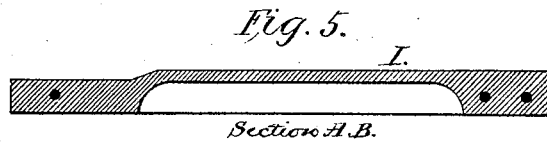
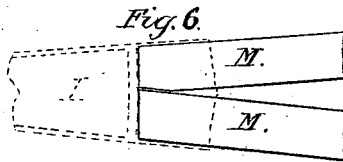
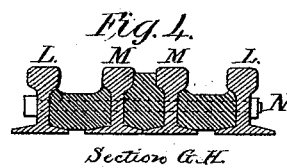
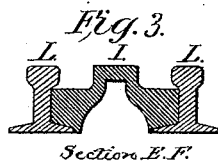
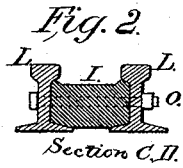
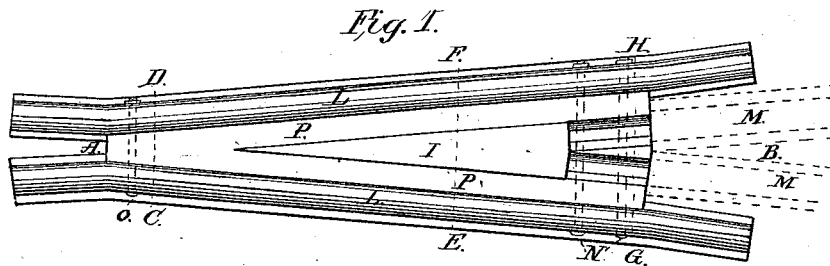


W. L. LAMBORN.

Railroad Frog.

No. 159,763

Patented Feb. 16, 1875.



Witnesses:  
Geo. H. Graham.

Inventor:  
William L. Lamborn  
By Daniel Breed  
Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM L. LAMBORN, OF STEEL WORKS, PENNSYLVANIA.

## IMPROVEMENT IN RAILROAD-FROGS.

Specification forming part of Letters Patent No. **159,763**, dated February 16, 1875; application filed October 30, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM L. LAMBORN, of Steel Works, Dauphin county, in the State of Pennsylvania, have invented an Improvement in Railroad-Frogs; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings forming part of this specification.

My invention consists in a novel construction and arrangement of frog-point, filling, reversible wing-rails, track-rails, and bolts for connecting the whole, as will be more fully set forth below.

I make the frog-point and filling all in one piece, which itself serves as a chair, thus saving expense. In the heel of this solid casting I make slots with suitable punching, to receive the track-rails, and fasten them in place by means of bolts passing through the ordinary punchings of the track-rails, and also through the wing-rails, which are made reversible, the same bolts being put into the same holes in fastening the reversed rails.

It is well known that railroad-frogs are very liable to break, and also to wear out very soon, and the wing-rails are also liable to be cut by the sudden stroke and side thrust of the wheels.

The chief objects of my invention are to overcome the above-mentioned difficulties, and also to make a frog that cannot easily get out of place if broken in several pieces.

In the accompanying drawings, Figure 1 is a top view of my railroad-frog in place between the two wing-rails, the position of track-rails, to be connected with the heel of the frog, being shown in dotted lines. Figs. 2, 3, and 4 are transverse sections of Fig. 1, on the lines C D, E F, and G H, respectively. Fig. 5 is a longitudinal section of the frog on the line of the center of the frog.

In the construction of my improved railroad-frog, I make a solid point, I, of cast-steel, extending from wing-rail to wing L L, as seen in Fig. 1. This frog fits under the head of the rail, and also against the flange and web of the rails, as shown in Figs. 2, 3, and 4. The cast-steel point I is provided with slots for receiving the ends of the track-rails M M, which are inserted into the heel of the frog a sufficient distance to admit of two fish-

bolts, N, passing from outside to outside of the wing-rails L, through the fish-holes or punchings in the ends of the track-rails, as shown in Figs. 1 and 4 in dotted lines.

The frog is so constructed that the grooves P allow the flanges of the wheel to bear lightly in passing, and thus partly guide the wheel and prevent or diminish the stroke of the wheel against the wing-rails, which stroke ordinarily wears or cuts away the wing-rails very rapidly, and makes it necessary to repair by new wing-rails.

A very important improvement is the use of reversible wing-rails.

It will be seen in Fig. 1 that the wing-rails L have both ends bent alike, and when one end is badly worn the ends of these wing-rails may be reversed by simply removing and afterward replacing the bolts N and O.

The principal advantages of my improvements are simplicity of construction, solidity and durability of the frog and wing-rails, with all the connected parts, and the ease with which repairs may be made when necessary.

It will be noticed that my solid frog may be broken crosswise into several pieces, and yet these pieces will be held in place by the rails and bolts. The wear being partly on the flange of the wheel in the grooves P, both the frog and the side rails are more durable.

Fig. 6 shows a bottom view of the joint between the frog and track-rails, the flanges of the rails being cut away, so as to fit them better together, and allow the heads of the rail to come in proper place to fit the frog.

Having thus fully described my invention, I claim—

1. The solid frog-piece I P, extending from wing-rail to wing-rail, without any separate filling-piece, and provided with heel slots and punchings, substantially as set forth.

2. The reversible wing-rails, in combination with the solid piece I P and the bolts N, passing through the heel of said solid frog-piece, the usual punchings of the track-rails, and also through the wing-rails, thus binding all firmly together, substantially in the manner and for the purposes set forth.

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