(No Model.) 2 Sheets—Sheet 1.

J. W. VANDEGRIFT & F. L. CAMPBELL.

RAILWAY SWITCH.

No. 346,789. Patented Aug. 3, 1886.

Fig. 1.

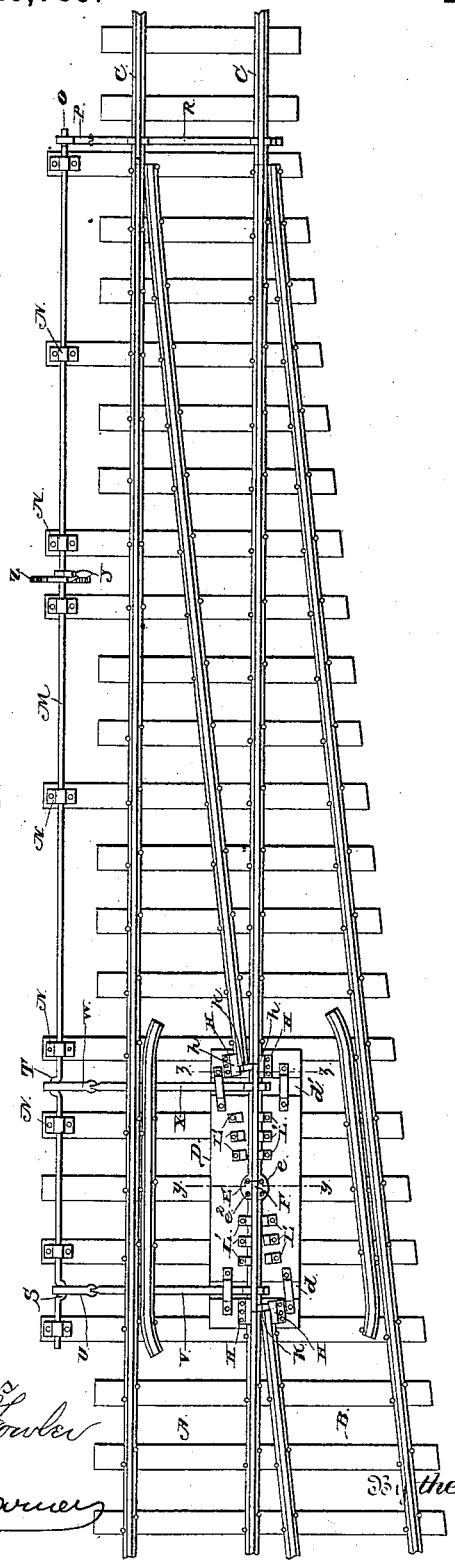
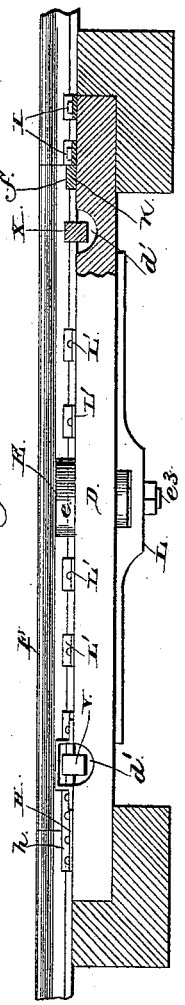


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

J. W. VANDEGRIFT & F. L. CAMPBELL.

RAILWAY SWITCH.

No. 346,789. Patented Aug. 3, 1886.

Fig. 3.

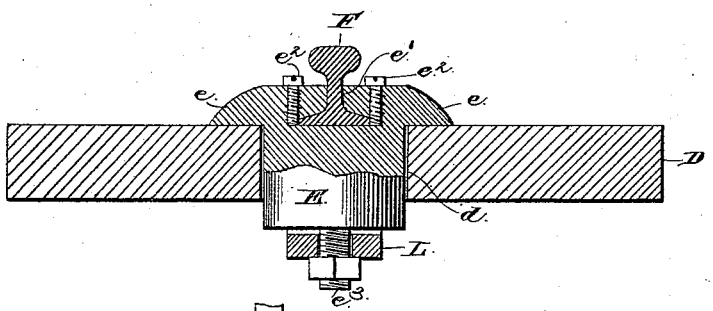


Fig. 5.

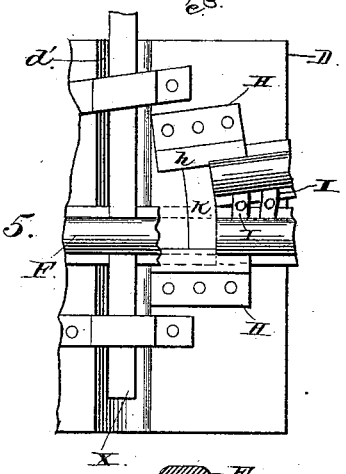
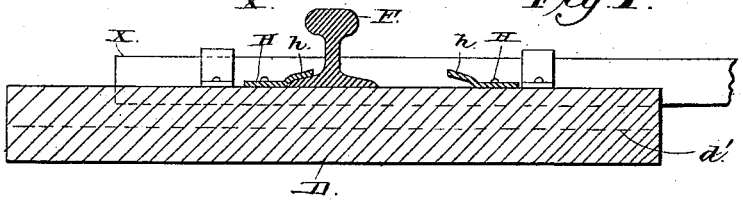


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN WALDRON VANDEGRIFT AND FRANK LEWIS CAMPBELL, OF PULASKI CITY, VIRGINIA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 346,789, dated August 3, 1886.

Application filed April 26, 1886. Serial No. 200,201. (No model.)

