

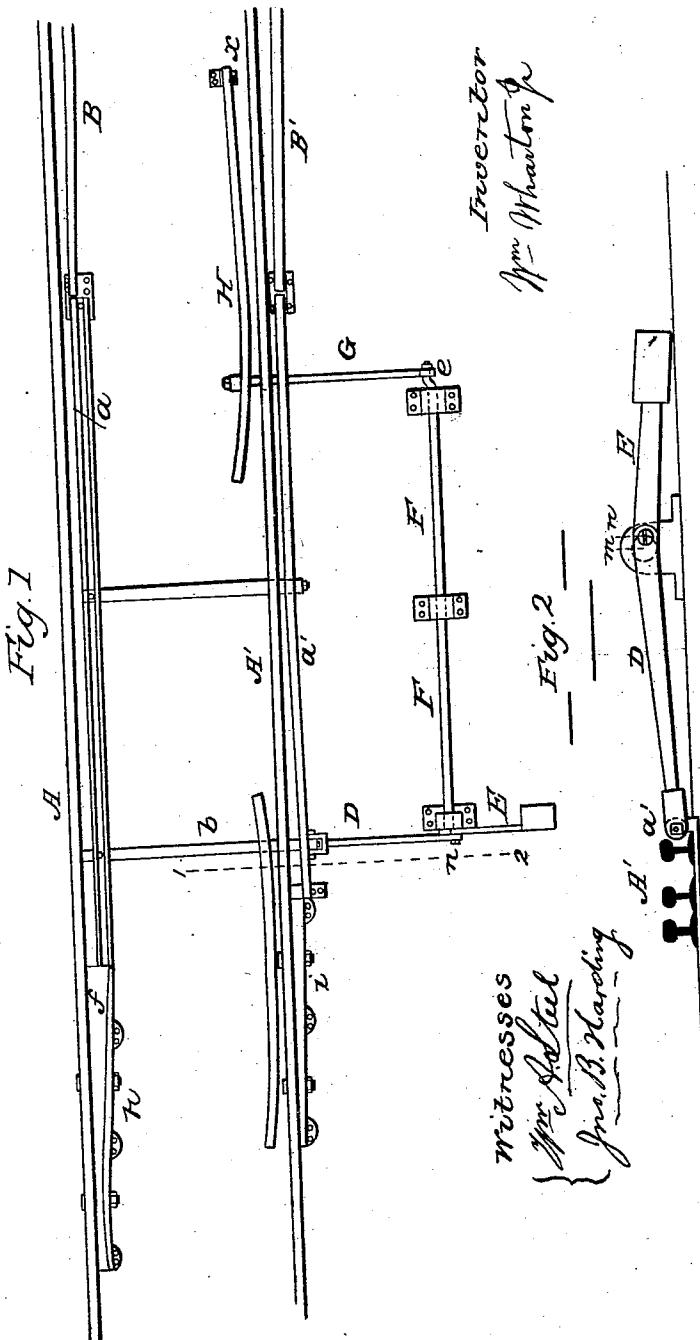
2 Sheets—Sheet 1.

W. WHARTON, Jr.

Railway Switch.

No. 110,808.

Patented Jan'y 3, 1871.



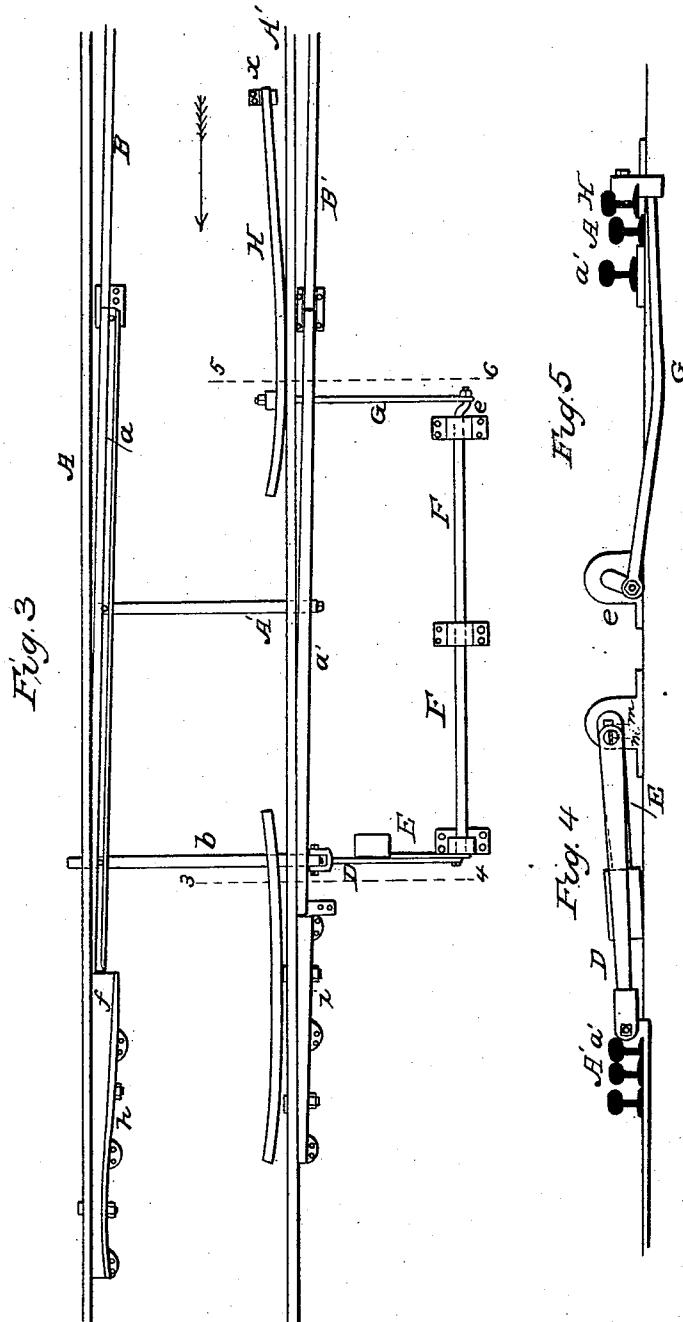
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Witnesses  
Wm. Atwell  
Jos. B. Harding

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# UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **110,808**, dated January 3, 1871.

