

(No Model.)

W. N. THOMPSON.

RAILWAY FROG.

No. 391,990.

Patented Oct. 30, 1888.

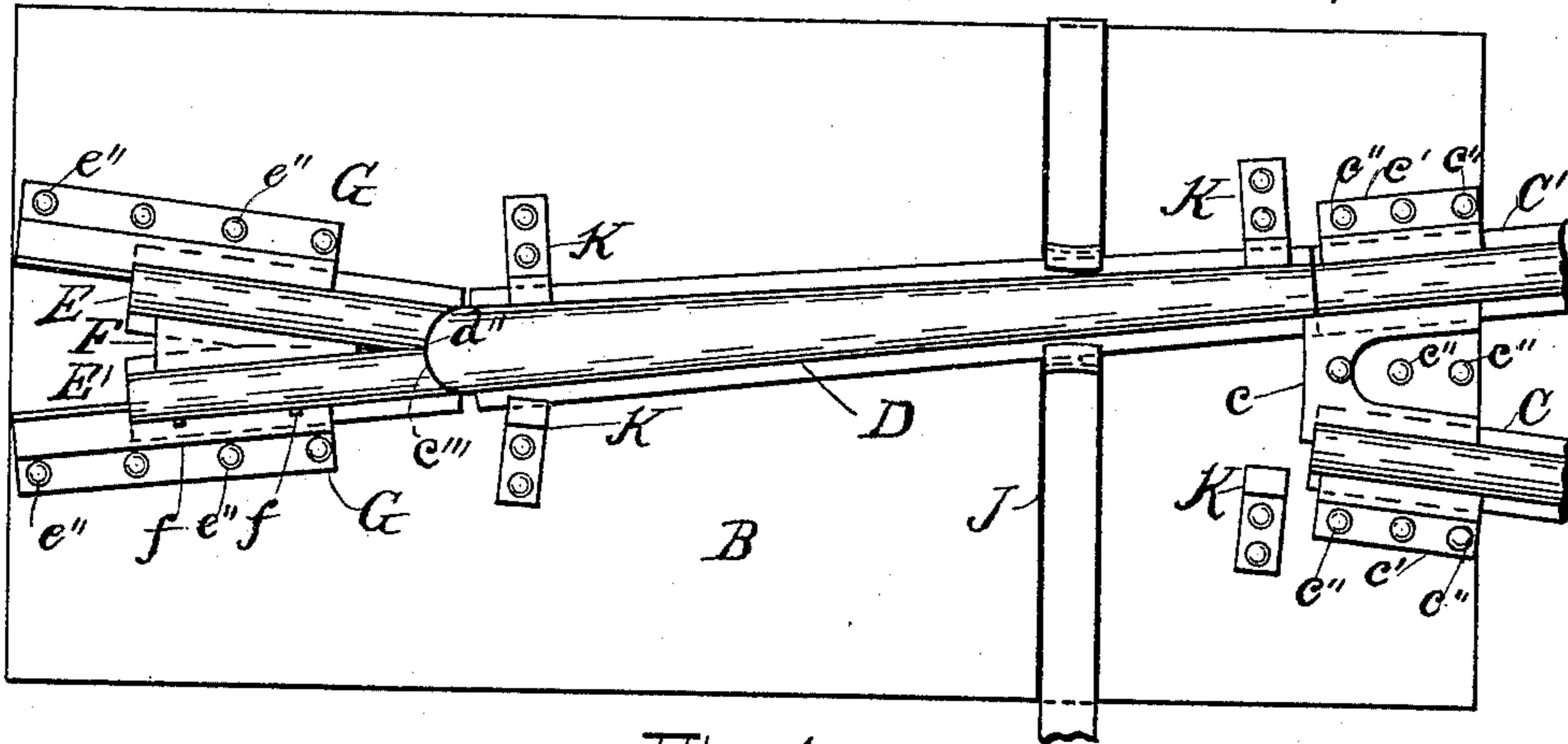


Fig. 1.

