

(No Model.)

H. W. BYERS.
AUTOMATIC RAIL FROG.

No. 508,867.

Patented Nov. 14, 1893.

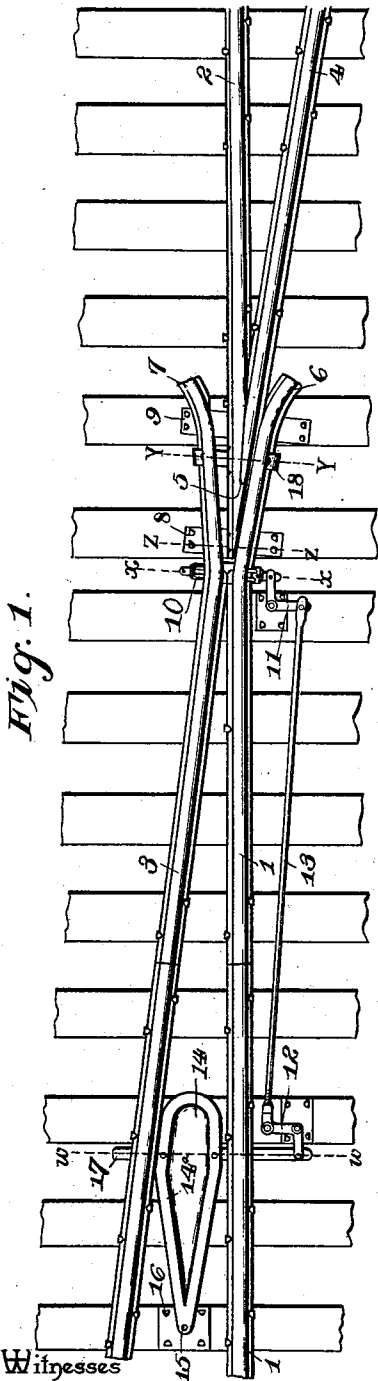


Fig. 1.

Fig. 4.

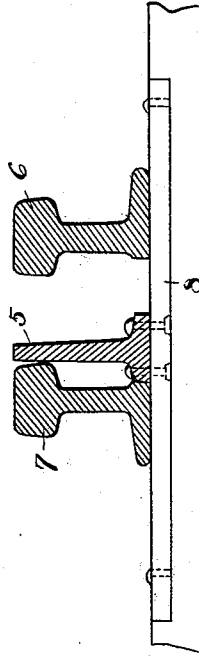


Fig. 2.

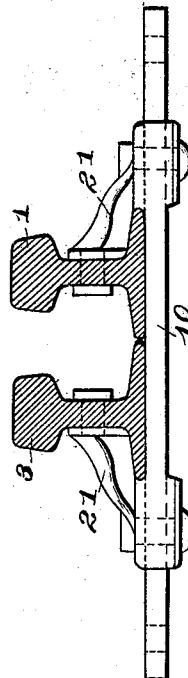


Fig. 5.

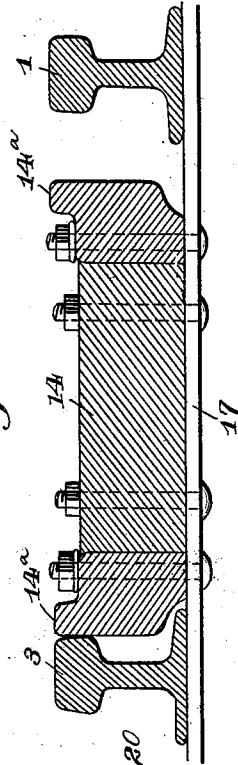
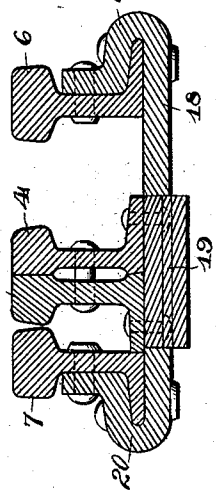


Fig. 3.



Inventor

Henry W. Byers,

By *h* & *s* Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HENRY W. BYERS, OF NEW CASTLE, LAWRENCE COUNTY, PENNSYLVANIA.

AUTOMATIC RAIL-FROG.

SPECIFICATION forming part of Letters Patent No. 508,867, dated November 14, 1893.

Application filed May 29, 1893. Serial No. 475,867. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. BYERS, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Automatic Continuous Rail-Frog, of which the following is a specification.

The invention relates to improvements in automatic continuous rail frogs.

