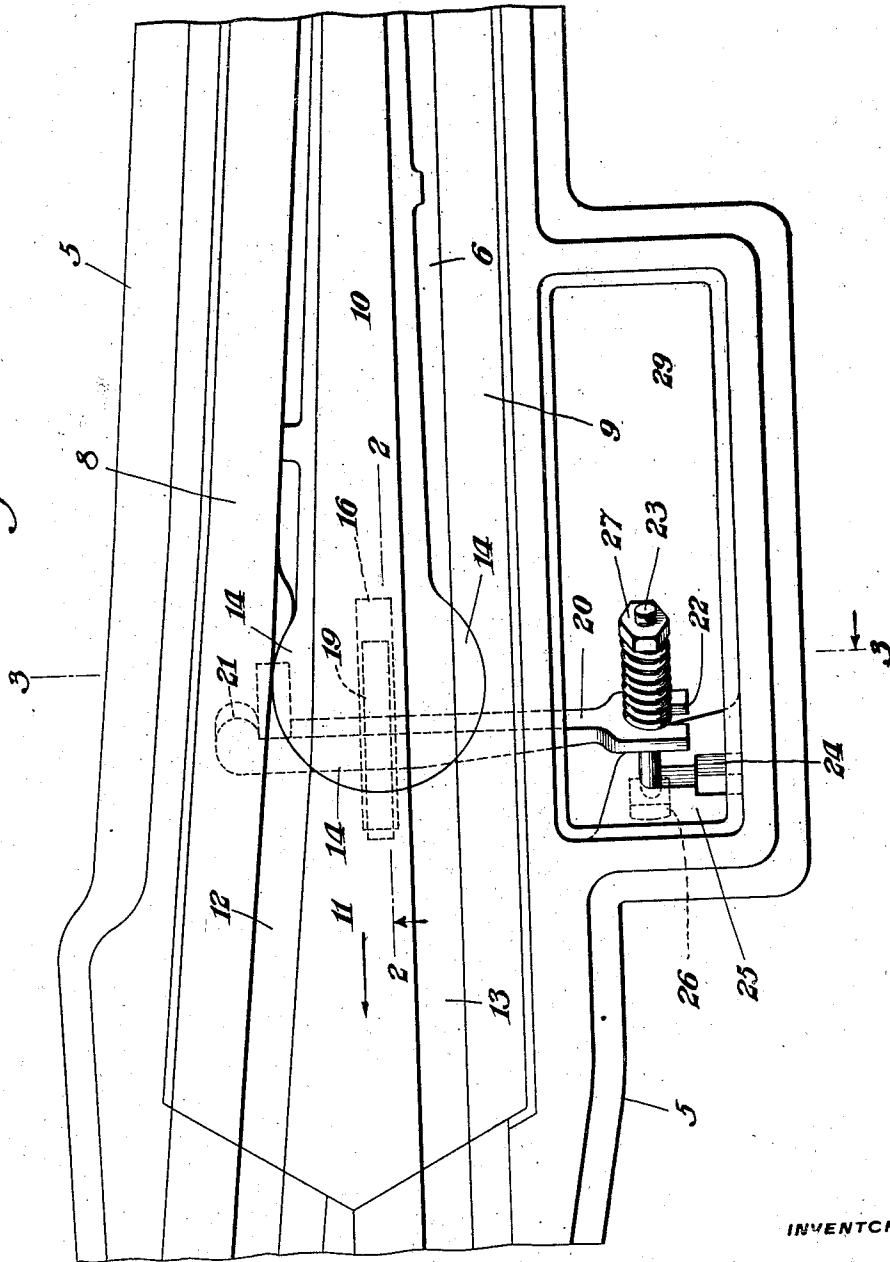


C. A. LANGDON.
RAILWAY SWITCH.
APPLICATION FILED MAY 11, 1912.

Patented Jan. 7, 1913.
2 SHEETS-SHEET 1.

1,049,736.

Fig. 1.



