W. Wharton, Jr.

Railroad Switch.

No. 51,373. Patented Dec. 5, 1865.

Fig: 3.

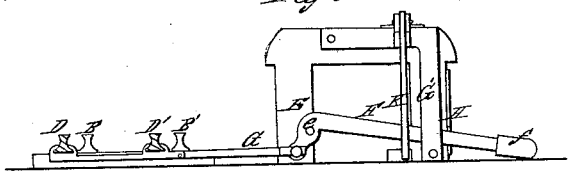


Fig: 4.

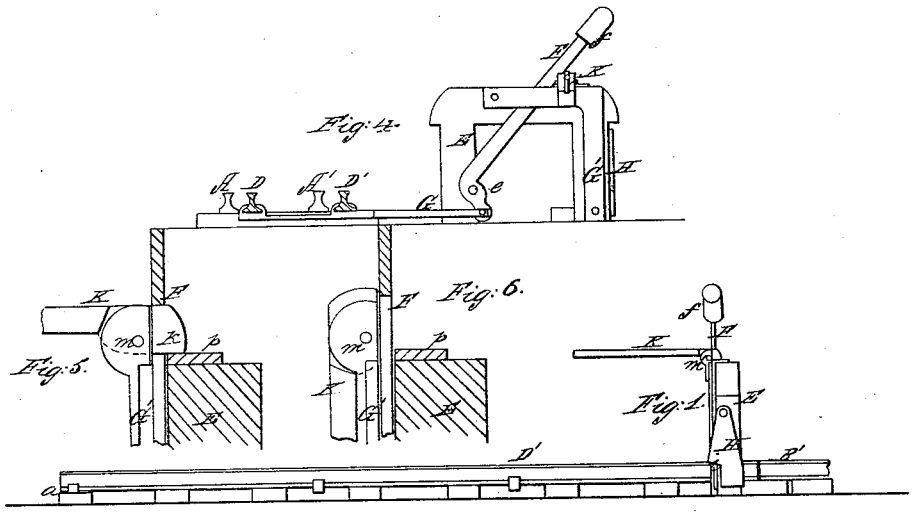
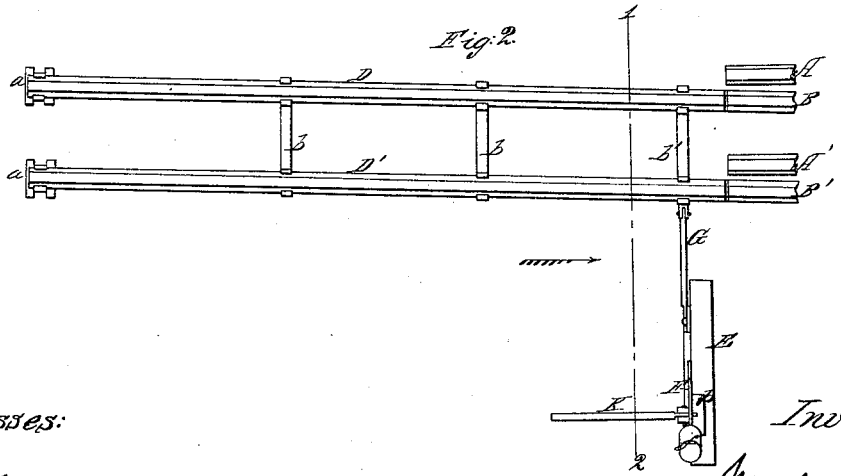


Fig: 2.



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UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED RAILROAD-SWITCH.

Specification forming part of Letters Patent No. **51,373**, dated December 5, 1865.

To all whom it may concern:

Be it known that I, WILLIAM WHARTON, Jr., of Philadelphia, Pennsylvania, have invented an Improvement in Operating Switches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of mechanism fully described hereinafter for the purpose of restoring switches (after they have been moved in line with the rails of a turn-out) to a position in line with the rails of a main track, and of locking the switch in that position should the switch-tender neglect his duties, on the due performance of which, as regards the operating of ordinary switching apparatus, the prevention of serious accidents depends.

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.

On reference to the accompanying drawings, which form a part of this specification—

Figure 1 is a side view of a railroad-switch with my improved apparatus for operating the same; Fig. 2, a plan view of Fig. 1; Figs. 3 and 4, vertical sections on the line 1 2, Fig. 2, looking in the direction of the arrow; Figs. 5 and 6, views of the retaining and releasing device drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

A and A′, Fig. 2, represent the rails of the main track of a railroad, and B and B′ those of the siding or turn-out. D and D′ are the two rails of the switch, each being attached at the rear end to a shoe, *a*, as usual, and the two rails being connected together by appropriate number of ordinary clamp-bars, *b*, so that the two rails may be moved simultaneously and made to coincide at the front end either with the rails A and A′ of the main track or the rails B and B′ of the turn-out.

