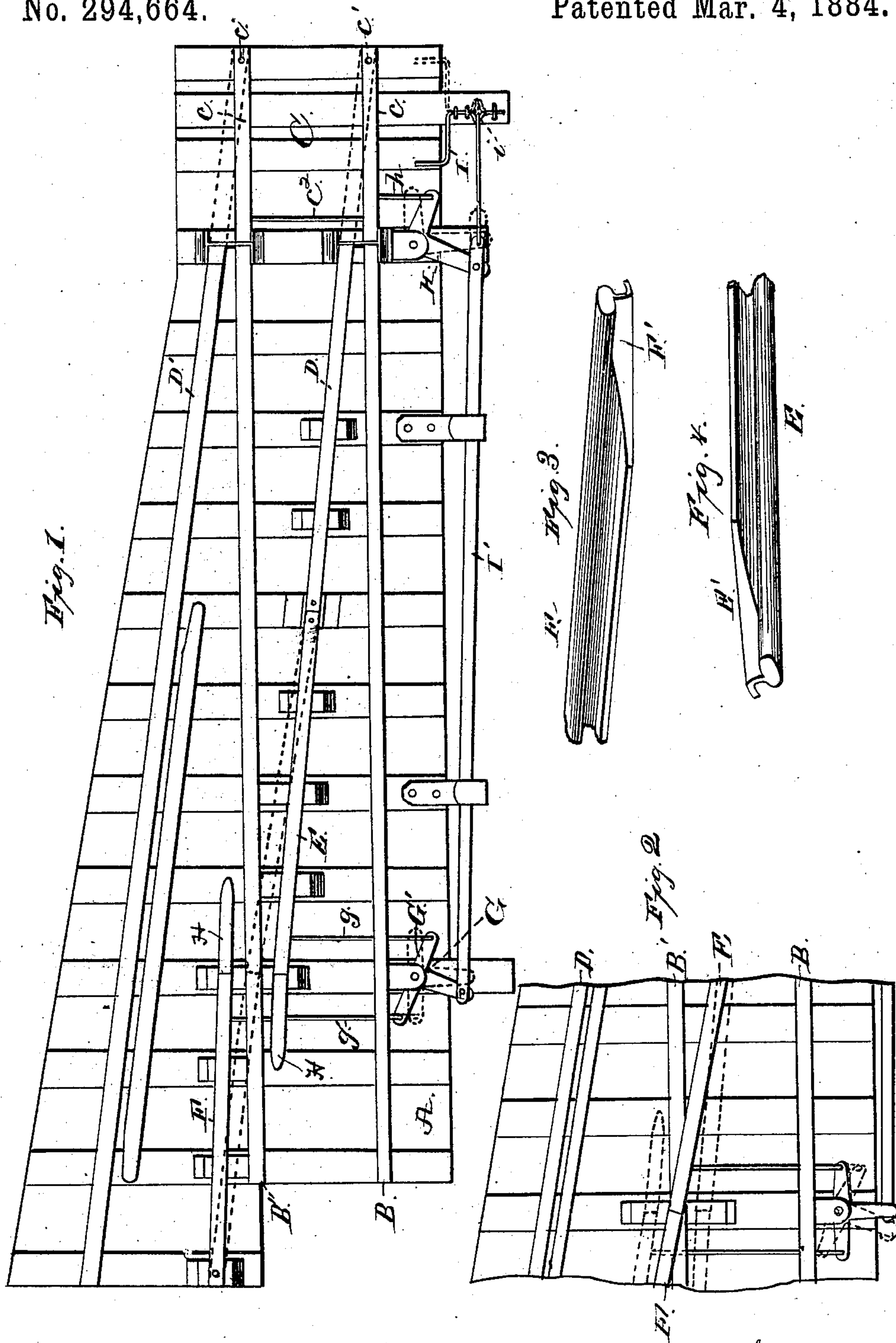


(No Model.)

J. F. PENROD.  
RAILROAD FROG.

No. 294,664.

Patented Mar. 4, 1884.



Witnesses  
N. A. Clark.  
D. R. Cowles.

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Att'y



# UNITED STATES PATENT OFFICE.

JOHN F. PENROD, OF DERRY, WESTMORELAND COUNTY, PENNSYLVANIA.

## RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 294,664, dated March 4, 1884.

Application filed September 15, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. PENROD, a citizen of the United States, residing at Derry township, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Frogs; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in railway-crossings, and has for its object to provide devices whereby to obviate the necessity of the ordinary frog commonly used in connection with railway-switches.

In the drawings, Figure 1 is a plan view of a section of a railroad constructed according to my invention. Fig. 2 is a detached plan view of the portion in the region of the movable rails; and Figs. 3 and 4 are detail perspective views of the adjacent portions of the movable rails, all of which will be described.

I have shown the railway formed on a suitable base-support, A. The fixed rails B B' form a continuous track, at one end of which I construct the switch-section C, composed of rails c c, having one end pivoted at c', and their opposite ends movable into line with the fixed rails B B', or with the rails D D', arranged as clearly shown. The rail D begins close to the rail B, and extends thence at an angle toward the rail B', and terminates at a point about midway the rails B B', as will be seen. The movable rail E is pivoted at one end on the base, close to the end of the rail D, and its opposite end is movable to and from the rail B', and has its under side next the said rail B' cut away or formed with the mortise E', which fits the tread of the rail B' when the rail E is moved thereon, as will be described.

The rail F is arranged on the opposite side of rail B' from rail E, and its end next the mortised end of said rail E is provided with a mortise, F', corresponding to that in the rail E, as clearly shown in Fig. 3. The opposite end of rail F is pivoted on the base, and the said

rail in its operation is moved into and out of a parallel line with the rail D', as will be seen from Fig. 1. The pivots of rails E F are in line with the rail D, so that when the said rails are moved into the position indicated in dotted lines, Fig. 1, the rails E F will form a continuation of said rail D. The rails E F are inclined up slightly from their pivoted to their mortised ends, so that the treads of said ends, when moved up to the rail B', will extend over the tread of said rail B' and provide a safe passage for the wheels thereover. In order to operate the movable rails, I provide the T-shaped lever G, pivoted on a suitable support, and having the ends of its arms G' connected by rods g g' with respectively the rail E and the rail F, so that as the said lever is rocked on its pivot it will force the said rails into line and across the rail B', or apart, as will be seen from the drawings. An L-shaped lever, H, is pivoted on the base opposite the moving end of the section C, and is connected with said section by rod h, the rails c c of said sections being connected together at their moving ends by means of rod c'. The switch-lever I has the horizontal shaft journaled on the base, and constructed with a crank, i. A bar, I', connects the levers G, H, and I, so that as the lever I is moved its motion is communicated simultaneously to levers G H.

In operation, it will be seen that when the lever I is in position shown in Fig. 1 the rails of the switch-section are in line with the fixed rails B B'. Now, if it is desired to throw the train from rails c c onto rails D D', the lever I is moved over, as indicated in dotted lines. This by means of lever H throws rails c c into line with rails D D', and by means of lever G draws the adjacent ends of rails E F together and across the rail B', as will be seen.

It is obvious that the moving or adjacent ends of the rails E F need not be grooved, provided they are supported sufficiently high to slide entirely onto the rail B'; but I prefer to groove or mortise them, as shown and before described, as thereby a neater and easier crossing is provided.

It is also obvious that the means of adjusting the moving rails and switch may be varied without departing from the principles of cross-

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ing the fixed rail, as before described; but the devices shown are simple and coact efficiently to secure the switching adjustments hereinbefore set forth, and are therefore preferred.

5 In order to protect the movable ends of the rails E F from the action of the wheel-flanges of a train passing on the main line, I provide the short rails or sections H H. These sections are secured on the track in position to  
10 register with the movable ends of the pivoted rails, as clearly shown.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

15 In a railway-crossing, substantially as de-

scribed and shown, the combination, with the unbroken main-line rail and the pivoted movable rails E F, of the protecting rails or sections H H, secured on the track in position to register with the movable ends of the rails E 20 F when the latter are adjusted away from the fixed rail, substantially as described, and for the purposes set forth.

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

JOHN F. PENROD.

Witnesses:

W. R. BOYERS,  
F. M. ALTER.