INVENTOR

Claude A. Langdon,

BY

A. V. Jones
ATTORNEY

WITNESSES

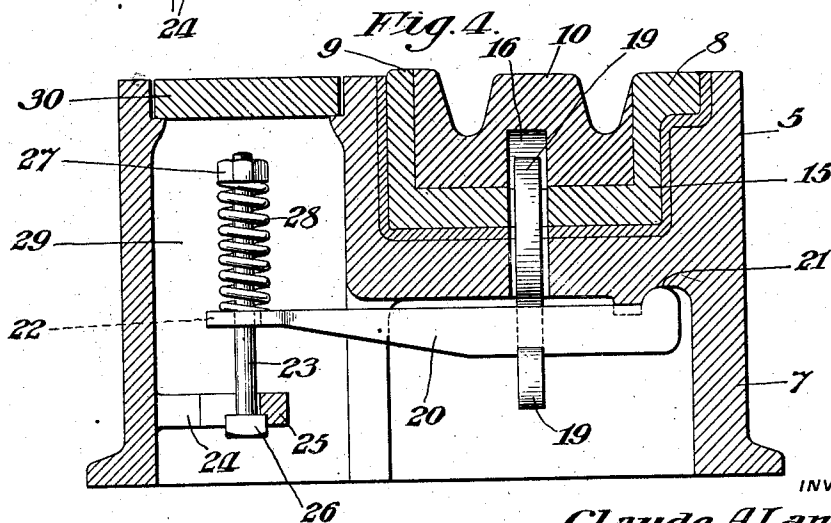
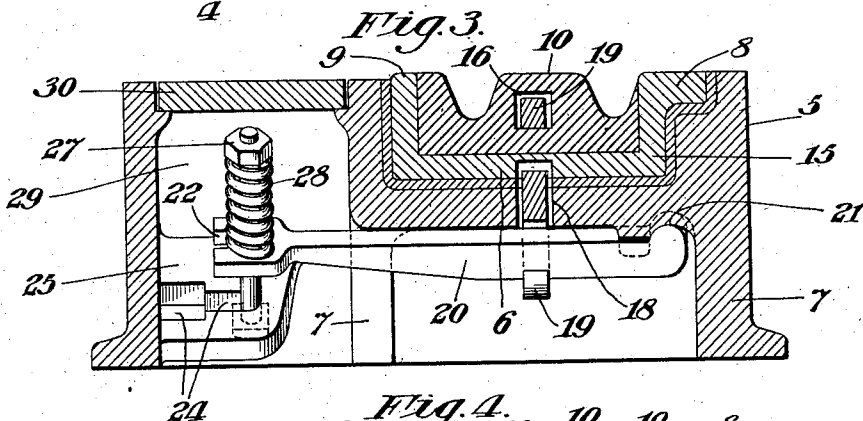
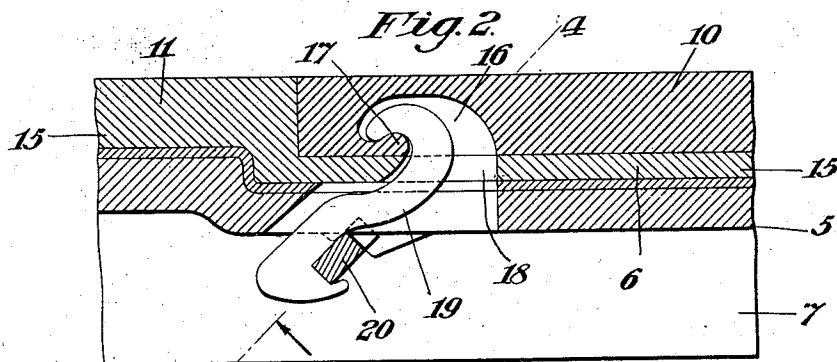
R. Schleicher
G. P. Sharkey

C. A. LANGDON.
RAILWAY SWITCH.
APPLICATION FILED MAY 11, 1912.

1,049,736.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 2.



INVENTOR

Claude A. Langdon.

BY

A. V. Tracy
ATTORNEY

WITNESSES

R. Schleicher.
A. P. Sharkey.

UNITED STATES PATENT OFFICE

CLAUDE A. LANGDON, OF HARRISBURG, PENNSYLVANIA.

RAILWAY-SWITCH.

1,049,736.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed May 11, 1912. Serial No. 696,586.

