W. Wharton, Jr.

Railroad Switch.

No. 87,529. Patented Mar. 2, 1869.

Fig. 1.

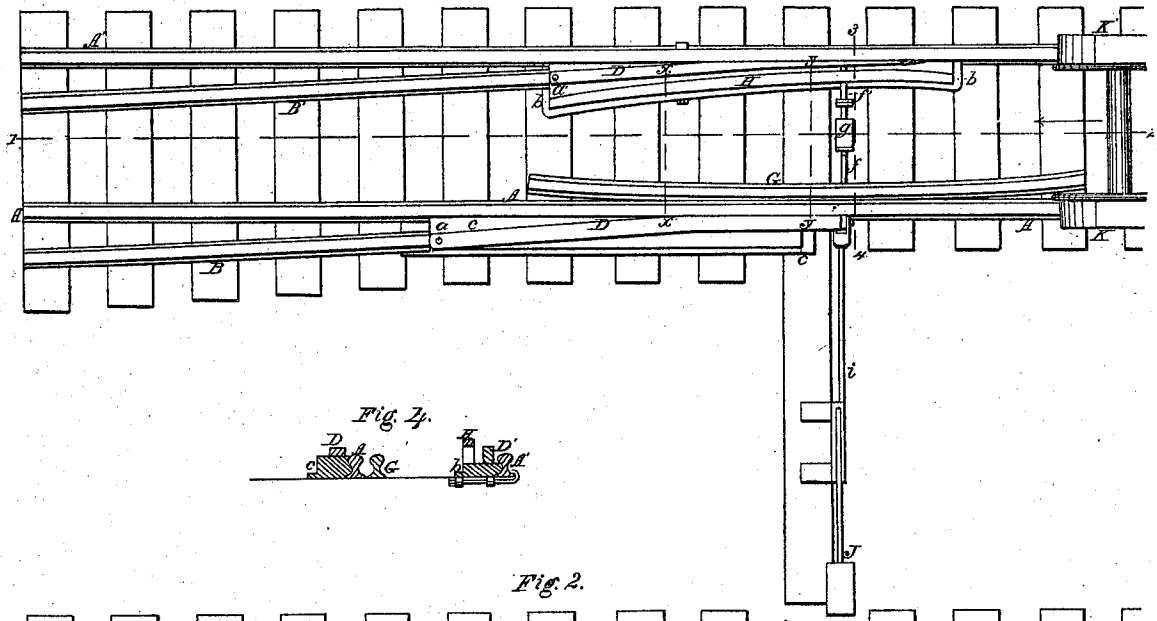


Fig. 4.

Fig. 2.

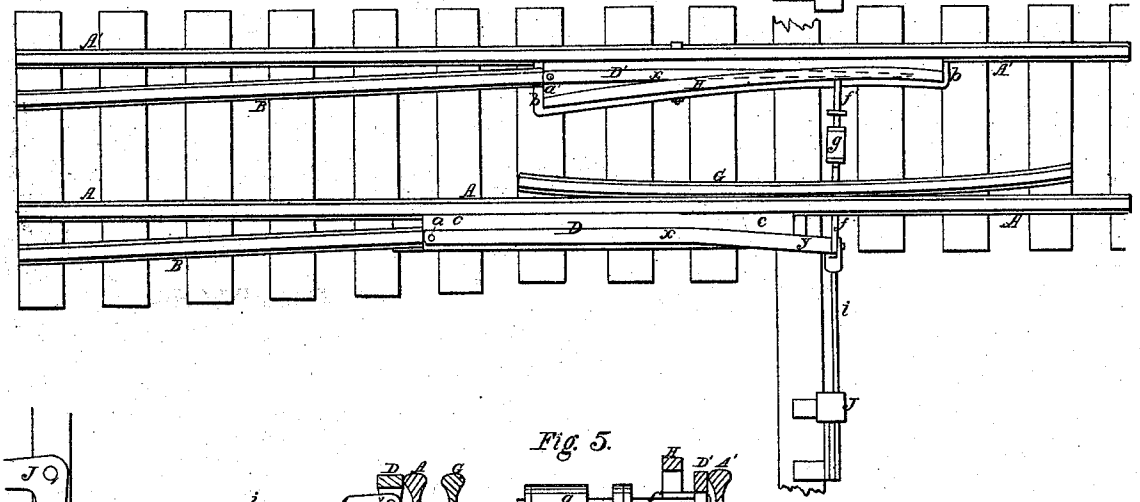
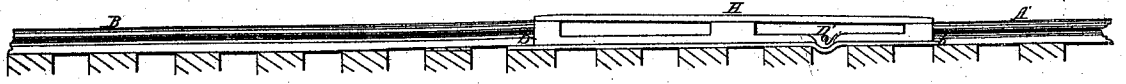


