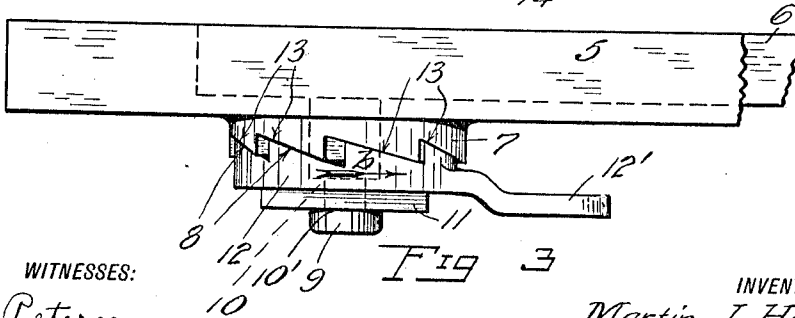
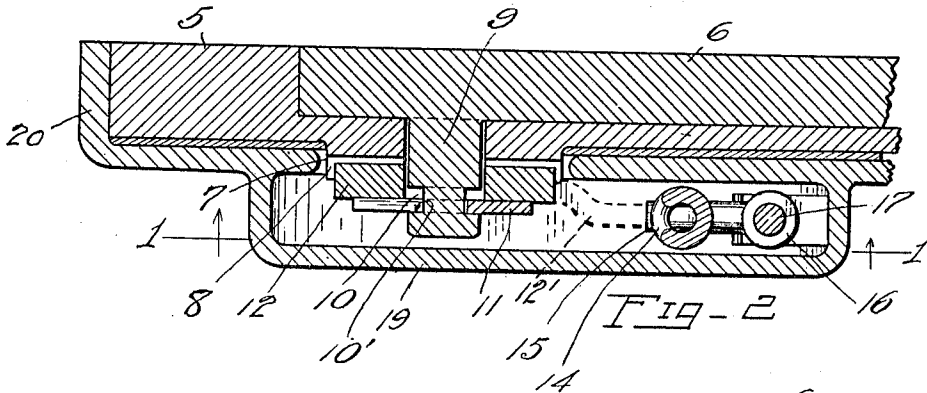
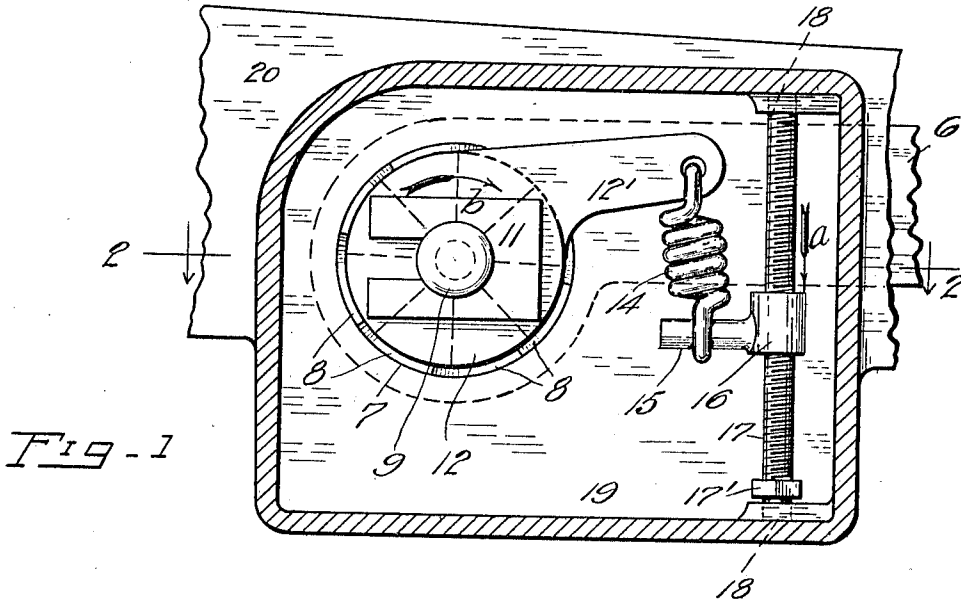


M. J. HENEHAN.
RAILWAY TONGUE SWITCH.
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1,048,452.

Patented Dec. 24, 1912.



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MARTIN J. HENEHAN, OF SEATTLE, WASHINGTON.

RAILWAY TONGUE-SWITCH.

1,048,452.

Specification of Letters Patent.

Patented Dec. 24, 1912.

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To all whom it may concern:

Be it known that I, MARTIN J. HENEHAN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Railway Tongue-Switches, of which the following is a specification.

This invention relates to railway switch tongues, and, more particularly, to the manner or means for connecting the pivotal pin thereof to the tongue base. Its object is to afford improved connections of this type and, while relatively simple in construction, shall be superior in maintaining the heel of a tongue against looseness on its seat and thus increase the general efficiency of a switch.

With these and other ends in view, the invention consists in the novel construction, adaptation and combination of elements, as will be hereinafter described and illustrated in the accompanying drawings.

Of said drawings, Figure 1 is a horizontal section through 1—1 of Fig. 2 and showing the switch-tongue adjustment and wear compensating devices, as seen from below. Fig. 2 is a vertical longitudinal section through 2—2 of Fig. 1. Fig. 3 is a side elevation, showing the tongue, and tongue-pin, and the adjusting devices employed therewith.

