

(No Model.)

2 Sheets—Sheet 1.

H. O'SHEA.
RAILWAY FROG.

No. 520,861.

Patented June 5, 1894.

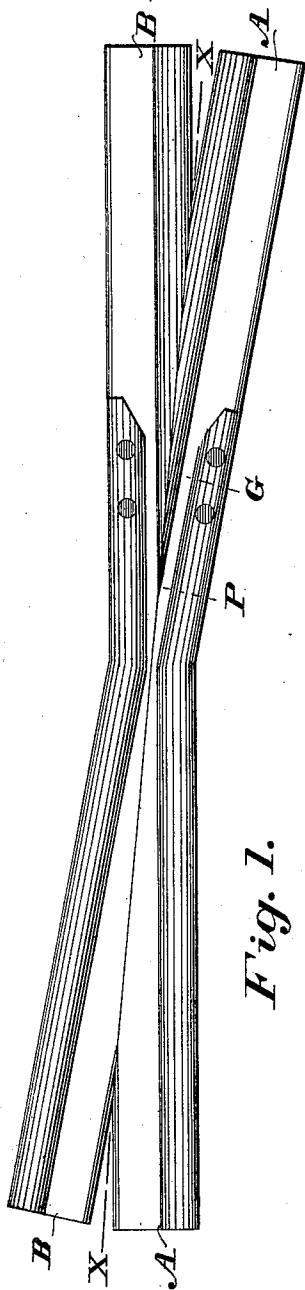


Fig. 1.



Fig. 2.

Fig. 3.

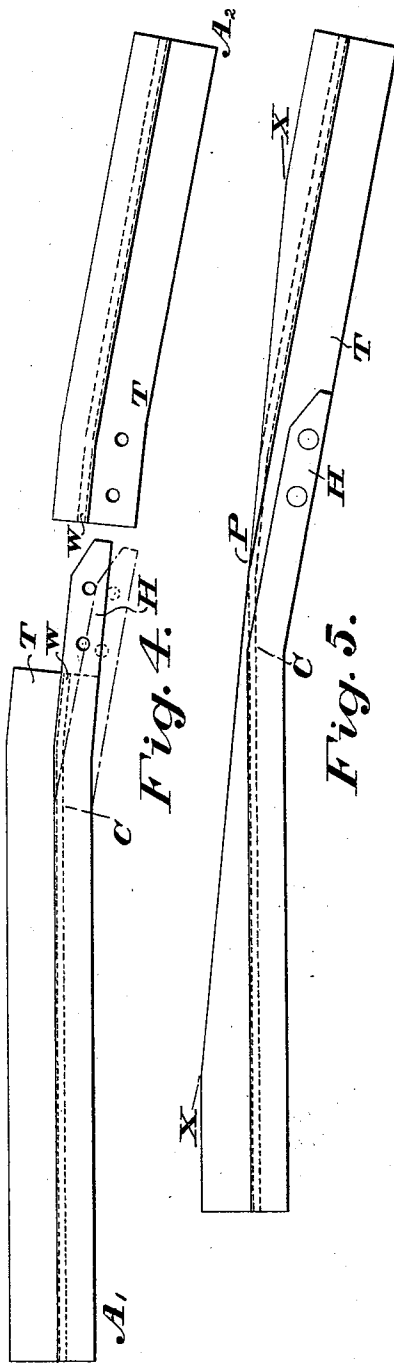


Fig. 4.

Fig. 5.