Fig. 5.

Fig. 3.



Witnesses.
Wm. A. Lane
John Parker

Inventor.
Wm. Wharton Jr.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED RAILWAY-SWITCH.

Specification forming part of Letters Patent No. **87,529**, dated March 2, 1869.

To all whom it may concern:

Be it known that I, WILLIAM WHARTON, Jr., of Philadelphia, Pennsylvania, have invented an Improved Railroad-Switch; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements, fully described hereafter, in the railroad-switch for which Letters Patent were granted to me on the 27th day of June, A. D. 1865.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figures 1 and 2 are plan views, in different positions, of my improved railroad-switch; Fig. 3, a longitudinal section of the same on the line 1 2, Fig. 1; Fig. 4, a transverse section on the line *x x*, Fig. 1; and Fig. 5, a transverse section, drawn to an enlarged scale, on the line 3 4, Fig. 1.

Similar letters refer to similar parts throughout the several views.

A and A′ are the two permanent rails of the main track; B and B′, the rails of the turnout, and D and D′ the two switch-rails, the rail D being pivoted at the point *a*, so as to form a continuation of the rail B, and the rail D′ being pivoted at *a′*, so as to form a continuation of the rail B′.

G is a guard-rail, situated at such a distance from the permanent rail A of the main track that the flanges of the wheels can pass freely between the two.

In the present instance this guard-rail is permanently secured to the cross-ties; but it may, if desired, be so arranged that when the switch is not in use it shall be moved toward the center of the track a sufficient distance to avoid being touched by the wheels of passing trains.

A method of moving this guard-rail from one end is fully described in my patent of October 8, 1867, another plan being to fasten the guard-rail at both ends and operate it from the center.

The rail D of the switch is so curved laterally toward its outer end that it can be brought against the outside of the rail A in the manner illustrated in Fig. 1, and the pointed rail D′ is in like manner so curved that it can be brought in contact with the inner side of the rail A′.

The outer ends of the switch-rails D and D′ are of the same height as or a little below the level of the rails A and A′ of the main track, but from the points *y y* these switch-rails gradually increase in height to about the points *x x*, they then being continued at a uniform level to a suitable distance, when they may be gradually reduced to the level of the rails of the main track.

A guard-rail, H, which is secured to a base-plate, *b*, upon which the pointed switch-rail D′ is arranged to slide, is so elevated above the said pointed switch-rail that the latter, for a considerable portion of its length, can slide underneath the guard-rail, as will be seen on reference to the drawing.

The switch-rail D is also arranged to slide upon a base-plate, *c*, of cast-iron or other metal, which, between the points *x* and *a*, is level, or nearly so, with the rail A of the main track.

The switch-rails D and D′ are connected together by two rods, *f* and *f′*, the latter being attached to the rail D′ and arranged to slide through an enlargement of the rod *f*, as best observed in Fig. 4, there being on the end of the rod *f′* a shoulder, between which and the said enlargement of the rod *f* intervenes a rubber or other spring, *g*, for a purpose described hereafter.

A link, *i*, serves to connect the rod *f* with a weighted lever, J, by which the switch is operated in a manner readily understood on reference to the drawing.