To one side of the track and adjacent to the switch is secured a suitable frame, E, and to a pin, *e*, on this frame is hung a bell-crank lever, F, the short arm of which is connected by a rod, G, to the clamp-bar *b′* of the switch, at or near the front end of the same. The long arm of the bell-crank lever F passes between the frame E and a guard-plate, G′, secured to the said frame, so that while the lever can be operated freely all undue lateral movement is obviated, the long arm being furnished with such a weight that it will exert sufficient force through the lever, when the latter is released, to move the switch from the position shown in Fig. 2 to a point where its rails will coincide with those of the main track.

At the end of the frame E is loosely hung the pendulous catch H, the tendency of which is to maintain itself in the position shown in Fig. 1, but which, on the depression of the long arm of the lever F, is moved by the latter on one side until the said lever passes the shoulder *i* of the catch, when the latter will instantly resume its former position, prevent the rising of the lever, and insure the maintenance of the rails of the switch in a position coincident with the rails A and A′ of the main track.

To lugs *m m* on the guard-plate G′ is hung a lever, K, the long arm of which serves as a handle for the operator, the short arm *k* being of the cam-shape. (Best observed on reference to the enlarged views, Figs. 5 and 6.) When the lever K is elevated to a horizontal or nearly horizontal position the short arm resting on a plate, *p*, secured to the top of the frame E, serves as a stop for the weighted arm of the lever F and prevents its depression beyond a point illustrated in Fig. 4—that is, the point to which it has been raised—in order to move the switch to a position in line with the rails B and B′ of the turn-out; but it should be understood that the short arm *k* of the lever K serves as a stop for the lever F only so long as the long arm of the said lever K is held in the hands of the operator, for the moment he releases this lever the weight of its long arm and the shape of its short arm are such that it will at once fall and assume the position shown in Fig. 6, thereby releasing the lever F, permitting it to fall, and, in conjunction with its weight, to automatically restore the rails of the switch to a position in line with those of the main track.

The ordinary device for operating switches consists of a powerful lever guided laterally and connected to the switch by a rod, there being pins or other retaining devices for holding the lever in either of the positions to which it may be moved.

When it becomes the duty of the operator to move the switch so as to be in line with the turn-out he operates the lever accordingly,

and then applies the retaining device. Otherwise the shocks imparted to the lever by the passage of locomotives or cars over the switch would prevent him from maintaining such a hold of the lever as to insure the retention of the switch in its proper position during the passage of the locomotives or cars over the same. After the passage of the locomotive or cars onto the turn-out, it is the duty of the operator to restore the switch to its original position in line with the main track. In order to do this it is necessary for him to detach the device which retains the lever, then move the latter, and again secure it by the same or by another device.

Although the switch-tender may be, in general, most careful in the performance of his duties, his attention may be distracted by unusual occurrences in the immediate neighborhood, and he may leave his post, neglecting to restore the switch to its proper position or to secure the lever after the switch has been moved to the desired point. In either case it will be evident that the most serious accidents may result from the negligence of the switch-tender.

The object of my invention has been twofold: first, to insure the restoration of the switch to its proper position in line with the main track should the switch-tender neglect his duties, and, second, the certain locking of the switch after it has been thus moved.

After the switch-tender has moved the switch in line with the rails of the turn-out he raises the long arm of the lever K, so that the short arm *k* may be presented as a stop for the lever F. Should the switch-tender, after the locomotive, &c., has passed onto the turn-out, leave his post and neglect to restore the switch to a position in line with the main track, the lever K will instantly drop to the position shown in Fig. 6; the lever F will be released, the switch will be automatically restored to its proper position in line with the rails of the main track, and there retained, owing to the locking of the lever F by the pendulous catch H.

It will be evident that several parts of the apparatus may be modified as regards construction and arrangement without departing from the main features of my invention. For instance, a cog-wheel may be attached to or form a part of the lever F and gear into a rack connected to the switch. The frame-work, moreover, and the retaining and releasing lever may be modified.

It is not absolutely indispensable that the switch should be restored to a position in line with the main track by a weight, *f*, attached to the lever F, as it will be evident that weights may be so arranged and so employed in connection with chains or cords and pulleys as to act directly on the switch for the purpose of effecting the desired automatic movement.

I therefore claim as my invention and desire to secure by Letters Patent—

1. A lever, F, for operating a switch, in combination with the lever K or an equivalent device, which, when held in a proper position by the switch-tender, will serve to retain the said operating-lever, but which, on being released, will permit the rails of the switch to be automatically restored to a position in line with those of the main track, all substantially as described.

2. In combination with the above, the pendulous catch H or other equivalent locking device, for the purpose specified.

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

WM. WHARTON, JR.

Witnesses:
HENRY HOWSON,
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