

W. Wharton, Jr.,

Railway Switch.

No. 10,951.

Patented Apr. 12, 1870.

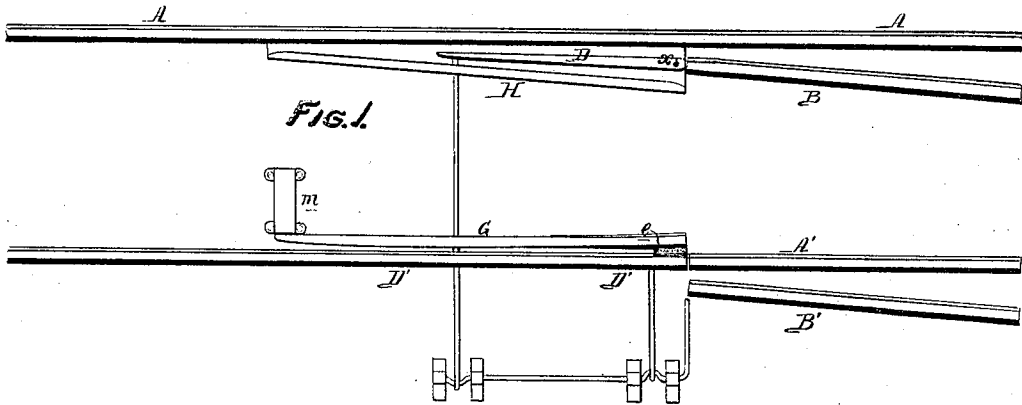


Fig. 1.

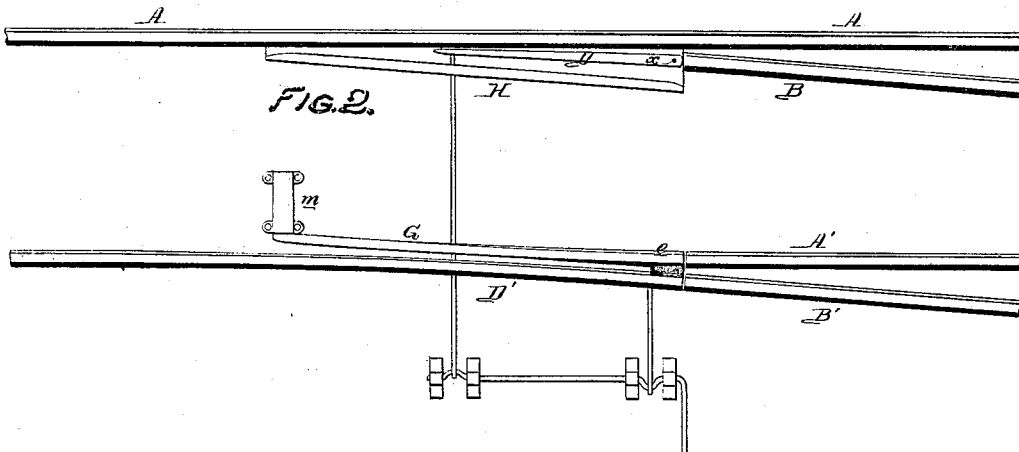


FIG. 2.

