

(No Model.)

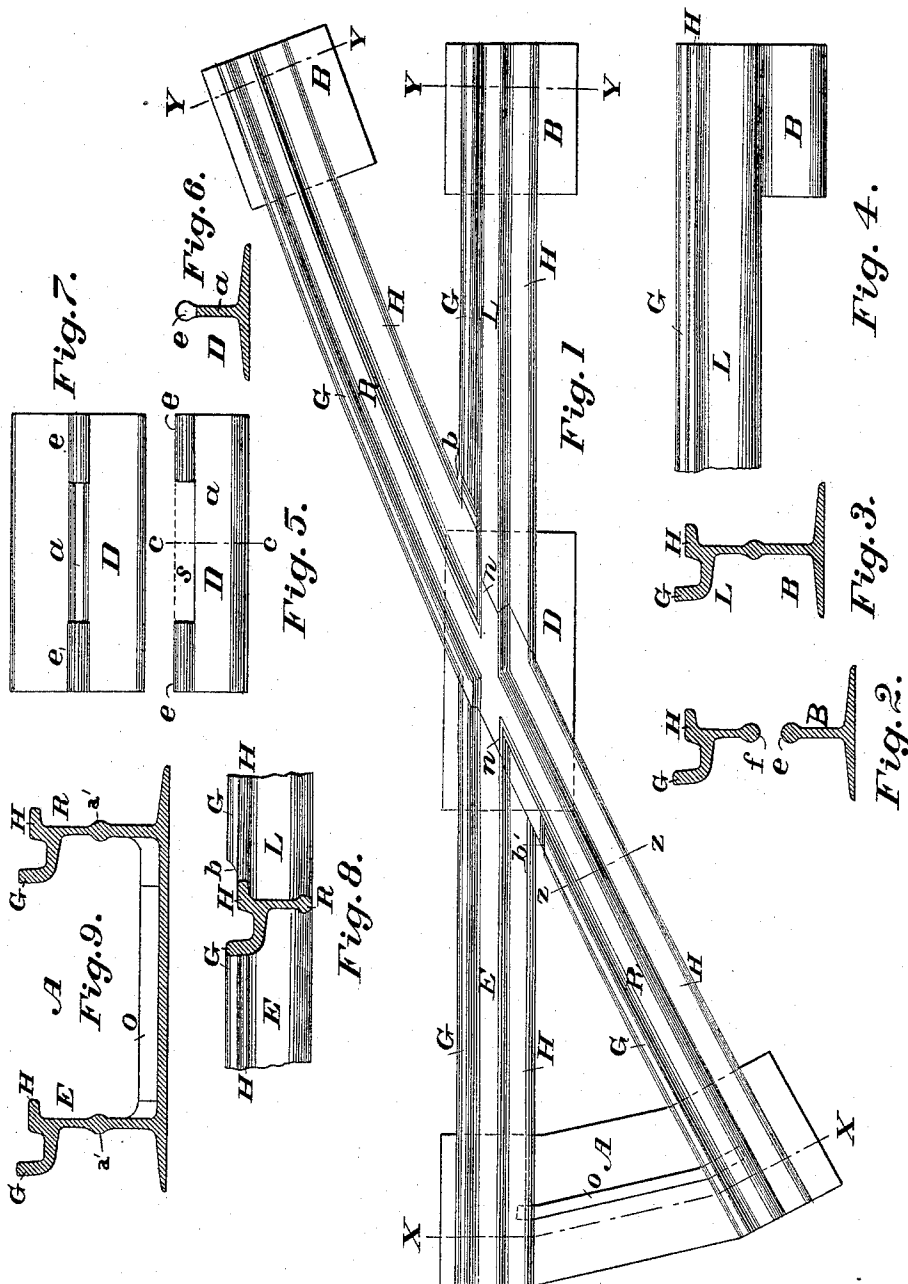
2 Sheets—Sheet 1.

A. J. MOXHAM.

FROG OR CROSS FOR RAILROAD CROSSINGS.

No. 477,684.

Patented June 28, 1892.



WITNESSES:

WITNESSES:
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INVENTOR

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BY

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(No Model.)