To all whom it may concern:

Be it known that I, CLAUDE A. LANGDON, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to railway switches of that class wherein a switch tongue is mounted to move laterally upon a floor portion of a frame structure in which grooves are formed to receive the flanges of wheels and guide them to and from the tongue, and wherein the heel end of the switch tongue abuts against a tread portion rising from the floor portion on which the tongue is mounted. In switches of this class it is desirable to maintain the top of the heel end of the tongue in or near the horizontal plane of the top of the tread portion against which the heel of the tongue abuts, and it is also desirable to maintain a tight joint between the heel end of the tongue and the tread portion against which it abuts, in order that wheels may be jarred as little as possible in passing over the switch, and in order that the hammer-like action of wheels upon parts of the switch structure may be minimized. It has been found difficult to maintain the parts in this desirable condition owing to the wear between the parts, the wear being greatly increased by street dirt finding its way between the bottom of the heel end of the switch tongue and the floor portion supporting the same and owing to street dirt finding its way between the heel end of the tongue and the tread portion against which it abuts.

The object of my invention is to overcome this difficulty by the provision of a novel, simple and efficient means for maintaining the bottom of the heel end of the tongue in close contact with the floor portion upon which it rests and for maintaining the heel end of the tongue in close contact with the tread portion against which it abuts.

A further object of my invention is to construct the said means so that the part engaging the switch tongue will exert directly against the tongue a combined downward and rearward pressure acting to hold it down upon the floor portion and also acting to hold the heel end of the tongue back against the abutting tread portion.

A further object of my invention is to construct the said means so that it will auto-

matically take up any wear that may occur between the tongue and the floor portion and between the heel end of the tongue and the abutting tread portion.

A further object of my invention is to construct the said means so that the part engaging the tongue will engage it on the line of the axis of the pivot on which the tongue is moved laterally to minimize the wear between the engaging part and the tongue; and a further object of my invention is to construct the said means so that it will not be necessary for any integral part of the switch tongue to project below its bottom face resting on the floor portion to permit the uninterrupted grinding or machining of the bottom of the tongue, insuring the accurate fitting of the tongue to the floor portion upon which it rests.

My invention consists in the various novel features of construction and combinations of parts hereinafter described and particularly claimed.

In the accompanying drawings, illustrating my invention: Figure 1, is a plan view of a portion of a railway switch structure embodying my invention, showing the heel end of the switch tongue and adjacent parts. Fig. 2, is a longitudinal section, on line 2—2 of Fig. 1. Fig. 3, is a transverse section, on line 3—3 of Fig. 1. Fig. 4, is a transverse section, on line 4—4 of Fig. 2.

Referring to the drawings, illustrating one form of embodiment of my invention, 5 designates the frame structure or base of a railway switch. This frame or base includes a floor portion 6 provided with downwardly-extending supporting walls 7, spaced and arranged to provide a firm and rigid frame for the switch structure. Rising from one side of the floor portion 6 and extending longitudinally of the frame 5 is a tread portion 8, and rising from the other side of the floor portion 6 and extending longitudinally of the frame 5 is a guard portion 9. Resting upon the floor portion 6 between the tread portion 8 and the guard portion 9 is the switch tongue 10, the heel end of which abuts against a tread portion 11 rising from the floor portion 6 between the tread portion 8 and guard portion 9. Formed between the tread portions 8 and 11 and between the tread portion 11 and the guard portion 9 are the usual grooves 12 and 13, respectively, to receive the flanges of wheels and guide them to and from the respective sides of the tongue

in the usual manner. The entire frame structure 5 may be formed in a single casting or, as is common in switch structures of this class and as shown in the drawings, the top of the floor portion 6 the tread portions 8 and 11 and the guard portion 9 may be formed in a separate casting 15 seated in a casting forming the main body of the frame structure 5. The heel end of the tongue 10 is formed into a large pivot head 14 which is mounted between the tread portion 8 and guard portion 9 in a manner to pivot the heel end of the tongue to the frame structure to permit the point end of the tongue to be moved laterally into engagement with either the tread portion 8 or guard portion 9 as the tongue is operated in the usual manner. The head 14 and the sides of the body of the tongue 10 are grooved to form continuations 20 of the grooves 12 and 13, as shown.