When the switch is in the position shown in Fig. 2, the wheels of the cars will traverse the permanent rails A and A′ of the main track without coming in contact with the rails of the switch. When the cars, however, have to be transferred from the main track to the turnout, the switch is moved to the position illustrated in Fig. 1, in which case the wheels K K′ of a car moved in the direction of the arrow will pass from the main track to the turnout, for the wheel K will be guided laterally by the guard-rail G, so that the flange of the opposite wheel K′ shall be drawn slightly from the main rail A′, and be prevented from

striking the end of the pointed switch-rail D′, but be caused to pass between the latter and the guard-rail H.

As the wheels continue to move in the direction of the arrow the overhanging portion of the tread of the wheel K must run upon and be gradually raised by the inclined plane of the rail D, which, from about the point *x*, is so far elevated above the rail A of the main track that the flange of the wheel will be raised above and be freed from the control of the said rail A. Until the wheel K has thus been raised above the rail of the main track the only office of the pointed switch-rail D′ has been to guide the wheels laterally, so that the entire overhanging portion of the tread of the wheel K might run upon the switch-rail D; but when this has been accomplished the pointed switch-rail, which then takes a more abrupt bend, performs its usual duty in directing the wheels onto the rails of the turnout.

It will be observed, on reference to Fig. 1, that the points *y y*, at which the switch-rails begin to rise above the level of the rails of the main track, are opposite, or nearly opposite, to each other, in order that the wheels on both sides of the car may be raised simultaneously, or nearly so, thus preventing the rolling motion of the car, which occurs when the rail D only is elevated, as shown in my aforesaid patent of June 27, 1865.

Although very desirable, it is not absolutely essential in carrying out my invention, that the pointed switch-rail should be thus inclined or raised above the main-track rail A′.

It will be evident that the rails D and D′ of the switch can present no impediment to the cars in a direction contrary to that pointed out by the arrow, for the wheels must move them away from the permanent rails of the main track should the attendants neglect to restore the switch to the position shown in Fig. 2.

The object of the guide-rail H is to guide the flanges of the wheels in their passage over the switch-rails from the turnout onto the rails of the main track. This guard-rail also plays an important part if a car is passed from the turnout onto the main track when the switch has been left open, as shown in Fig. 2. In this case the flange of that wheel which would have traversed the pointed rail D′ had the switch been properly adjusted is directed laterally by the guard-rail H against the said switch-rail D′ until it gradually pushes the latter to its proper position, as shown in Fig. 1. This turning of the pointed switch-rail without a corresponding movement on the part of the rail D is permitted by reason of the compression of the spring D, which intervenes between the connecting-rods *f f′*. While the flange of one wheel is thus directed and caused to turn the pointed switch-rail it will be evident that the flange of the opposite wheel will be drawn over and caused to traverse the plate *c* and top of the rail A until it drops to its proper place between the said rail A and the guard-rail G.

It is preferable that the rail D′ should slide underneath the guard-rail H for a certain portion of its length, in order that the said guard-rail may be placed sufficiently near to the rail A′ of the main track to perform its duty to the fullest advantage. Yet it is evident that the several parts of the switch might be so arranged as to allow the pointed switch-rail to lie alongside of, instead of pass beneath, the guard-rail H.

The weighted lever J, when the switch is adjusted as shown in Fig. 1, lies horizontally, and tends to maintain the switch-rails in the position to which they have been turned for permitting the passage of cars onto or from the turnout; but when in this position the weighted lever does not offer sufficient resistance to prevent the turning of the switch-rails by the wheels of cars passing over the main track in a direction contrary to that pointed out by the arrow, as above described.

By the above arrangement I am enabled to preserve the continuity and permanency of both rails of the main track, as in my former patent of June 27, 1865, and upon which—

I claim as an improvement, and desire to secure by Letters Patent—

1. The combination of the permanent rails A and A′ of the main track, the rails B and B′ of the turn-out, the switch-rails D and D′, and the permanent guard-rail H, the whole being arranged and operating substantially as and for the purpose described.

2. In combination with the above, I claim the base-plate *c*, for the purpose specified.

3. Also, in combination with the above and with the base-plate *c*, the guard-rail G, arranged substantially as and for the purpose described.

4. The combination of the inclined switch-rail D with the inclined pointed switch-rail D′, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. WHARTON, JR.

Witnesses:

JOHN WHITE,

HARRY SMITH.