment 27 is mounted in the box 1 upon the pivot 28 which is secured in its walls. The segment 27 is provided with a cam point 29 which contacts with the roll 12. The spring 16 pressing upwardly on the end of the lever presses the roll 12 with a very considerable force against the cam point 29 to resist the rotative movement of the segment upon the pivot 28, and when the point 29 passes by a line drawn from the center of the pivot 28 to the center of the pivot 11 the roll 12 moves up on the cam point 29, as indicated in dotted lines, thus locking the segment 27 against rotative movement with greater or less resistance, depending upon the tension of the spring 16; yet at the same time it permits a rotative movement of the segment 27 so as to position the switch tongue 20 to shunt a car from one track to another.

What I claim is—

1. In a switch tongue locking mechanism, a tongue; a rod engaging said tongue; a rack mounted on said rod; a cam having a segment of a gear formed thereon enmeshing with said rack; and a spring operated lever having means mounted thereon for retaining the cam in its operative position.

2. In a switch tongue locking mechanism, a tongue; a transversely movable rod engaging said tongue; a rack; a segment of a

gear engaging said rack; a cam formed on said gear; and means for controlling the movement of said cam member.

3. In a switch tongue locking mechanism, 5
a tongue having a lateral movement; a rod engaging said tongue; a section of a rack having gear teeth therein secured to said rod; a bearing for said rod; a cam having a segment of a gear formed thereon engaging the rack on said rod; and a spring controlled lever having a roll mounted therein in contact with the cam to control its movement. 10

4. In a switch tongue retaining mechanism, a tongue; a rod movable transversely of the tongue and engaging it; a water and dust-tight bearing for said rod; a water and dust-tight box in which said bearing is mounted; a rack secured to the rod; guiding means for said rack; a segment of a gear pivoted in the box engaging the teeth on said rack; a cam on said segment; a lever mounted in said box; a roll mounted in said 15
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lever engaging a cam surface on said segment of a gear; a spring operating upon said lever; and means for adjusting the tension of said spring. 25

5. In a switch tongue retaining mechanism, the combination of a tongue; a rod engaging the tongue; a rack adjustably secured to said rod; a guiding roll for said rack; a segment of a gear pivoted in a box; said box; a cam upon said gear; a lever mounted in said box; a roll in said lever in contact with the cam of said segment of a gear; a spring acting to press said roll against said gear; and means for adjusting the tension on said spring. 30
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In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses, this the 4th day of Febr'y, A. D. 1909. 40

FRANK H. ELLIS.

Witnesses:

A. H. SPENCER,
H. M. KELSO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."