When herein I speak of rearwardly, I mean in the direction from the tongue 10 to the tread portion 11, as indicated by the arrow in Fig. 1.

Formed in the bottom of the head 14 or in the bottom of the heel end of the tongue 10 is a cavity 16 which extends upwardly and then rearwardly providing the tongue with a bearing part 17 above the bottom face of the tongue and below the rearward portion of the cavity 16. The floor portion 6 beneath the forward portion of the cavity 16 is provided with an opening 18, and extending through the opening 18 and into the cavity 16 is the upper end of a link or member 19. The upper end of this member 19 is made hook form and extends over and engages the rounded top of the bearing part 17 and also the rounded forward face of the part 17 slightly below the top thereof. The area of the engaged faces of the parts 17 and 19 is very small and such area is on the vertical line forming the center or axis of the head 14 on which the head turns as the tongue is moved from side to side. It will therefore be seen that there will be very little friction and consequently very little wear between the parts 17 and 19. The lower portion of the link or member 19 extends downwardly and rearwardly from the cavity and the lower end of the member 19 is provided with a forwardly extending hook which extends beneath and is engaged by a lever 20 between the ends thereof. The lever 20 extends transversely beneath the floor portion 6, and one end of the lever 20 is fulcrumed at 21 against the frame structure and the other end of the lever is bifurcated at 22 for a purpose presently explained. The lever 20 is fulcrumed to move parallel to its side faces and parallel to a downwardly and rearwardly extending, inclined plane, so that if downward and rearward pressure be applied to the bifurcated end of the lever

20, such pressure will be transmitted to the part 17 of the tongue 10, thereby forcing the heel end of the tongue down into close contact with the floor portion 6 and at the same time forcing the heel end of the tongue back into close contact with the tread portion 11.

To exert the desired downward and rearward pressure against the lever 20, I provide the following: Extending through the bifurcated end of the lever 20 and parallel to the inclined plane through which the lever 20 is fulcrumed to move is a bolt 23. The lower and rearward end of the bolt 23 extends through a slot 24 in an inclined rib or wall 25 of the frame 5, and the lower end of the bolt 23 is provided with a square head 26 seated in a square socket in the bottom of the wall 25. The head 26, engaging the walls of the socket in which it is seated prevents upward movement of the bolt 23 and prevents it from turning. The slot 24 is made in key-hole form, as clearly shown in Fig. 3, to permit the head 26 to be lowered through the wide part of the slot, in assembling the parts, before the shank of the bolt is moved into the narrow portion of the slot where it rests. The bolt 23 extends up from the wall 25 through and beyond the bifurcated end of the lever 20, and a nut 27 is screwed on to the upper end of the bolt. The bottom of the nut 27 engages the top of a coiled spring 28 which encircles the bolt 23, and the bottom of the spring 28 engages the top of the bifurcated end of the lever 20, the spring 28 being compressed between the nut 27 and lever 20. It will thus be seen that the spring 28 acts to press the lever 20 and therewith the member 19 and tongue 10 downwardly and rearwardly, that the heel end of the tongue 10 is thus held firmly back against the tread portion 11 and firmly down upon the floor portion 6, and that the spring 28 will automatically take up any wear that occurs between the tongue 10 and the tread portion 11 and between the tongue 10 and the floor portion 6. By adjusting the nut 27 upon the bolt 23, the pressure of the spring 28 against the lever 20 may be nicely regulated. The bifurcated end of the lever 20 and the bolt 23 are located within a box 29 forming a part of the frame 5 and extending laterally from the main body thereof. The top of the box 29 is provided with a suitable removable cover plate 30 to afford access to the interior of the box for the adjustment of the nut 27 or for the removal or replacement of the parts employed in the mechanism for holding the switch tongue in place.

I claim:

1. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor

portion, a switch tongue upon said floor portion and having its heel end abutting against said tread portion, a member engaging a part of said tongue adjacent the heel end thereof, and means for exerting a combined downward and rearward pressure against that part of said member engaged with said tongue.

2. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having its heel end abutting against said tread portion, a member engaging a part of said tongue adjacent the heel end thereof, and means for exerting a combined downward and rearward pressure against that part of said member engaged with said tongue, said means including a lever fulcrumed to move parallel to a plane between a vertical plane and a horizontal plane.

3. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having its heel end abutting against said tread portion, a member engaging a part of said tongue adjacent the heel end thereof, a lever engaging said member and fulcrumed to move parallel to a plane between a vertical plane and a horizontal plane, and means for exerting pressure against said lever, said lever and said member acting under said pressure to force the heel end of the tongue downwardly and rearwardly.

4. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having a pivot head on the heel end thereof mounted to turn in said frame structure and to abut against said tread portion, a member engaging a part of said tongue on the line of the axis of said head, and means for exerting a combined downward and rearward pressure against that part of said member engaged with said tongue.

5. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having a pivot head on the heel end thereof mounted to turn in said frame structure and to abut against said tread portion, a member engaging a part of said tongue on the line of the axis of said head, and means for exerting a combined downward and rearward pressure against that part of said member engaged with said tongue, said means including a lever fulcrumed to move parallel to a plane between a vertical plane and a horizontal plane.

6. In a railway switch, the combination of a frame structure having a floor portion, a switch tongue mounted on said floor portion, a lever having one end fulcrumed against said frame structure, means for exerting downward pressure against the other end of said lever, and a member engaging a part of said tongue adjacent the heel end thereof and being engaged by said lever between its fulcrum end and said means.

7. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having its heel end abutting against said tread portion, a lever having one end fulcrumed against said frame structure, means for exerting pressure against the other end of said lever, and a member engaging a part of said tongue adjacent the heel end thereof and being engaged by said lever between its fulcrumed end and said means, said lever and said member acting under said means to force the heel end of said tongue downwardly and rearwardly.

8. In a railway switch, the combination of a frame structure having a floor portion, a switch tongue mounted on said floor portion, a lever fulcrumed against said frame structure, a link member extending over and engaging the upper portion of a part of said tongue adjacent the heel end thereof and extending under and engaging the bottom of said lever, and means forcing downwardly that part of said lever engaged with said link member.

9. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and having its heel end abutting against said tread portion, a lever fulcrumed against said frame structure, a link member extending over and engaging the upper portion of a part of said tongue adjacent the heel end thereof and extending under and engaging the bottom of said lever, and means forcing downwardly and rearwardly that portion of said lever engaged with said link member.

10. In a railway switch, the combination of a frame structure having a floor portion, a switch tongue upon said floor portion and having a cavity formed in the bottom of the heel end thereof above the plane of the top of said floor portion, a member extending into said cavity and over and engaging a part of said tongue, and means for exerting downward pressure against that portion of said member engaged with said tongue.

11. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and abutting against said tread por-

tion and having a cavity formed in the bottom of the heel end thereof above the plane of the top of said floor portion, a member extending into said cavity and over and engaging a part of said tongue, and means for exerting a combined downward and rearward pressure against that part of said member engaged with said tongue.

12. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and abutting against said tread portion and having a cavity formed in the bottom of the heel end thereof above the plane of the top of said floor portion, a member extending into said cavity and over and engaging a part of said tongue, and means for exerting downward pressure against that portion of said member engaged with said tongue, said means including a lever fulcrumed to move parallel to a plane between a vertical plane and a horizontal plane.

13. In a railway switch, the combination of a frame structure having a floor portion, a switch tongue upon said floor portion and having a cavity formed in the bottom of the heel end thereof above the plane of the top of said floor portion, a lever fulcrumed

against said frame structure, a link member having one end extending into said cavity and over and engaging a part of said tongue therein and having the other end extending under and engaging the bottom of said lever, and means forcing downwardly that part of said lever engaged with said link member.

14. In a railway switch, the combination of a frame structure having a floor portion and a tread portion rising from the floor portion, a switch tongue upon said floor portion and abutting against said tread portion and having a cavity formed in the bottom of the heel end thereof above the plane of the top of said floor portion, a link member having one end extending into said cavity and over and engaging a part of said tongue therein and having the other end extending under and engaging the bottom of said lever, and means forcing downwardly and rearwardly that portion of said lever engaged with said link member.

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

CLAUDE A. LANGDON.

Witnesses:

ALBERT R. PEREGOY,
W. H. SMILEY.