2 Sheets—Sheet 1.

F. C. WEIR.

RAILROAD SWITCH.

No. 180,974. Patented Aug. 8, 1876.

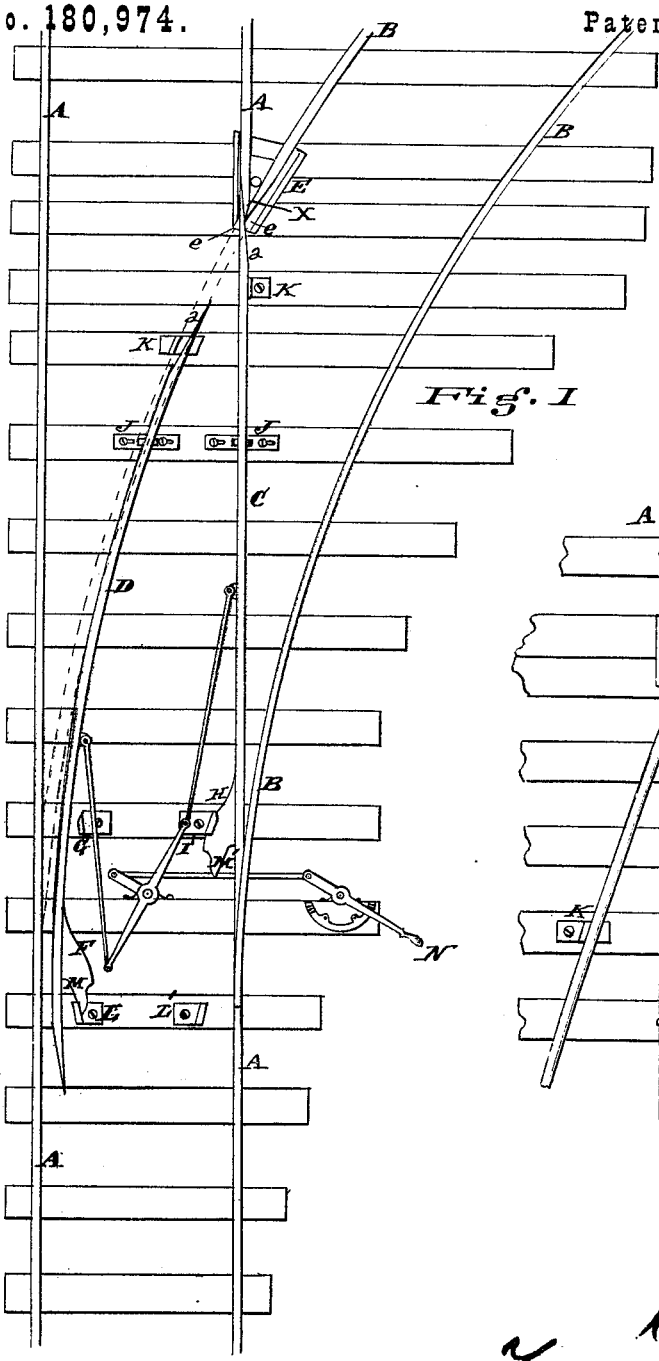
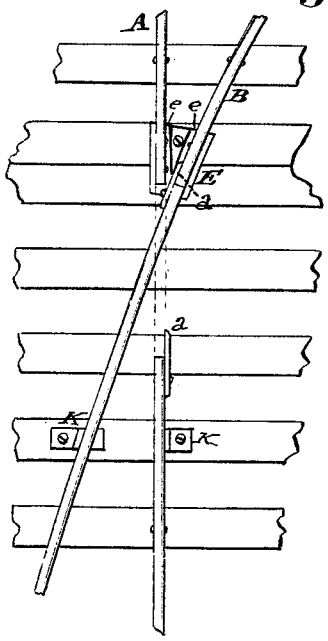


Fig. 1

Fig. 3



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2 Sheets—Sheet 2.

