

(No Model.)

W. M. BROWN.
RAILWAY SWITCH.

No. 537,601.

Patented Apr. 16, 1895.

Fig. 1.

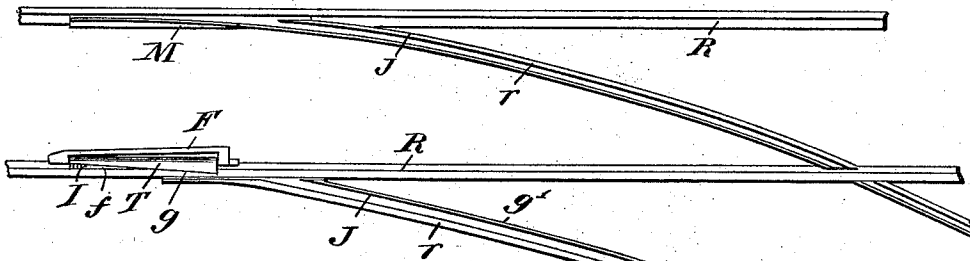


Fig. 2.

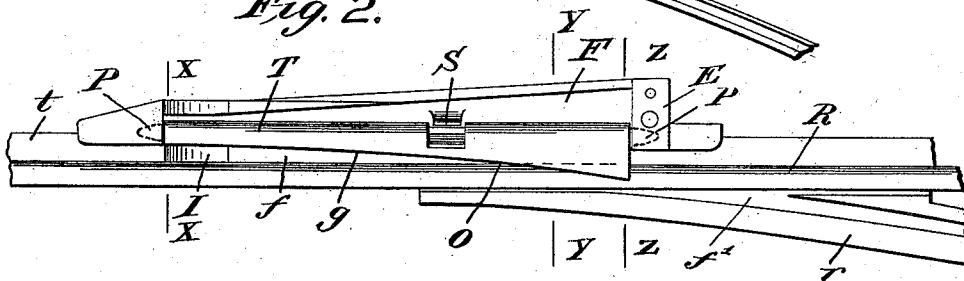


Fig. 3.

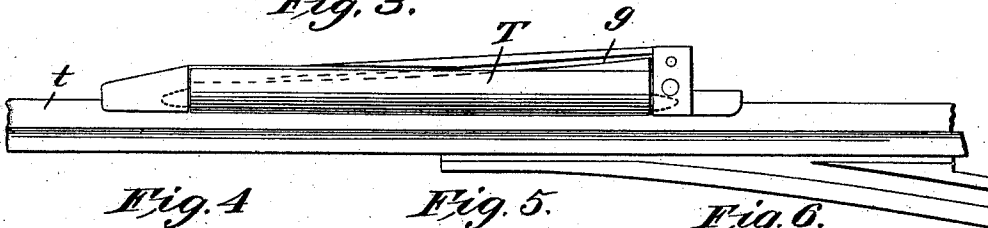


Fig. 4

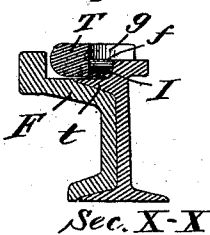


Fig. 5.

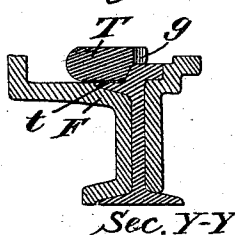
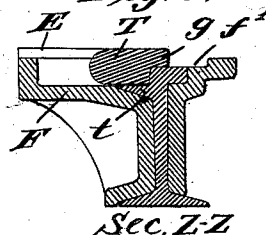


Fig. 6.



Witnesses.
Milton J. Constable.
E. M. Bolsinger

Inventor:
Wm. Franklin Brown
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UNITED STATES PATENT OFFICE.

WILLIAM MILTON BROWN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
THE JOHNSON COMPANY, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 537,601, dated April 16, 1895.

Application filed January 2, 1895. Serial No. 533,578. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MILTON BROWN, of Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Railway-Switches, of which the following is a full and true description, due reference being had to the accompanying drawings.

My invention especially relates to that class of railway switches known as "unbroken main line switches"—that is, a switch in which the through or straight track is unbroken or presents a continuous surface for the car wheel to roll upon. These switches are desirable where the bulk of the travel is upon the through track, the siding track being only occasionally used.

My improved form of switch is specially adapted to street railways, and in this connection I will describe it.

In the drawings Figure 1 represents a general view of a portion of railway track containing a switch embodying my invention. Fig. 2 is a top view of the switch showing it set to deflect a car from the straight to the siding track. Fig. 3 is a top view of the switch showing it set to allow a car to travel undisturbed upon the straight or through track. Figs. 4, 5 and 6 are sections upon lines X, Y and Z respectively of Fig. 2.