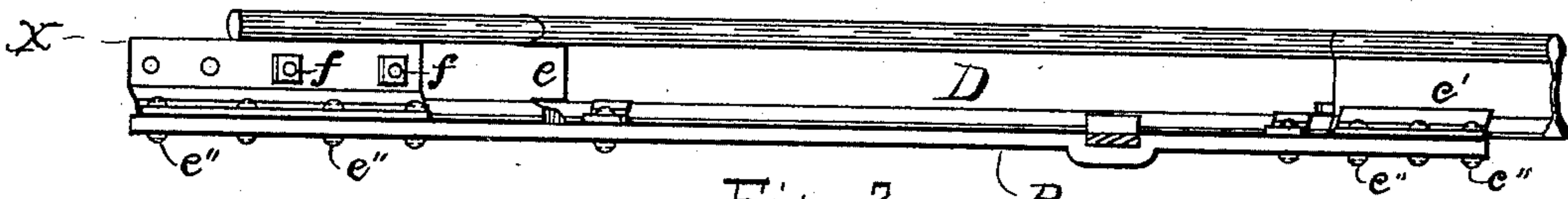


Fig. 2.

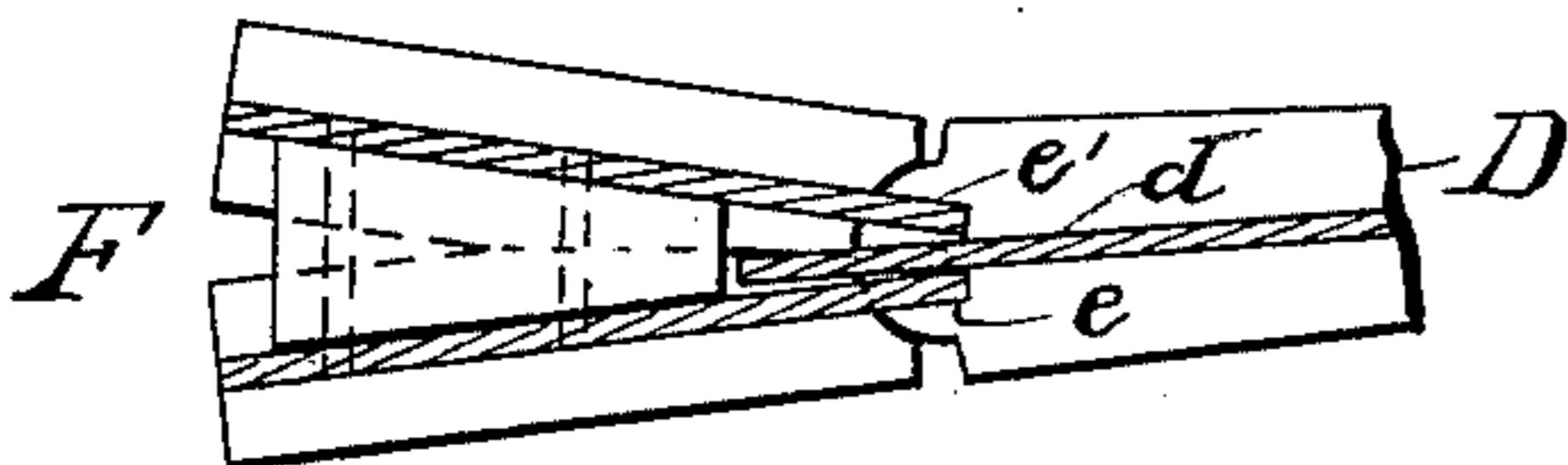


Fig. 3.