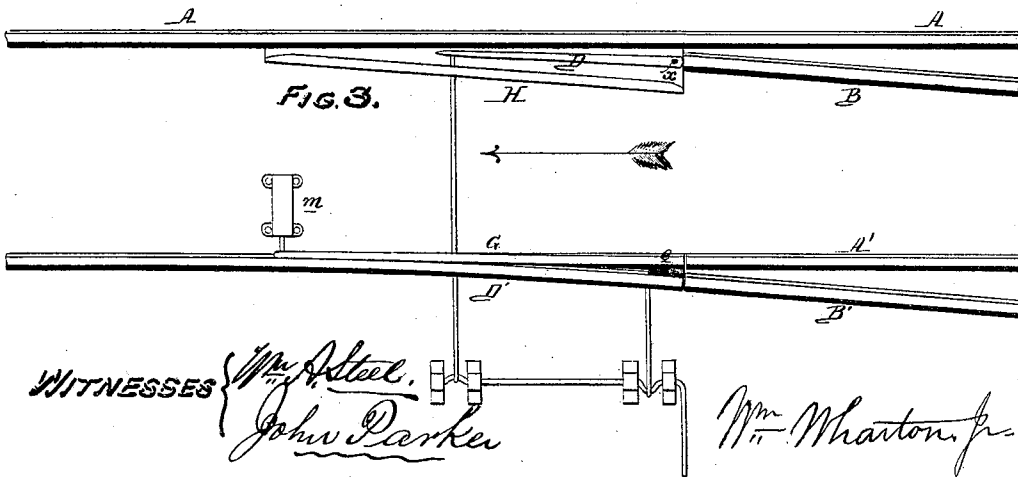


FIG. 3.

WITNESSES

Wm. Steel.
John Parker

Wm. Wharton, Jr.

UNITED STATES PATENT OFFICE

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. 101,951, dated April 12, 1870.

I, WILLIAM WHARTON, Jr., of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Railroad-Switch, of which the following is a specification.

Nature and Object of the Invention.

My invention consists, first, in combining with a rail of the main track a pointed switch-rail forming a continuation of a rail of the siding, and restricted in its movement toward the said main rail, as set forth hereafter, so that there may always be a space between the switch-rail and main rail, wherein snow, sleet, and other obstructions can be lodged without interfering with the free passage of the car-wheels, and so that the passage of the wheels from the siding to the main track, and vice versa, may be unaccompanied with the injurious shocks and jars imparted by ordinary switch-rails, as explained hereafter; secondly, my invention consists of the combination of the above-mentioned pointed switch-rail, having a restricted movement, with a guide rail, as and for the purpose hereinafter fully explained.

Description of the Accompanying Drawing.

Figure 1 is a plan view of my improved railroad-switch as it appears when the rails are set for the main track. Fig. 2 is a plan view of the same with the rails set for the siding; and Fig. 3 is a plan view of the switch as it appears when the rails are set for the siding, and when a train is passing along the main track in the direction of the arrow.

General Description.

A and A' are the rails of the main track, and B and B' the rails of the siding.

D and D' are the two rails of the switch, the rail D being pivoted at *x*, or otherwise secured at that point as to be a continuation of the rail B of the siding; or, if desired, it may form a part of the rail B, providing the said switch-rail can have at its outer comparatively sharp-pointed end a lateral movement from the position shown in Fig. 1 to that shown in Fig. 2.

The other rail, D', of the switch is secured permanently to the cross-ties at one end, but so that it can be moved at its outer end to co-

incide with the rail A' of the main track, or with the rail B' of the turn-out.

G is a guide-rail bolted or otherwise secured at one end to the outer movable end of the switch-rail D' at *e*. The other end, however, is maintained at a sufficient distance from the rail D' to insure the passage of the flanges of all wheels traversing the track between the said rail D' and the guide-rail, whether the switch is set for the main track or for the siding. This position of the guide-rail G is maintained either by means of a spring or by a weight properly applied, or by the rigidity of the guide-rail G itself, the latter, however, possessing sufficient elasticity or being permitted to otherwise so yield that it can be moved to the position shown in Fig. 3.

H is a guard-rail or guide-rail to assist in the proper passage of cars into and out of the siding, although its presence is not essential for that purpose in the present instance.

The pointed rail D and the other rail, D', of the switch, with the guide-rail G attached to it, are moved to the position shown in Fig. 1, or that shown in Fig. 2, by means of any suitable mechanism, in the present instance a shaft with cranks being shown.

When the switch has been moved to the position shown in Fig. 1, the wheels of all cars will pass along the main track, and there is a sufficient space between the main rail A and the pointed switch-rail D to prevent the flanges of the wheels from striking against the end of the pointed rail D, there being also sufficient space between the switch-rail D' and the guide-rail G to allow of the free passage of the flanges of wheels on that side of the track.

