A. B. ADAMS, G. E. CAIN & R. SIMONTON.

Railway-Switch.

No. 206,066. Patented July 16, 1878.

Fig. 1.

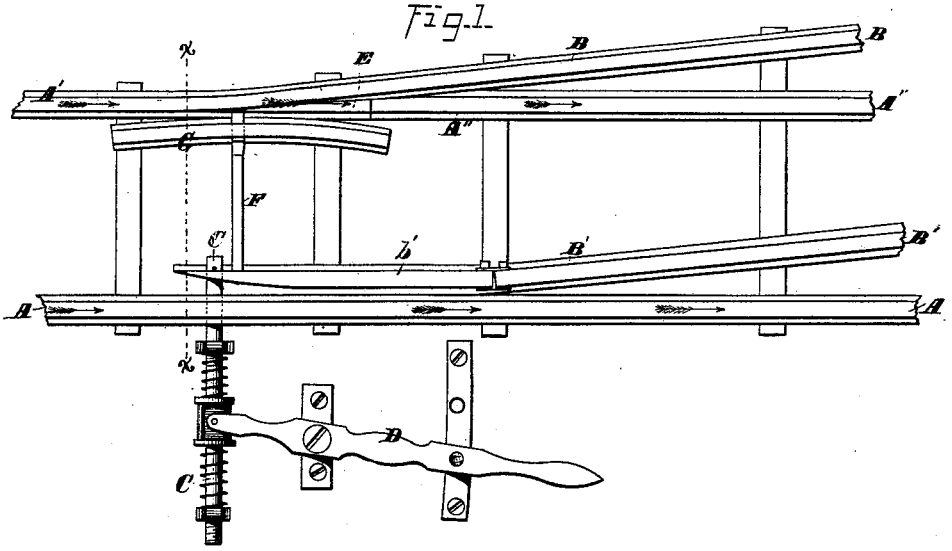


Fig. 2.

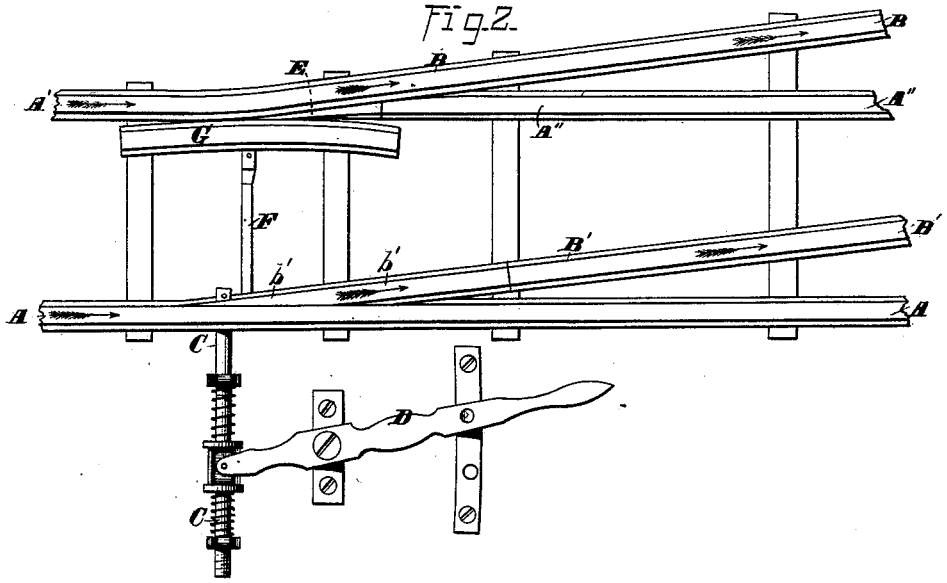


Fig. 3.

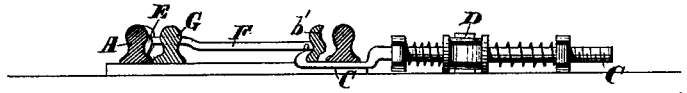
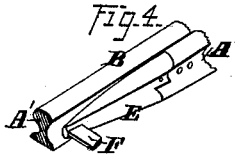


Fig. 4.



WITNESSES:

Jas. E. Hutchinson.

Henry C. Hazard.

INVENTORS.

A. B. Adams G. E. Cain & R. Simonton,

by Pinckney & Co their Attys.

UNITED STATES PATENT OFFICE.

ALEXANDER B. ADAMS, GEORGE E. CAIN, AND ROBERT SIMONTON, OF HUNTINGTON, INDIANA.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **206,066**, dated July 16, 1878; application filed August 9, 1877.

To all whom it may concern:

Be it known that we, ALEXANDER B. ADAMS, GEO. E. CAIN, and ROBERT SIMONTON, all of Huntington, Huntington county, Indiana, have invented certain new and useful Improvements in Railway-Switches; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figures 1 and 2 are plan views of our improved switch, and show, respectively, said switch closed and open. Fig. 3 is a cross-section upon lines *x x* of Fig. 1; and Fig. 4 is a perspective view of the guard-bar.