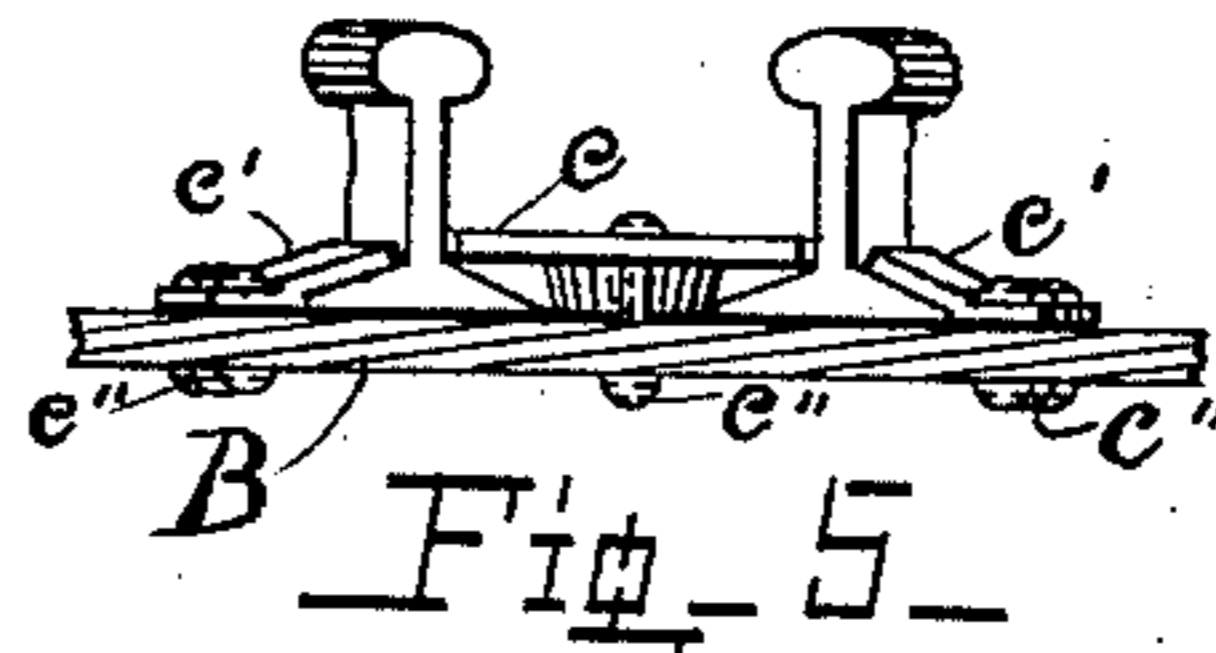


Fig. 5.

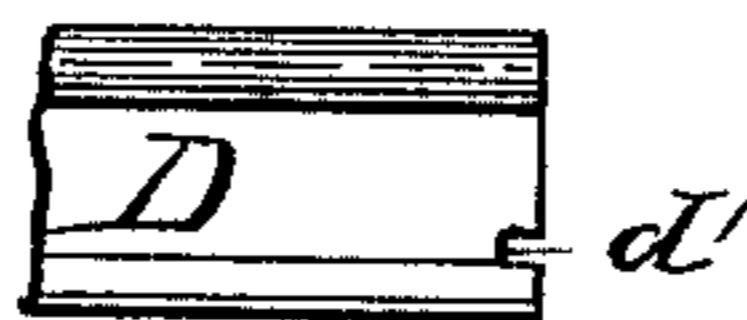


Fig. 7.