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 Invention.*

My invention consists of devices constructed and arranged as fully described hereafter, whereby switch-rails may be properly adjusted by the action of the wheels of a train approaching the switch.

### *Description of the Accompanying Drawing.*

Figure 1, Drawing No. 1, is a plan view of my improved railroad-switch as it appears when the rails of the main track are clear for the passage of cars, &c.; Fig. 2, a transverse sectional elevation, drawn to an enlarged scale, on the line 1 2, Fig. 1; Fig. 3, Drawing No. 2, a plan view of the switch as it appears when adjusted for the siding or turn-out; Fig. 4, a transverse vertical section, drawn to an enlarged scale, on the line 3 4, Fig. 3; and Fig. 5, a transverse vertical section, also enlarged, on the line 5 6, Fig. 3.

### *General Description.*

A and A' are the permanent rails of the main track, and B and B' the permanent rails of the siding or turn-out, the switch-rail *a* forming a continuation of the rail B, and the switch-rail *a'* a continuation of the rail B'. These two switch-rails are connected together by any desired number of cross-bars, and one of these bars, *b*, is connected by a rod, *D*, to the weighted operating-lever *E* on a shaft, *F*, which is arranged in suitable bearings adjacent to the track, and which has a cranked end, *e*, connected by a rod, *G*, to the safety-guard rail *H*, the latter being so connected to the track that it can be moved on the point *x* as a center from the position shown in Fig. 1 to that seen in Fig. 3.

The switch-rails *a* and *a'* are both elevated, throughout a portion of their length, above the adjacent rails A and A' of the main track, but near their outer or movable ends they are gradually inclined downward until they reach the level of the said main rails. As seen in Fig. 1, the rails A and A' of the main track are clear for the free passage of cars, &c., in either

direction; but, as seen in Fig. 3, the switch-rails have been so adjusted that cars, &c., traversing the rails B and B' of the siding in the direction of the arrow will pass onto the rails of the main track. As the switch-rail *a* is grooved for the reception of the flanges of the wheels, it serves to maintain the cars in a course determined by the groove. In the meantime the wheels at the opposite side of the car are traversing the elevated switch-rail *a'*, and their flanges will cross above the main rail A' until, their treads descending the inclined portion toward the outer end of the switch-rail *a'*, they will finally take their places on the said main rail.

A very similar arrangement of rails, by which cars can pass from a siding or turn-out onto the main track, and vice versa, without disturbing the integrity of the latter, is fully described in my patent of June 27, 1865.

It will be observed that the efficiency of the switch-rails depends upon their stability while occupying the position shown in Fig. 3, a stability obtained in the manner which I will now proceed to describe.

On referring to the drawing, it will be seen that the switch-rails are connected by the rod *D* to a pin, *n*, on the weighted lever *E*, a short distance from the center *m* of the shaft *F*. When the switch-rails are in the position shown in Figs. 3 and 4, the center of the pin *n* is always in line with or, by preference, slightly below the center *m* of the shaft *F*. In the drawing the center of the pin is a little lower than the center of the shaft, so that any lateral strain imparted to the switch-rails will have a tendency to depress the outer end of the lever *E* still more firmly against the cross-tie or other support, by which means the said switch-rails are maintained in a rigid condition laterally.

By inadvertence the switch-tender might leave the switch in the position shown in Fig. 3 instead of leaving the main track clear for the passage of locomotives and cars. Under such circumstances the flanges of wheels traversing the main track in the direction of the arrow will pass between the safety-rail *H* and the permanent rail A' of the main track, and will force the movable end of the rail *H* toward the center of the track, which, through the medium of the rod *G* and crank *e*, will par-

tially turn the shaft F, thereby elevating the weighted lever and moving the pin n above the dead-center, so that the switch-rails are entirely released and are moved aside, leaving the main track clear.

It will be noticed, by reference to Fig. 5, that this releasing of the switch-rails from their rigid lateral position is very easily effected by means of the crank e, which, while the pin n is upon the dead-center, or, by preference, slightly below it, is itself at a very favorable angle to be readily operated upon by the car-wheels through the medium of the safety-rail H and rod G.

The inclined-plane casting i and the casting f, with its guard-rail h, are intended to draw the wheels onto the main rails, should the switch have been left by accident in the position shown in Fig. 1, when cars are coming out from the siding onto the main track.

These castings operate in a manner too well understood to require any description here.

It is evident that other forms of switch than that shown may be successfully used in combination with the aforesaid cranks and safety-rail, and I therefore do not limit myself to any particular arrangement of switch-rails.

*Claim.*

The combination of the switch-rails, the double-cranked shaft F, and the sliding rail H, all arranged and operated substantially as described.

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

WM. WHARTON, JR.

Witnesses:

WM. A. STEEL,  
HARRY SMITH.