F. C. WEIR.

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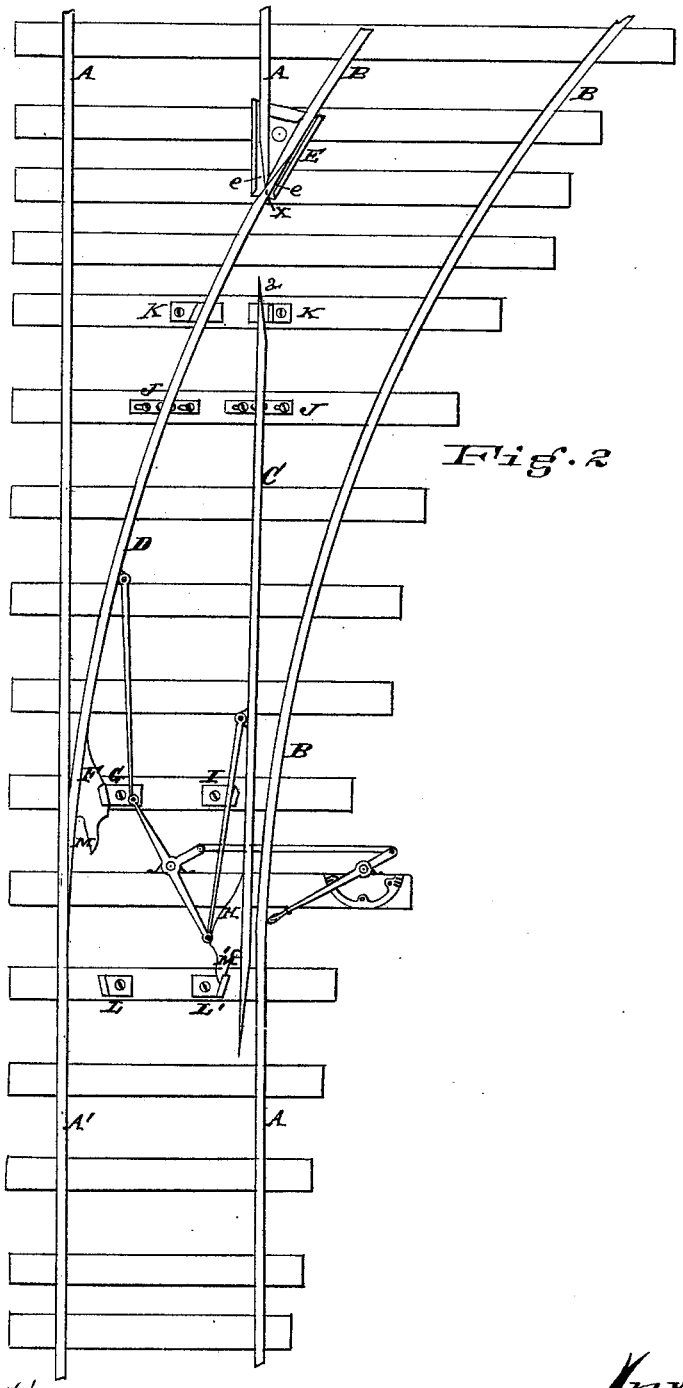

Fig. 2

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UNITED STATES PATENT OFFICE.

FREDRIC C. WEIR, OF CINCINNATI, OHIO.

IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. **180,974**, dated August 8, 1876; application filed January 19, 1876.

To all whom it may concern:

Be it known that I, FREDRIC C. WEIR, of Cincinnati, Hamilton county, and State of Ohio, have invented an Improvement in Railroad-Switches, of which the following is a specification:

The object of my invention is to construct a frogless switch, adapted to form a crossing, affording a practically perfect unbroken track, free from guard-rails, so that all obstructions to the flanges of the wheels, in passing through or over the switches, are removed; and my invention consists, first, in the provision of switch-rails, moved longitudinally, simultaneously, or independently in a line with the main track or side track, or both in opposite directions, so that when one rail is in place and forming a perfect line of track, the other is drawn back out of use, and is held in a position not to obstruct or interfere with the moving wheels, and ready to be thrown into use by reversing the movement of the levers or other device for operating said rails; second, in constructing these longitudinally-moving switch-rails with extension ends, splice-like or lapped, for the purpose of enabling them to overlap the fixed rails of the track, to secure a continuous tread in the passage of the wheels over the joint; third, in connection with the switch-rail of the side track of a laterally-forcing device, for the purpose of carrying this rail to the fixed rail, and securing it firmly in place for the passage of the car-wheels; fourth, in connection with the switch-rail of the main track of a laterally-forcing device, for the purpose of carrying this rail to the fixed rail, and securing it firmly in place for the passage of the car-wheels; fifth, in the provision of sliding chairs, which secure the switch-rails to the cross-ties while permitting them to move by the action of the lateral rail-moving devices; sixth, in the combination of the sliding chairs with the laterally rail-moving devices, so arranged that the action of the latter will automatically operate the former; seventh, in the provision, in connection with the longitudinally-moving switch-rails, of a switch-lever, by which, through suitable connections, the switch-rails may be moved simultaneously; eighth, in the provision on the switch-rails of hooks and inclined chairs on the cross-ties, by which each switch-rail, as it is thrown out of use, is caught and held, so that it cannot offer any obstruction to the passing wheels of the train.