The object of the present invention is to improve the construction of rail frogs, and to provide an automatic continuous one capable of being operated by wheel flanges, and adapted to present a continuous rail at all times to the wheels of a passing train.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a plan view of an automatic continuous railroad frog embodying the invention. Fig. 2 is a transverse sectional view on line $x-x$ of Fig. 1. Fig. 3 is a similar view on line $y-y$ of Fig. 1. Fig. 4 is a sectional view on line $z-z$ of Fig. 1. Fig. 5 is a sectional view on line $w-w$ of Fig. 1.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 and 2 designate sections of a main rail, and 3 and 4 designate similar sections of a side rail. The sections 2 and 4 meet at the point of interruption of the rails to form a frog point 5; and the rails 1 and 3 are connected together near their adjacent ends, which diverge and are located on opposite sides of the point 5 to form wings 6 and 7. The winged ends of the rails 1 and 3 are arranged at an angle to the rest of the rail, and these rails are slidingly mounted on the cross-ties, which have plates 8 and 9 forming bearing surfaces. The sliding rails are connected at their angles by a clamp 10, and are adapted to move laterally to bring either one of them in contact with the point 5 to form a continuous rail, and to open the frog at the proper side to permit the passage of the wheel flanges. The point 5 terminates slightly in advance of the angles of the sliding rails 1 and 3, and the latter which are operated or actuated by the wheel flanges, are connected by bell-crank le-

vers 11 and 12 and a rod connection 13 with an oscillating contact frame 14, which is pivotally mounted at 15 between the sliding rails. The oscillating contact frame is substantially egg-shaped, having a point and a heel and being pivoted at the former on a plate 16, and having secured to it near its heel a cross-bar 17 which is extended and connected pivotally to one arm of the bell-crank lever 12. When the contact frame 14 is against one of the sliding rails, there is sufficient space between it and the other sliding rail to permit the passage of the wheel flanges; and it is adapted to be engaged by the wheel flanges and moved laterally to slide the rails 1 and 3 to arrange properly the wings 6 and 7, as will be readily understood.

The wings 6 and 7 are arranged the proper distance apart, and are prevented from separating by a clamp 18 consisting of a flat plate slidingly mounted in a casing 19 and having its ends 20 bent upward against, bolted to, and conforming to the configuration of the outer faces or sides of the wings. The ends 20 terminate below the heads of the wings at the outer sides thereof, and the casing 19 is bolted to the bottom flanges of the rails forming the point 5. By this construction the wings 6 and 7 are maintained in proper relation with the point 5, and are prevented from spreading.

The clamp 10 consists of a flat plate, and knees 21, which are bolted to the rails and the plate at the outer sides of the former.

When the oscillating contact frame 14, which is preferably constructed of a single piece of metal, is adjacent the rail 3, the wing of the latter is away from the point to form a continuous main rail of the sections 1 and 2; and car-wheels passing over the rail 3 and approaching the frog from that side, coming in contact with the oscillating contact frame will move the same laterally in contact with, or nearly so, the rail 1, thereby forming a continuous rail of the sections 3 and 4. A train approaching the frog from the opposite direction will properly operate the same by its wheels coming in contact with the divergent ends of the wings 6 and 7.

It will be apparent that the frog is simple and inexpensive in construction, and positive, reliable and automatic in its operation, and

that a continuous rail is presented to the wheels.

5 The bottom flanges of the wings 6 and 7, which are formed integral with the rails 1 and 3, are cut away at the inner sides of the wings to enable the latter to approach the point 5. The end or tip of the point 5 is formed integral with the rail 2, and the rail 4 is let into the adjacent side of the rail 2, as shown.

10 The oscillating or shifting contact frame consists of a solid plate of metal provided on its upper face at its edges with marginal flanges 14^a to be engaged by the flanges of the wheels.

15 Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

20 What I claim is—

1. The combination of the rail sections 2 and 4 converging and forming a point, converging rail sections 1 and 3 having sliding portions connected together and provided with divergent portions arranged on opposite sides of the point and forming wings, a clamp consisting of a plate extending beneath the point and the wings and having its ends bent upward, conforming to the configuration of

and secured to the other sides of the wings, 30 a casing secured to the point and receiving the clamp, a pivoted oscillating contact frame arranged between the rails 1 and 3 and consisting of a solid plate provided at its upper face with marginal flanges, and bell-crank levers connected with each other and with the contact frame and the sliding rails, substantially as described. 35

2. The combination of the rail sections 2 and 4 converging and forming a point, converging rail sections 1 and 3 having sliding portions connected together and provided with divergent portions arranged on opposite sides of the point and forming wings, a clamp consisting of a plate extending beneath the point and the wings and having its ends bent upward, conforming to the configuration of and secured to the outer sides of the wings, a casing secured to the point and receiving the clamp, and means for operating the sliding rails, substantially as described. 40 45 50

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY W. BYERS.

Witnesses:

J. M. BUTZ,

CHAS. F. MOSSMAN.