(No Model.) 2 Sheets—Sheet 1.

H. O'SHEA.

TONGUE SWITCH.

No. 530,201. Patented Dec. 4, 1894.

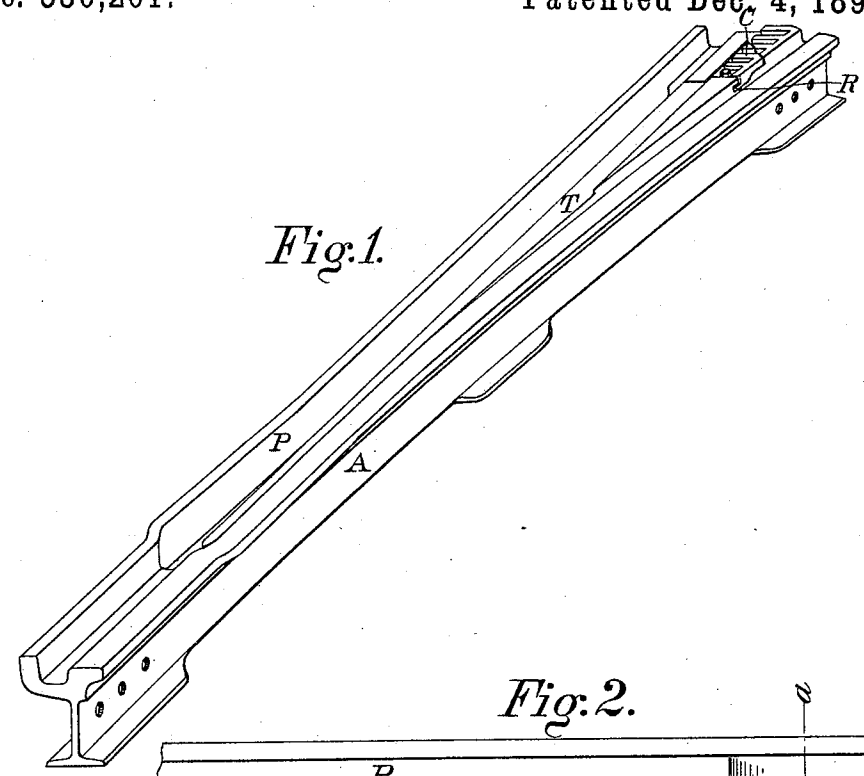
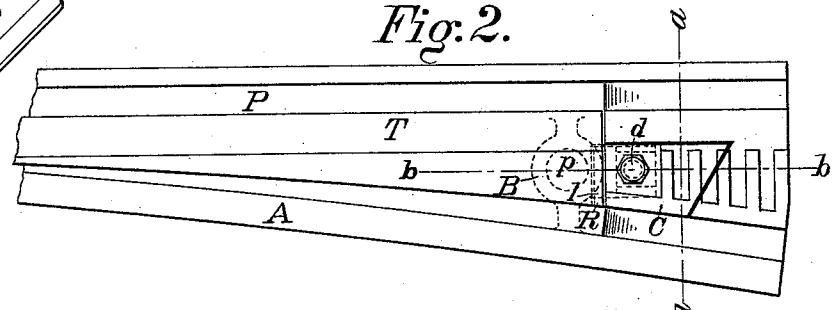


Fig. 1.

Fig. 2.



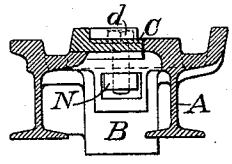


Fig. 3.

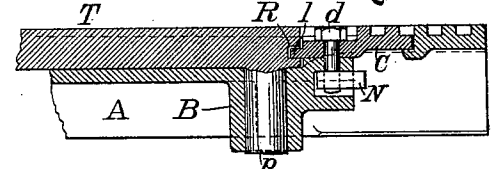


Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

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TONGUE SWITCH.

No. 530,201. Patented Dec. 4, 1894.