Figure 1 is a plan of my improved switch-rails applied to a main and curved side track, in position for the passage of a train on the main track. Fig. 2 is a plan of the same, in position for the passage of a train on the side track. Fig. 3 shows a modification in the form of the extension on the ends of the rails.

A represents the fixed rails of the main or straight track, and B the fixed rails of the curved or side track. C represents the switch-rail of the main track, and D the switch-rail of the side track.

In operation these rails are moved longitudinally from the position shown in Fig. 1 to that shown in Fig. 2, to accomplish the desired object of securing the track for the main or side travel, and these longitudinally-moving rails, to accomplish this object, constitute the main feature of my invention. The ends *a* of the switch-rails, which meet the junction X of the tracks, are formed splice-like, as shown in Figs. 1 and 2, or lap-jointed, as in Fig. 3, so that when either is made to join the fixed rail to which it belongs it shall lap over that rail and form a continuous bridge or tread for the passage of the wheels, these ends being held in place by grooves *e* in the chairs E. To the switch-rail D a projection having an inclined face, F, is attached, which, as the rail is moved into the position shown in Fig. 2, engages under the chair G, and against its inclined face, so that as the rail is moved forward the chair G forces it into place against the rail A, and secures it in that position. The main switch-rail C has also a projection, with an inclined face, H, to act against the chair I for the same laterally-moving purpose.

It is obvious that other substantially similar devices for lateral movement of these rails may be provided to operate in the same substantial manner. As supports for the rails C D, which will, while properly supporting the rails while in motion, and when adjusted, also enable the laterally-moving device to automatically operate them, I provide sliding chairs J, which, in the lateral motion of the rails, move in slots to laterally support said

rails in the passage of the train. Other chairs, as at K, may be introduced at suitable intervals for the rails to simply slide on, and receive lateral support from, when in place in the track.

When either of the rails is thrown out of place it is caught in the one or the other of the two chairs, L L′, hooks M M′ (which may or may not be a part of the projection F or H) being attached to each of the rails for this purpose. This provision holds the rail C inward, as in Fig. 2, when the rail D is in use, and holds the rail D in place, as in Fig. 1, when the rail C is in use, so that neither, when not in use, can be either displaced or become an obstruction to the passage of the train. The rails C D may, of course, be operated independently; but I prefer that they shall be operated simultaneously, which may be done by lever N, through the connecting devices shown, or any other adapted to give the same change in the position of the rails. The chairs for the rails C D may be provided at the bottom and sides with anti-friction rollers to facilitate the movement of said rails. The improvement as a whole cannot only be applied to a two-throw switch, but is equally applicable to a three-throw.

I claim—

1. The longitudinally-moving switch-rails C D, operated either independently or simultaneously, substantially as and for the purpose specified.

2. In combination with the guiding-chair E, the lap-joint *a*, between the main and sliding switch-rails, substantially as and for the purpose specified.

3. The side switch-rail D and laterally forcing and holding device F G, operating substantially as described.

4. The main switch-rail C, in combination with the laterally forcing and holding device H I, substantially as described.

5. The sliding chairs J, to permit the lateral movement of the switch-rails, substantially as described.

6. The combination of sliding chairs J and laterally forcing or holding devices F G or H I, substantially as described.

7. The combination of rails C D, and switch-lever N, and intermediate mechanism, by which the said rails are moved simultaneously, substantially as and for the purpose specified.

8. The hook-guide M or M′ on the switch-rails, in connection with the stationary angular chair L or L′, secured to the cross-ties, to secure either of the switch-rails when out of use.

In testimony of which invention I hereunto set my hand.

FREDRIC C. WEIR.

Witnesses:
F. MILLWARD,
J. L. WARTMANN.