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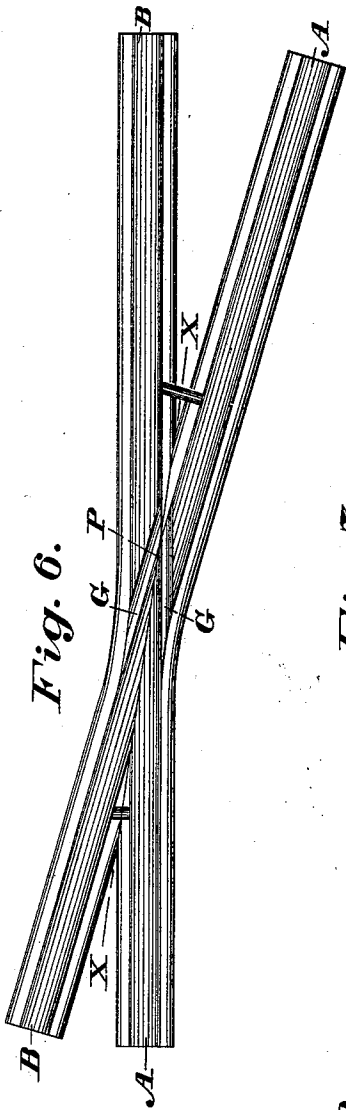


Fig. 6.

Fig. 7.

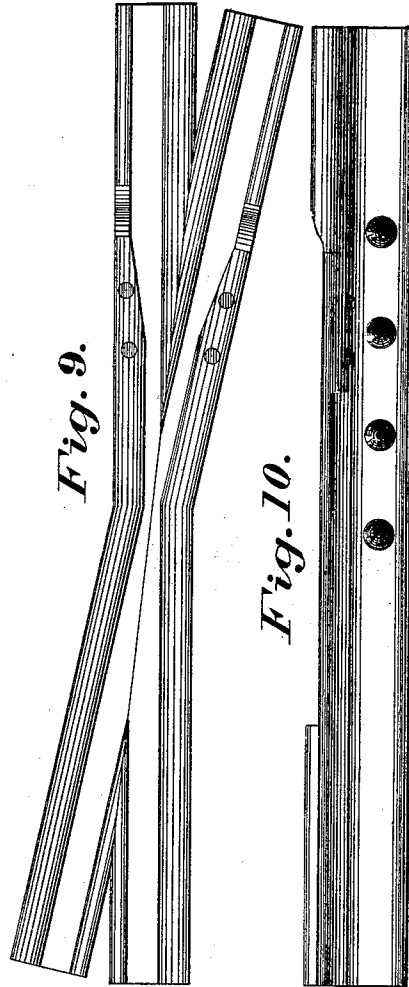


Fig. 9.

Fig. 10.

Fig. 8.



Fig. 11.



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UNITED STATES PATENT OFFICE.

HENRY O'SHEA, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
JOHNSON COMPANY, OF SAME PLACE.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 520,861, dated June 5, 1894.

Application filed December 15, 1893. Serial No. 493,723. (No model.)

To all whom it may concern:

Be it known that I, HENRY O'SHEA, a citizen of the United States, residing at Johnstown, county of Cambria, and State of Pennsylvania, have invented a new and useful Improvement in Railway-Frogs, of which the following is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to an improvement in railway frogs and method of constructing the same and has for its object to provide a frog having but few parts and one in which the girder feature of the web of the rail is largely preserved. As ordinarily constructed frogs are formed of two or more rails cut and fitted together. When two rails are used the top half of one and the lower half of the other must be cut away or they are "halved" into each other as it is called. This of course greatly weakens both rails and renders them more liable to fracture at that point. When constructed of three or more pieces the multiplicity of pieces renders them liable to derangement and loosening of the various fastenings. By my method I am enabled to produce a frog composed of two integral members the girder webs of which are continuous from end to end, the two webs passing beneath the point and supporting it so that that part of the frog which supports the traffic of both lines of rails is the stiffest and strongest of the structure.

Referring to the drawings in which the same letters refer to the same parts: Figure 1 represents a top view of a frog embodying my invention, said frog being composed of side bearing girder rails. Fig. 2 is a side view and Fig. 3 an end view of same. Figs. 4, 5 and 6 are elements of the structure as hereinafter explained. Figs. 7, 8 and 9 represent a frog constructed of T rail in accordance with my invention and Figs. 10 and 11 show one composed of girder guard rails.