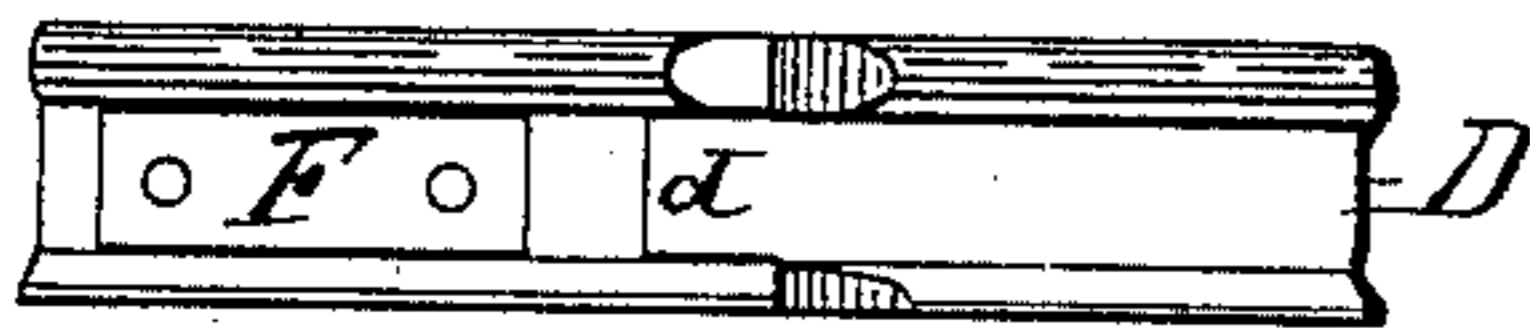


Fig. 4.

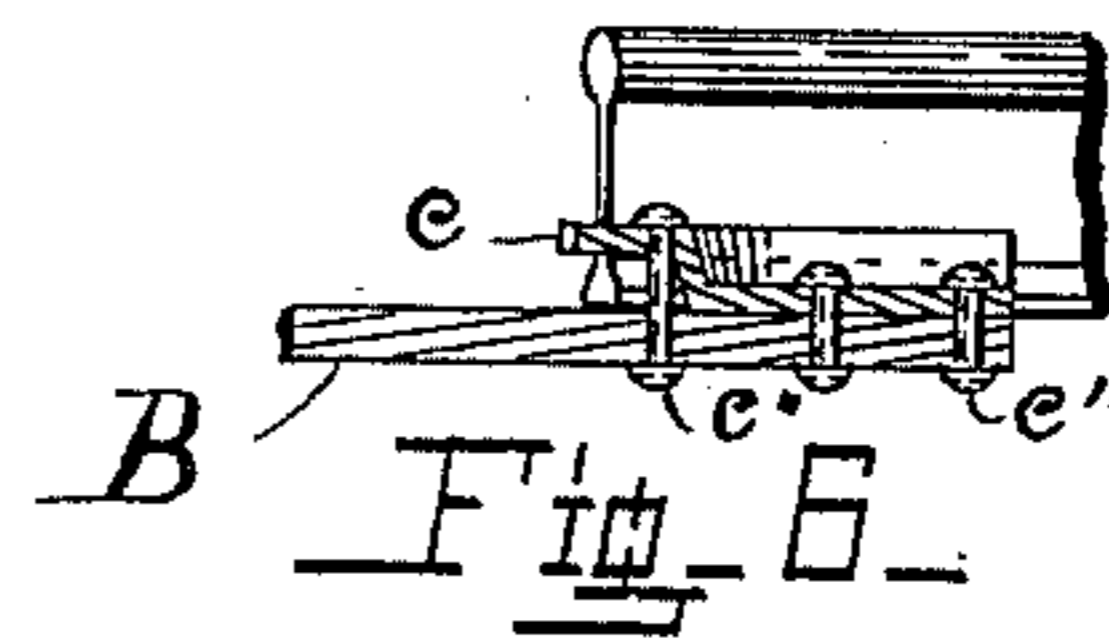


Fig. 6.

Witnesses.

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By his Attorney

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# UNITED STATES PATENT OFFICE.

WILLIAM N. THOMPSON, OF OXANNA, ALABAMA.

## RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 391,990, dated October 30, 1888.

Application filed July 30, 1888. Serial No. 281,460. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. THOMPSON, a citizen of the United States, residing at Oxanna, in the county of Calhoun and State of Alabama, have invented a new and useful Railway-Frog; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to switch-frogs, and the device is intended to be operated in conjunction with switches and by connecting mechanism.

The object is to make either of the two rails that cross continuous and on the same plan in order that either track, when used, may be in perfect condition for service, and to have the parts by which the continuity of either rail is secured operate automatically with the switch.