I will now describe the switch in detail.

R R are the main or through track rails, and *r, r* the branch-off or siding rails. The main rails R are usually provided with a side tram *t*, while the branch-off rails *r* may or may not have grooves and guards *g'*. On the gage side or inside of the main rail R is attached the frame or casting F. This frame affords a support and protection to the tongue T pivoted therein. The construction of the tongue is as follows: At each end it is pivoted in the frame F by pivots P on an axis substantially parallel to the line of the main rail R and is so shaped that in one position, that of Fig. 2, it lies upon the tram *t* and close against the gage line of the main rail, and when thrown over in the position shown in Fig. 3, it leaves a clear and unobstructed passage for the travel of the car wheel upon the main rail R. The side of the tongue which lies against the rail is formed having at one end an incline I, the bottom of which

is below the top of the head of the rail R, preferably far enough below to allow the flange of a car wheel to pass the end without striking it. This incline gradually rises toward the center of the tongue until it reaches the level of the top of the rail R. Adjacent to the incline is the guard *g*, which commences substantially parallel with the rail R, but curves toward and across it and forms practically a continuation of the guard *g'* of rail *r'*. From the top of incline I to the point *o* where the guard *g* crosses the gage line of rail R the metal of the tongue forms a floor *f* level with the top of rail R. I have shown a cover plate E, which is removable to permit of the insertion or removal of the tongue, the bearing at this end being open to the top of the frame F. The tongue is inserted by entering the pivot at the other end in its bearing and then dropping this end in place. The cover plate E then prevents it rising.

The end of rail *r* may be formed in any convenient way for attachment to rail R. I have shown it as a casting joined to the ordinary rail at J. Likewise the mate M (Fig. 1) may be formed of a casting and attached to the rail R without any mutilation of the same.

The floor *f'* of rail *r* should commence at rail R, level with the top of the head of rail R and be inclined downward as it curves away therefrom. Likewise the end of the head of rail *r* may be elevated above that of rail R at a distance equal to the depth of the flange of a car wheel, for a purpose hereinafter explained.

The action of the switch is this: If a car approaching from the left of Fig. 1 should pass over to the siding track *r* the tongue of the switch is thrown to the position in Fig. 2. As the car comes along the flange of the wheel passes upon incline I and as it rises thereupon it bears against guard *g*. When the wheel reaches the floor *f*, the bottom of the flange is level with the top of rail R and is forced by the guard *g* over, upon, and across it. By the time it leaves the end of guard *g* the car has been sufficiently deflected from the line of track R to pass upon the siding track *r*. The wheel therefore rolls across the head of rail R upon the elevated floor *f* and head of rail *r* and thence down into the siding track.

I have shown at S a stop formed upon the casting and adapted to support the center of the tongue T against the side thrust of the car wheel as it is deflected out of its straight path. One or more of these stops may be employed.

Where it is desired that the car should continue upon the straight track, the tongue T is thrown over into the pocket in frame F, as shown in Fig. 3, and the rail R is left clear and unobstructed.

I am aware that switches of this class have been employed in which the tongue has been provided with substantially the same form of incline and guard as I have herein described, but they have been pivoted upon a vertical pivot at one end and have necessarily been longer than the effective portion of guard *g* and consequently heavier and occupying more space in the street. By my construction I am enabled to use a tongue no longer than the necessary guard *g* and am enabled to firmly support it against any side thrust along its side.

When I speak of an unbroken main rail, I refer only to the top of the head of the rail, that portion upon which the car wheel travels, as it is obvious that were the rail to be provided with a groove and guard it would be necessary to remove a portion of the guard to permit the tongue to lie against the gage line of the rail.

The tram with which the straight track rail is usually provided affords a very suitable floor for the tongue to lie upon while against the rail.

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

1. In an unbroken main line switch, in combination with an unbroken through rail and a siding rail, a frame attached to the main rail on its gage side, a pocket in said frame and a tongue in said pocket, said tongue being pivoted on a horizontal axis substantially parallel with the main rail and adapted to lie against the gage line of the rail or be thrown over into the pocket leaving the through track clear.

2. In combination with an unbroken track rail having a side tram, a frame secured to the rail on the tram side, said frame having a pocket, and a tongue lying in said pocket and longitudinally pivoted therein, said tongue being so constructed and arranged as to lie upon said tram and against the gage line of the rail or be thrown over into the pocket leaving the track clear.

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

WILLIAM MILTON BROWN.

Witnesses:

RICHARD EYRE,
GEORGE B. SHEPLEY.