In general my frog is composed of two rails bent to the proper angle and having enough of one side of each cut away to allow them to be secured together by bolts or rivets through both the webs. Fig. 6 illustrates this in the case of a T rail frog, A and B being the two rails which after being bent to the proper an-

gle for the frog are planed or otherwise cut away so that they shall fit together on the line X—X. This cutting allows the two webs *w—w* to come together beneath the point P. The two members are then secured together by the rivets or bolts shown passing through both webs. The grooves G. permit the passage of the flange of the car wheel. This construction serves when the section of the rail is symmetrical on both sides of the web, as a T rail or a center bearing girder rail whether the same be provided with guards or not, but when a side bearing rail such as is commonly laid in street railways, in which term is included a side bearing guard rail, is used something more must be done as it will be seen that on one end of either rail the wheel flange travels on the right hand side of the head and on the other end of the same rail the flange is on the left hand side of the head.

To provide a rail such as is needed I proceed as follows: In Fig. 4 A', A² represent two pieces of side bearing girder rail adapted to form the rail A Fig. 1. It will be seen that in A', the head is on one side while in A² the head is on the other side. In A' the head H is allowed to project as shown and it is severed from the remainder of the rail on a level with the top of the tram T back to a point as C. The ends of the two rails are then bent at the proper angle and the webs *w* and lower flanges welded together, in fact as much of the two sections as are symmetrical on both sides of the web are united. This welding of the two together unites them into one integral rail one end having the head on one side and the other end having the head on the other side as desired. The head H is now riveted or otherwise secured to the tram T and further stiffens the junction. If desired the head H. may be welded to the tram T. This integral rail now has all the surplus metal cut away to the line X—X Fig. 5 and is then ready to be secured to the corresponding rail B. of Fig. 1. The portion H. of the head serves as guard or wing rails and supports the car wheel as it passes the point P. In a case as shown in Fig. 9 when the rail has an elevated guard instead of a flat tram it would be necessary to adapt the guard to re-

ceive the head. In the drawings it is shown cut away but a slight modification of the rail might require the guard to be bent down instead, or otherwise treated. It will of course
 5 be seen that various shapes of rails might require slight modifications in the cutting and fitting together but such changes would readily suggest themselves to one skilled in the art.

10 By the wing I mean all that portion of rail from where the main track rail joins the frog portion as A' Fig. 4, and by point rail I mean all that rail lying from the point to where the main track rail joins as A² Fig. 4.

15 The term side bearing rail where used in the specification and claims is intended to cover that class of girder rails in which the head projects to one side in part or in whole of the web and is not symmetrical thereto,
 20 such as the side bearing groove rail, side bearing tram rail and side bearing guard rail.

The word tram is used to designate that part of the rail projecting from the web at the side opposite to the head and which in a
 25 guard or grooved rail is sometimes designated the floor or groove.

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

30 1. A railway frog composed of two rails bent and fitted together so that both webs are continuous beneath the point, substantially as described.

2. A railway frog composed of two side
 35 bearing girder rails bent and fitted together so that both webs are continuous beneath the point.

3. A railway frog composed of two rails bent and fitted together, each rail comprising

a wing portion and a point portion the webs
 40 of both rails being continuous.

4. A railway frog composed of two side bearing girder rails, each rail forming the wing and point portions of the same side of
 45 the frog.

5. A railway frog composed of two side bearing girder rails, each rail forming the wing and point portions on the same side of the frog, the web of each rail being formed
 50 continuous from wing portion to point portion.

6. In a railway frog a rail bent to the desired angle of the frog, one end of the rail forming a point portion and the other end forming a wing portion of the frog.

7. In a railway frog, a rail bent to the desired angle of the frog, one end of the rail forming a point portion and the other end forming a wing portion of the frog, the web
 60 of the rail being formed continuous between the wing and the point portions.

8. In a railway frog composed of side bearing girder rails, a rail bent to the desired angle of the frog, the head of the rail being formed on opposite sides of the web on the
 65 two ends of the rail.

9. In a railway frog composed of side bearing girder rails, a rail bent to the desired angle of the frog, the head of the rail being discontinuous, the two portions being on opposite
 70 sides of the web, and the head of one end overlapping and being secured to the tram of the other end.

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

HENRY O'SHEA.

Witnesses:

D. H. DAVIES,
 CHAS. V. BOWERS.