2 Sheets—Sheet 2.

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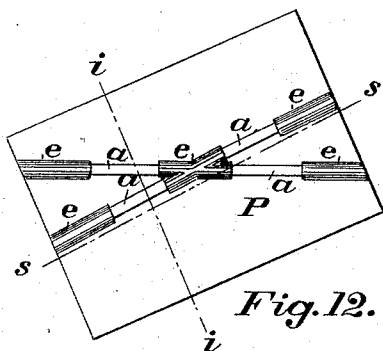


Fig. 12.

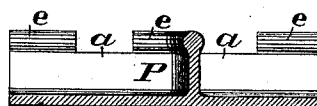


Fig. 13.

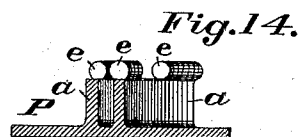


Fig. 14.

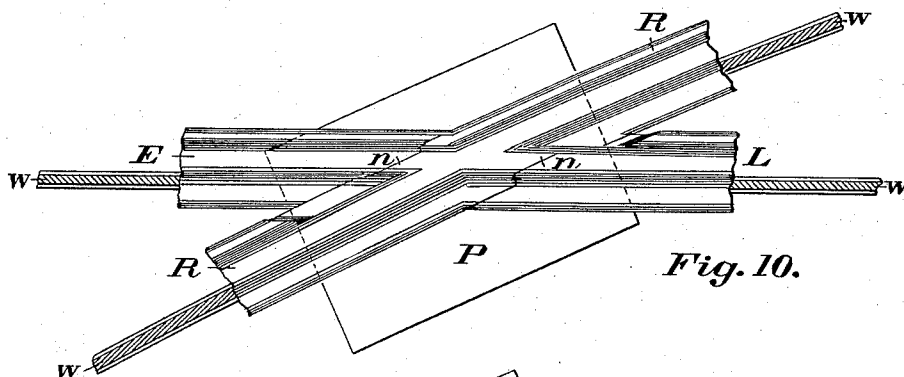


Fig. 10.

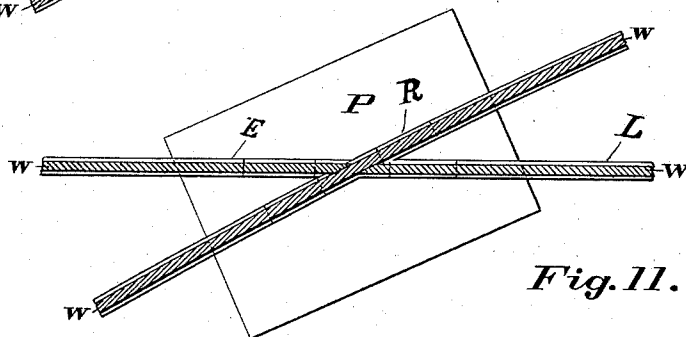


Fig. 11.

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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

FROG OR CROSS FOR RAILROAD-CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 477,684, dated June 28, 1892.

Application filed September 22, 1891. Serial No. 406,489. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Frog or Cross for Railroad-Crossings, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to make a railway cross or frog having certain parts welded together.

The invention will first be described in detail, and then particularly set forth in the claims.

In the accompanying drawings, Figure 1 shows in plan the curve cross or frog on one side of the track. Fig. 3 is a cross-section taken through either of the rails in Fig. 1 at the line Y Y. Fig. 2 shows in cross-section the parts of Fig. 3 before being united, as herein-after described. Fig. 4 is a side elevation of the end of the rail L, as shown at the right-hand end of Fig. 1. Fig. 5 shows in side elevation one of the chairs for the rails herein-after described. Fig. 6 is a cross-section taken through Fig. 5 at the line c c. Fig. 7 is a view in plan of Fig. 5. Fig. 8 is a part side elevation and part cross-section taken through Fig. 1 at the line z z. Fig. 9 is a cross-section taken through Fig. 1 at the line x x. Fig. 10 is a view in plan showing the curve cross or frog provided with a chair of modified form, part of the head portion of the rails being removed. Fig. 11 is a view in plan similar to Fig. 10, the head portion of the rails being entirely removed. Fig. 12 is a view in plan of the modified form of chair shown in Figs. 10 and 11. Fig. 13 is a cross-section taken through Fig. 12 at the line s s. Fig. 14 is a cross-section taken through Fig. 12 at the line i i.