Letters of like name and kind refer to like parts in each of the figures.

Our invention is an improvement upon a similar invention for which Letters Patent No. 153,032 were granted to us upon the 14th day of July, 1874; and it consists in providing, at the end of the disconnected inner rail of the main track, a pivoted guard-bar, and combining the same with the other parts, substantially as and for the purpose hereinafter specified.

In the annexed drawing, A represents the outer continuous rail of the main track, and A′ and A″ the inner rails of the same, the latter being separated at a point where the rail B of the side track branches off, so as to permit the flanges of the car-wheels to pass through the space thus left.

The side rail B and the rail A′ of the main track in front of the switch are preferably made continuous, the necessary angle being given by bending; but the operation of parts will be the same if said rails are made separate and have their ends connected together at the point where said side rail curves away from said main rail.

The second or inner rail B′ of the side track terminates in a pivoted section, *b′*, which, at its forward end, is cut away upon the side next to the outer rail A of the main track, so that when brought against the latter said cut-away end shall fit so closely against said main rail as to present no shoulder against which the flange of a car-wheel can strike. In order that the strength of the thin end of said section *b′* may be increased, it is caused to conform to and fit within the groove in the side of said main rail A.

The pivoted section *b′* has its forward end moved against or away from the rail A by means of a horizontal bar, C, that is secured to the former and passes beneath the latter, and is connected to or with one end of an operating-lever, D; and it will be seen that, when occupying the position shown in Fig. 1, said pivoted rail does not interfere with the movement of cars along the main track in the direction indicated by arrows; but when moved to the position shown in Fig. 2, said rail will turn the wheels from said main track upon the side track.

Heretofore it has been customary to taper the end of rail A″; but experience has shown that said end could not be continued sufficiently near the rail A′ to insure the safe passage of car-wheels from one to the other, the flanges of said wheels being liable to pass upon the wrong side of said rail A″ when approaching from the direction indicated by the arrows.

Another disadvantage has arisen from the impracticability of making the end of the rail A″ sufficiently sharp to prevent the wheel-flanges from impinging against said end, the result being that said rail end would soon become sufficiently blunted to cause a considerable shock to be given a car whenever one of its wheels struck the same, while occasionally a wheel will be caused to mount said rail and to leave the track.

Another difficulty arises from the construction named when a car with a bent axle passes over the switch, the wheel being almost certain to drop into the space in front of the rail A″, and to cause much damage to the running-gear of the car.

To obviate these difficulties, the end of the rail A″ is carried sufficiently forward to enable the tread of a car-wheel to have a bearing thereon before leaving the side rail B; and to said end we pivot one end of a bar, E, which from thence extends forward to the point of intersection between the main rail A′ and said side rail B, and from its pivoted end forward decreases in thickness and in height, as seen in Fig. 4.

The forward end of the bar E is connected with the front portion of the rail-section *b′* by means of a rod, F, which is secured to and

extends between said parts, so that when the latter is moved against or away from the rail A said guard-bar E will have its front end moved away from or against the switch-rail B.

The shape of the guard-bar E is such as to cause it to form a continuation of the line of the inner sides of the rails A′ and A″ when placed in the position shown in Fig. 1, while, when placed in the position shown in Fig. 2, the outer side of said bar is parallel with the inner side of the bar B, and furnishes a bearing for the outer sides of the wheel-flanges, and conducts the same to the chamfered outer face of the end of the rail A″.

The car-wheels do not bear upon the upper side of the guard-bar, no portion of said wheels except their flanges being permitted to touch said bar under ordinary circumstances; but in case of a crooked axle or a loose wheel, the wheel will not, as is usually the case, drop into the space in front of the rail A″, but will rest upon said guard-bar and be raised to and caused to run upon said rail.

A guard-rail, G, is secured in position opposite to the junction between the rails A′ and B, and against the same rests the forward end of the guard-bar E when said bar is moved inward to the position shown in Fig. 2, said rail thus forming a support for said bar, and preventing the latter from being crowded outward by the pressure of the wheel-flanges.

Having thus fully set forth the nature and merits of our invention, what we claim as new is—

In an automatic safety-switch in which the inner rail A″ of the main track extends forward nearly to the outer rail B of the side track, and in connection therewith sustains and supports car-wheels passing from the rails A′, a tapering guard-bar, E, pivoted upon or at the front end of said inner rail A″, and operating as a guide for the flanges of the car-wheels, substantially as and for the purpose specified.

In testimony that we claim the foregoing we hereunto set our hands this 7th day of August, A. D. 1877.

A. B. ADAMS.
G. E. CAIN.
ROBT. SIMONTON.

Witnesses:
ISAAC E. HAVILAND,
D. C. ANDERSON.