To all whom it may concern:

Be it known that we, JOHN WALDRON VANDEGRIFT and FRANK LEWIS CAMPBELL, citizens of the United States, residing at Pulaski City, in the county of Pulaski and State of Virginia, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification.

Our invention relates to an improvement in railway-switches; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of our invention. Fig. 2 is a side elevation, partly in section, of the frog-plate. Fig. 3 is a vertical transverse sectional view taken on the line *y y* of Fig. 1. Fig. 4 is a transverse section taken on the line *z z* of Fig. 1. Fig. 5 is a plan view of one end of the frog-plate.

A represents the main track, and B represents the side track.

C represents the switch-rails, which are of the usual construction, and are adapted to be moved laterally, so as to align with either the main or the side track.

D represents the frog-plate, which is provided with a central opening, *d*, and with transverse grooves *d'* on its upper side near its ends.

E represents a pivotal clamp, which is journaled in the opening *d* of the frog-plate. The upper end of this pivotal clamp is provided with a flange, *e*, which bears upon the upper side of the frog-plate, and in the upper portion or head of the clamp is made a transverse grooved recess, *e'*, to receive the lower portion of the shifting rail F. From the lower end of the shank or stud of the pivotal clamp projects a threaded bolt, e^3, which passes through a plate, L, which is secured to the under side of the frog-plate. A nut is then screwed onto the threaded bolt, and bears against the plate L, thus securely clamping the pivotal clamp E to the frog-plate, while allowing it to be partly rotated therein.

The converging ends of the main and switch rails are secured to the ends of the frog-plate by means of plates H, which form chairs and are bolted to the frog-plate, and are provided at their inner edges with flanges or clamps *h*, that bear upon the upper side of the lower flanges of the rails. Brace-plates or chairs I are bolted to the ends of the frog-plate between the converging ends of the main and side rails, and bear on the opposing lower flanges of the said rails, thus serving, in connection with the plates H, to firmly lock the rails to the frog-plate, as will be very readily understood.

The under sides of the ends of the shifting rail F are recessed or rabbeted, as at *f*, and bear upon the segmental guideways or rails K, the ends of which are secured between the chair-plates H, and the outer sides of the said guide-rail bear against the ends of the main and side rail A and B. The function of these segmental guideways or rails is to prevent the ends of the shifting rail from binding against the upper side of the frog-plate. In order to prevent the said shifting rail from working longitudinally in the grooved recess *e'* of the pivotal clamp E, we pass set-screws e^2 down in threaded openings alongside the recess, the said screws bearing in notches made in the sides of the bottom flange of the rail.

L' represents a series of stop-plates, which are secured on the frog-plate, and are arranged radially between the center of the clamp E and the inner ends of the plates H, the function of the said stop-plates being to limit the movement of the shifting rail, and also to brace the same and prevent it from being bent by the wheels of the advancing train.

M represents a rock-shaft, which is arranged alongside the main track, and is journaled in suitable bearings, N, which are secured on the outer ends of the cross-ties. One end of this rock-shaft is provided with a crank, O, which is connected by means of a rod, P, with the shackle-bar, R, which connects the free ends of the switch-rails C. At the opposite end of the rock-shaft M is a crank, S, which extends in the same direction as the crank O, and at a suitable distance from the said crank S is another crank, T, which extends in the opposite direction from the said crank S. The former, S, is connected by means of a rod, U, to a shackle-bar, V, which is secured to one end of the pivoted shifting rail, and works in one of the grooves, *d'*, and the latter crank, T, is connected by means of a rod, *w*, with a

shackle-bar, X, which is attached to the opposite end of the pivoted shifting rail, and works in the opposite groove, *b'*. A hand-lever, Y, is attached to the rock-shaft M, and is provided with means for locking it to a segment notched plate, Z, of the usual construction, which is attached to the projecting end of one of the cross-ties. The lever Y is preferably provided with the usual target.

It will be readily understood from the foregoing that when the hand-lever Y is used to rotate the rock-shaft, the switch-rails C and the shifting rail F will be moved simultaneously, so as to throw the switch-rails and the shifting rail from the main track to the side tracks, or vice versa.

No claim is made herein, broadly, to the combination, in a railway-switch, of the pivoted shifting rail and the guideways on which the ends of the said shifting rail are supported, as this, we are aware, is not broadly novel.

Having thus described our invention, we claim—

1. The combination of the frog-plate having the stops, the pivoted clamp E, secured to the frog-plate, and having the recess *e'* in its head, the depending stud and the bolt, the clamping-plate L on the lower side of the frog-plate, and through which the bolt passes, and the clamping-nut screwed on the bolt and bearing against the clamping-plate, and the shifting rail secured in the groove *e'*, substantially as described.

2. The combination of the frog-plate, the segmental guideways or rails secured thereto, and the shifting rail pivoted to the frog-plate, and having its ends bearing on the guide plates or rails, substantially as described.

3. The combination of the frog-plate, the pivoted clamp E, attached thereto, and having the groove *e'* in its head, the segmental guideways or rails K, secured to the frog-plate, and the shifting rail secured in the groove *e'*, and having the rabbeted ends *f* bearing on the plates or rails K, substantially as described.

4. The combination, in a railway-switch, of the main and side tracks, the switch-rails C, the frog-plate having the segmental guides at its ends, the clamp pivoted to the said plate, the shifting rail secured in the clamp, and having its ends resting on the guideways, the rock-shaft M, having the oppositely-extending cranks S and T, connected to opposite ends of the shifting rail, and the crank O, connected to the switch-rail C, and means for rotating the said rock-shaft, for the purpose set forth, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JOHN WALDRON VANDEGRIFT.
FRANK LEWIS CAMPBELL.

Witnesses:
OSCAR LANGHON,
J. P. FIZER.