The invention consists of a base plate, a gate-rail, and mechanism for operating and controlling the gate-rail, which mechanism, as well as the plate and gate-rail, is shown in the plan, Figure 1, and in the side elevation, Fig. 2. The details are shown in the plan, Fig. 3, of the pivoted end of the gate-rail and the space-block between the fixed rails, the rails being in horizontal section on the line X, Fig. 2; in the elevation, Fig. 4, showing the parts shown in Fig. 3, except one fixed rail; in the end view, Fig. 5, of the rails, shown on the right in Figs. 1 and 2, and contiguous parts; in Fig. 6, in which the parts shown in Fig. 5 are shown in vertical section, central between the rails; and in side elevation in Fig. 7 of one end of the gate rail disconnected from the other parts.

In the several figures like reference-marks refer to corresponding parts in the several views.

B is the base-plate, the dimension to be governed by the angle at which the rails cross each other—that is to say, the rails C and C' should be placed about four inches between the nearest points of their heads. The length of the gate-rail will therefore vary with the angle at which the rails cross, and consequently the length required for base-plate B

will vary. The rails C and C' are held down by the plates *c*, between the rails, and *c'*, on the outer side of the rails. The preferable way to attach these plates is by rivets *c''*, and they should permit the removal of the rails by being drawn out and the insertion of others.

The rails C and C' may be ordinary rails without any preparation, except as to length; but the rails E and E' should be made comparatively short, as shown, and be bolted together with the bolts *f*, passing also through the space-block F and the flanged fish-plates G. The fish-plates G should have sufficient length and holes to join ordinary rails to the rails E and E', as shown in Fig. 2.

The pivoted end of the gate-rail D should be widened somewhat, as shown in Fig. 1, and have a cylindrical end, *d''*, on the top and bottom flanges, the radii being about the same as the width of the head of the rail at that end, as shown in Figs. 1 and 3, the head and bottom flanges of the rails E and E' having a rounded-out surface, *c'''*, to fit the end of the gate-rail, as shown in these figures. The webs *e*, *e'*, and *d* project somewhat beyond the base and top flanges at the point of meeting of those rails, as shown in Figs. 3 and 4, the webs *e* and *e'* projecting to about the turning-point of the gate-rail for the purpose of assisting in the prevention of lateral movement, and the web *d* projecting, preferably, though not necessarily, beyond the rounded end of the top and bottom flanges of the gate-rail D. With the rails E and E' bolted firmly together and fastened to the plate B, preferably by the rivets *e''*, through the flanges of the fish-plates, and the longitudinal movement of the gate-rail being prevented, the coincidence of the rails E and E' will not be disturbed by any strain that will be brought against it.

The longitudinal movement of the gate-rail is prevented by its abutment against the rails C and C' and by the plate *c*, which projects beyond the ends of the rails C and C', the projecting edge being straight horizontally, but curved laterally, the radius of curvature being the length of the gate-rail from its pivotal point. The free end of the gate-rail has a notch, *d'*, (shown in Fig. 7,) in its end, that suits in width, depth, and position the plate *c*, as shown in Fig. 2.

The free end of the gate-rail is shifted to co-

incide with either the rail C or C' by the bar J, that should slide in a groove in the plate B, and the gate-rail is stopped at either extreme position that it is required to assume by the  
5 stops K. The position of the gate-rail must be governed by the gate-rails of the switch, and should be so connected as to work automatically with them.

Having thus described my invention, what I  
10 claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a railway-frog, the rails E and E', having the rounded-out surface  $c'''$ , the gate rail D, having the cylindrical end  $d''$  and the notch  
15  $d'$ , the rails C and C', and the plate  $c$ , all combined substantially as shown and described, and for the purpose specified.

2. In a railway-frog, the combination of the rails E and E', having projecting ends  $e$  and  $e'$ , the gate-rail D, and the rails C and C'. 20

3. In a railway-frog, the combination of the rails C and C', the plates  $c$  and  $c'$ , the gate-rail D, pivoted coincidently with the rails E and E' and having notch  $d'$ , the sliding bar J, the space-block F, the fish-plates G, and the bolts  
25  $f$ , substantially as shown and described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM N. THOMPSON.

Witnesses:

W. S. LARNED,  
T. C. STEPHENS.