Fig. 5

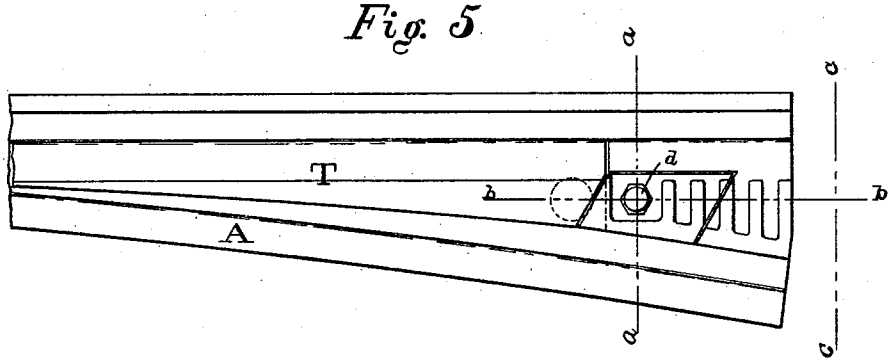


Fig. 6

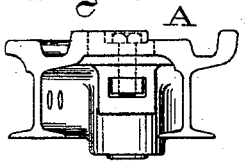


Fig. 7

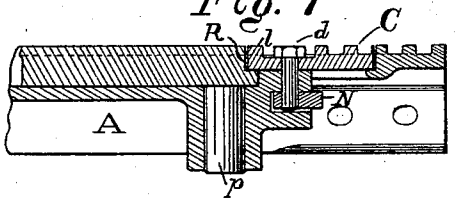


Fig. 8

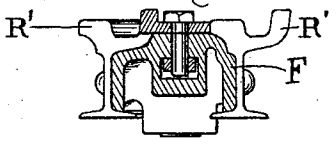


Fig. 9

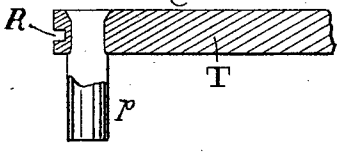
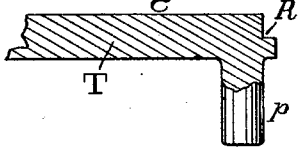


Fig. 10



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UNITED STATES PATENT OFFICE.

HENRY O'SHEA, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE JOHNSON COMPANY, OF SAME PLACE.

TONGUE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 530,201, dated December 4, 1894.

Application filed May 11, 1893. Serial No. 473,809. (No model.)

To all whom it may concern:

Be it known that I, HENRY O'SHEA, a citizen of the United States, residing at Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Tongue-Switches, of which the following is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to that form of switch which has a movable tongue or point hinged upon a pin near one end. In switches of this character the dirt about the tongue has a tendency to accumulate at the point of least motion which is near the pin and at this point to gradually lift the tongue. As the dirt becomes packed and more works in this lifting power becomes very considerable. The customary method of securing the tongue against this action has been by providing some device at the bottom end of the pin as a clamp, key, nut or similar means by which the pin was prevented from rising. The objection to this method is that when it becomes necessary to remove the tongue for any reason the paving and roadbed alongside the switch must be removed and perhaps the switch piece taken up.

My invention has for its object to provide a means for securing the tongue in place so as to prevent this lifting while at the same time permitting the easy removal of it at any time without taking the switch up from the track or disturbing the paving or road bed and is specially adapted to that type of switch in which the tongue is rigidly secured to the pin upon which it swings.

Referring to the drawings in which the same letter denotes the same part, Figure 1 represents a switch of the type described embodying my invention. Fig. 2 is a top view of the head end of the same. Fig. 3 is a section on line *a*—*a* and Fig. 4 is a section on line *b*—*b*. Fig. 5 is a top view of a switch similar to Fig. 2 but having different style of plate C. Fig. 6 is an end view of the switch from the line *c*—*c*. Fig. 7 is a vertical section on line *b*—*b*. Fig. 8 shows a section on line *a*—*a* of a switch composed of rolled steel rails R′ R′. Figs. 9 and 10 illustrate methods of securing the pivot pin to the tongue, Fig. 9 showing the pin pivoted in the tongue while Fig. 10 shows the tongue and pin integral. These last two figures also illustrate different forms of recess R.