When it is desired to transfer cars from the main track to the siding the switch is moved to the position shown in Fig. 2, in which case the flanges of the wheels, entering between the rail D' and the guide-rail G, are guided or drawn laterally a sufficient distance to cause the flanges of the opposite wheels to pass the point of the opposite switch-rail, D, which has been moved sufficiently near to the rail A to escape the flanges.

While the pointed rail D thus admits of being moved laterally to a limited extent, it is never brought into actual contact with the rail A of the main track, nor with the guard-

rail H, there being always a limited open space between them.

Ordinary switches are so arranged that the pointed rail must be brought into contact with the adjacent fixed rail before the switch can operate properly. This is objectionable for the reason that there may be some foreign substance—a small stone, for instance, or chips of wood—intervening between the switch-rail and fixed rail; but the most serious obstacle to the practical working of such switches is the accumulation of snow or sleet, for, while it is no hard matter to compress the same to a reduced compass, it is almost impossible to squeeze it absolutely out of the way, which, however, is needed in order to bring the rails into contact, unless the switches are always kept clear of snow or ice or other obstructions.

It is my object, in thus giving a limited motion only to the pointed rail D of the switch, to leave sufficient space between it and the main rail A when the switch is set for the siding, or between it and the guard-rail H when the switch is set for the main track, and thus to overcome this difficulty of the operation of the switch being interfered with by snow or ice, or by small stones, gravel, or other obstructions.

It would, of course, remedy this evil to construct the pointed rail D of the switch in such a manner that it shall be firmly fixed to the track without any lateral movement whatever. This has been often done; but, in order that such a pointed rail should perform its duties properly, it is absolutely essential that it should terminate at such a distance back that the spaces between it and the other rails shall be great enough to prevent the possibility of any flange of the wheels striking against or traversing the wrong side of the said point. This requisite space is so great that severe shocks and jars, injurious alike to the rails and to the wheels, must take place.

By giving a limited motion to the pointed rail D, I reduce the opening thus left to be crossed by the wheels to such a small size that excessive and injurious shocks are avoided.

The guide-rail G, when the switch is set for the siding, as in Fig. 2, is moved to such a position that it coincides with the main rail A'. If the switch be accidentally left in this position, and if a car should traverse the main track in the direction of the arrow, Fig. 3, the wheels would traverse the said guard-rail G, which would be pressed toward the rail D' by the flanges of the wheels, so that the latter can traverse the guide-rail, and pass thence

to the rail of the main track, while on the other side of the track the distance between the pointed rail D and the main rail A is, in the present instance, wide enough to permit the flanges of the wheels to pass through with safety and without bending the said pointed rail D.

In the present instance the guide-rail G is not attached to the switch-rail D' excepting at *e*, near the outer movable end of the said switch-rail D', the guide-rail G being kept away from the switch-rail D' to the proper distance by means of the spring contained in the box *m*, which box also serves the purpose of resisting the pressure imparted to that end of the guide-rail by cars guided onto the siding.

It will be evident, however, that various other devices may be employed for such lateral support, and for maintaining the guide-rail G away from the switch-rail D', at the same time allowing it, when needed, to move up toward the same, as, for instance, a loop bolt might be placed through the rail D' and the guide-rail G, which would prevent them moving farther apart than necessary, and yet allow them to be brought toward each other, the required elasticity being obtained by a spring or weight, or by the tendency of the rail G itself, especially if made of steel, to preserve its position when securely attached at one end of the rail D'.

The foregoing combination of the pointed rail D, having a limited motion laterally with the main rail A, may be used with advantage in connection with switches other than that shown and described. The combination of the guard-rail G with the switch-rail D', so arranged as to be capable of being pushed aside when required, may also be used with advantage in connection with other switches.

Claim.

1. The combination, with the rail A, of the switch-rail D, forming a continuation of the rail B of the siding, and restricted in its movement toward the said rail A, as set forth.

2. The combination of the subject-matter of the first claim with the guide-rail G.

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

WM. WHARTON, JR.

Witnesses:

J. M. COLGAN,
HARRY SMITH.