In the embodiment shown, the reference numeral 5 designates the body member of a switch and 6 is the switch tongue which is seated in a recess thereof, as customary. Depending from the body 5 and desirably made integral therewith is a crown cam element 7 hereinafter designated as the stationary cam, composed of a plurality of teeth having inclined underside faces 8.

The pivotal pin 9 for the tongue is, by preference, made integral therewith and extends axially through said cam. At a distance below the cam, said pin is provided with a peripheral groove 10 to accommodate a slotted plate or collar 11. Intermediate this collar and the stationary cam 7 is a rotatable crown-cam 12 through which the pin 9 extends and which is provided with teeth having inclined upper faces 13 which, as shown in Fig. 3, are arranged to slope corresponding to the inclined faces 8 of the aforesaid stationary cam in order to furnish relatively large bearing surfaces between the two cams. The cam 12 is provided with an arm 12' which is connected by a spring 14

with a stud 15 formed on a screw nut 16, as shown in Figs. 1 and 2. Extending through this nut is a horizontally arranged screw bolt 17 having its ends journaled in sockets provided in blocks 18 of a suitable frame. One of said sockets is in the form of a horizontal slot whereby an end of the screw bolt 17 may be introduced after the other end of the bolt has been inserted in the cylindrical socket provided in the block at the opposite side of the frame. By preference, such frame is afforded by a water-tight casing 19 which extends downwardly from and constitutes a part of the base 20 in which said body member is seated. A polygonal portion 17' is provided on said bolt to receive a wrench for turning the same to effect the axial movement of said nut. For convenience in manipulating the wrench which is employed for turning said screw bolt, the top of the casing above the polygonal portion of the screw bolt has generally been made removable.

With the various parts of the switch assembled in the positions in which they are shown in the drawings, by properly rotating the screw bolt 17 the nut 16 is affected to draw the same in the direction indicated by arrow *a* in Fig. 1. A strain is thereby exerted upon the spring connection 14 tending to extend the latter which, in its reaction, subjects the arm 12' to a pull acting to rotate the cam 12 in the direction indicated by arrow *b*, Figs. 1 and 3. The result of such turning of the cam 12 is to have its cam faces 13 cooperate with the opposing cam faces 8 of the stationary cam 7 to urge the rotatable cam downwardly against the collar 11; but as the collar engages the pin 9 by its shoulder 10' at the bottom of the groove 10, the pin is accordingly pushed downwardly and carries the heel of the tongue 6 firmly against its seat in the body 5. After such seating of the tongue is effected, the spring asserts its power to automatically move the cam 12 to take up any slack which, in the absence of the spring, would occur between the tongue and its seat from the wear of these switch parts.

By adjusting the nut the tension of the spring may be regulated.

What I claim, is—

1. In a tongue switch, the combination of the body provided upon its underside with a cam surface, a switch tongue movable upon the body, a pin extending downwardly

from the tongue and provided near its lower end with a shoulder, a cam supported by said shoulder and rotatable about the axis of the pin, said cam being provided with a cam surface at its upper end to contact with the cam surface of said body, and means whereby said cam is actuated to become operative through the agency of the pin to take up any looseness occurring between the tongue heel and the body.

2. In a tongue switch, the combination of the body, a switch tongue movable thereon, a pin extending downwardly from the heel of said tongue and through the body, of rotatable means supported by the pin and operating against the underside of said body for exercising a downward thrust against the pin whereby said tongue is forcibly held against the body.

3. In a tongue-switch, the combination of the body provided with an underside cam surface, a switch tongue mounted on the body, a pin for the tongue and extending downwardly below the body, and a rotatable cam coöperable with the cam surface of said body and acting through the medium of said pin whereby the switch tongue is adjustably held against said base.

4. In a tongue switch, the combination of the switch tongue, a body providing a seat for the tongue, a pin depending from the tongue and through an opening provided in said body, a collar provided on the lower end of the pin, a cam arranged to rotate about the axis of said pin and positioned between the body and said collar, and adjusting means for rendering the cam operative.

5. In a tongue switch, the combination of the switch tongue, a body providing a seat for the tongue, a pin depending from the tongue and through an opening provided in said body, a collar provided on the lower end of the pin, a cam arranged to rotate about the axis of said pin and positioned between the body and said collar, an arm provided for said cam, and adjusting and securing means connected with said arm for rendering the cam operative.

6. In a tongue switch, the combination of the switch tongue, a body providing a seat for said tongue, a pin depending from the tongue, a removable collar secured to the lower end of the pin, a cam rotatable about said pin and interposed between said body and the collar, an arm extending from the cam, a spring attached from one of its ends to said arm, a nut connected to the other end of said spring, and an adjusting screw for the nut.

7. In a tongue switch, the combination of the switch tongue, a body providing a seat for said tongue, a removable collar secured to the lower end of the pin, a cam rotatable about said pin and interposed between said body and the collar, an arm extending from the cam, a spring attached to said arm, and means for adjusting said spring.

Signed at Seattle, Wash., this 29th day of December, 1911.

MARTIN J. HENEHAN.

Witnesses:

HORACE BARNES,
E. PETERSON.

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