The body of the switch piece is here shown cast in one integral piece A having the pocket P for the reception of the movable tongue T. To said tongue is secured at one end the pin *p* upon which it turns, the boss B furnishing a bearing for it. The end of the tongue is here shown having a flat end but of course any other suitable shape may be substituted therefor. The end of the tongue has formed in it the recess shown at R Figs. 4 and 7 into which enters the projection *l* formed on plate C. This plate C is loose and separate from the body of the switch piece and lies in a recess formed therein. To secure it in place is provided the bolt *d* having a head on top and entering the nut N which is inserted in a pocket formed for it in the boss B. The removal of plate C provides an aperture through which the nut N may be inserted in place. The bearing of the holding down plate is such that a tightening down of the bolt causes the plate to bear upon the underlapping end of the tongue and thus as the moving portions wear an adjustable means is provided of keeping the tongue down to its proper place from the street surface without taking up the surrounding pavement. This plate does not extend entirely across that portion of the switch frame directly behind the tongue and lying between the two track grooves. A portion of this part of the frame, viz., that part upon which the letter *d* is placed in Figs. 2 and 5, affords a track surface upon which the car wheel rolls, and this should be as firm and solid as possible. By track surface I mean a surface performing the same function as the head of the rail, that is, a surface which supports the tread of the wheel as it rolls along the track. Were the plate C to lie here so that the wheel traveled over it, the action of the wheel would tend to loosen and wear and so greatly destroy the efficiency of the plate. I therefore construct the plate so that it only occupies a portion of the place behind the tongue, and I form

the track surface upon the body of the switch. The wheel thus travels only upon the tongue and the main body of the switch.

The method of applying this device is as follows: The tongue T having been placed in position and the nut N being in its pocket the plate C is put in place with the lug *l* entering the recess R in the tongue, the bolt *d* is inserted in nut N and the whole clamped together. Instead of the lug *l* entering a recess as shown in Fig. 4, the metal of the tongue shown above the recess might be removed and the full thickness of the plate C extended over the portion of the tongue extending beneath the plate, Fig. 7, or it might be otherwise constructed, the essential feature being to have a portion of the plate C extend over a portion of tongue T so that it shall exert a clamping down action thereon. While the drawings show the switch piece made in one integral piece it will be seen that it might be constructed of rails of rolled steel cut and fitted together without departing from my invention. Fig. 8 shows such construction, R', R' being the rolled rails and F a cast metal chock or filler having the boss B for the tongue pin and adapted to support the plate C. The rails R' R' are riveted or similarly secured to this chock F as shown.

Having thus fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a railway tongue switch in combination with the main frame of the switch, a pivoted tongue having a track surface thereupon adapted to support the car wheel; a track surface formed on the frame of the switch and abutting the pivoted end of the tongue and forming a continuation of the surface thereupon, and a holding-down plate engaging the pivoted end of the tongue and lying in a pocket adjacent to the aforesaid track surface upon the switch frame, said plate being secured to the frame of the switch.

2. In a railway tongue switch, a switch frame having a pocket; a tongue pivoted in said pocket, said tongue having upon it a track surface; a track surface formed upon the switch frame, abutting and forming a continuation of that upon the tongue so that a car wheel may pass directly from one to the other, and a plate adapted to engage and hold down the pivoted end of the tongue, said plate being secured to the frame of the switch.

3. In a railway tongue switch, in combination with the frame of the switch, a tongue pivoted therein; a holding-down plate overlapping the pivoted end of the tongue; a socket in the frame; a nut in the socket, and a bolt passing through the holding-down plate, engaging the nut and adapted to secure the plate in place.

4. In a railway tongue switch, in combination with the frame of the switch, a tongue pivoted in said frame; a track surface upon the tongue throughout its length; a recess in the pivoted end adjacent to, but not extending into the track surface; a continuation of said track surface on the frame of the switch and abutting the tongue, and a plate entering the recess in the tongue and lying adjacent to the track surface on the frame, said plate being secured to the frame by a bolt passing through the plate and the frame.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY O'SHEA.

Witnesses:
RICHARD F. GEORGE,
EDWARD OTT.