In said figures the several parts are respectively indicated by reference-letters, as follows:

The letter R indicates the curved or through rail of the frog, and the letters E L two pieces of straight rail abutted to the rail R and welded thereto at the points of contact, as shown in Figs. 1 and 8. Said rails R E L are each provided with a head H and super-elevated guard G. The guard G of the rail L is cut away at the point of contact with the rail R to a level with the head H of the latter rail,

as shown at b, Figs. 1 and 8, and the guard of the rail R is similarly cut away to a level with the head of the rail E, as shown at b'. At the points n n the head and guard of the through-rail R are entirely cut away down to the level of the floor of the groove between them in order to allow the passage of wheels passing over the rails E L.

At the right-hand side of Fig. 1, under the rails L R, chairs or supports B are provided, which are welded to said rails, Fig. 2 showing one of the rails and its chair before being welded together and Fig. 3 showing the rail and chair after welding.

At the left-hand side of Fig. 1, instead of two single-web chairs being used, one double-web chair A is welded to the webs of the rails E R, as clearly shown in Fig. 9, the letters a' a' indicating the points of welding. This chair A is shown as provided with a strengthening-web O, though this may be omitted, if desired. It is obvious that instead of one chair being used at one end of the frog and two at the other, as shown, that a single chair, such as A, may be used at each end, or two chairs, such as B, be used at each end.

At the point of junction of the rails E L R, as shown in Fig. 1, a chair or support D is provided similar in shape to the chair B. As shown in Figs. 5, 6, and 7, a portion of the vertical web a of this chair is cut away, as indicated as s, in order to avoid the necessity of making a weld of greater length than is necessary. I do not, however, herein claim such cutting away of the chair, but reserve the same as the subject of another application for Letters Patent. The chair D is not welded to the web of the through-rail R, but to the webs of the rails E L.

Figs. 10 to 14, inclusive, show a form of chair P. This chair P is provided with intersecting webs a, the upper portions of said webs being partially cut away, as shown, for the purpose indicated, in describing the chair D. If the chair P is used, it is welded to the webs w of the straight rails E L and also to the web w of the through-rail R.

The welding of the various parts together, as above described, can be done by any suitable method, process, means, or act of welding, and as this welding may be done in the shop all the parts can be put together before

shipment and the frogs laid in the track without the necessity of joining any of their parts after shipment or securing any detachable or intermediate chairs thereto. A light, strong, and durable frog is thus provided, ready to be secured, through the medium of its chairs integral therewith, directly to the cross-ties set deeply below the surface, thus making a frog suitable for securing in track with deep-webbed girder-rails, such as it is desirable to use for street-railroads.

The bulbs or beads shown on the rails and chairs at the points *fe* may be omitted, if desired; but their presence contributes to an easier and more perfect weld. I do not herein claim such bulbs or beads, reserving the same as the subject of another application for Letters Patent.

The rails shown in the drawings are such as are known to the trade as "girder guard-rails;" but I do not confine myself to the use of any particular form of rail in the construction of the frog, as any suitable shape of rail having the web or girder form may be used.

The chairs also may be varied in form without departing from this invention and may be made by any suitable method or process, such as rolling, forging, casting, or otherwise.

Although the frog is shown in the drawings as composed of one through-rail and two crossing rail-pieces welded together, it is obvious that, if desired, the frog can be composed of four rail-pieces welded together at the crossing-point, or two rails may be suitably cut to fit each other at the proper angle at their junction and then welded together at said point to form the crossing desired, without departing from this invention.

Having thus fully described my said invention, I claim—

1. A railroad cross or frog formed of rails welded together at the point at which they cross each other.

2. In a railroad cross or frog, a through-rail having welded thereto two pieces of rail forming the crossing-rail.

3. A railroad cross or frog formed of rails welded at the crossing-point, the upper surfaces of said rails at said point being cut away, as described.

4. In a railroad cross or frog, a through-rail having welded thereto two pieces of rail forming the crossing-rail, the upper surfaces of said rails at the point of junction being cut away, as described.

5. A railroad cross or frog having a support welded thereto at the junction of the rails.

6. A railroad cross or frog having supports or chairs welded to the rails at their divergent ends.

7. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and supports or chairs welded to said through and crossing rails at their divergent ends.

8. A railroad cross or frog having a double-

webbed chair or support welded to the rails at their divergent ends.

9. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and a double-webbed chair or support welded to said through and crossing rails at their divergent ends.

10. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and a support or chair welded to both pieces of said crossing-rail at or about the juncture with the through-rail.

11. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and supports welded to said through-rail on both sides of its juncture with the crossing-rail.

12. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and a chair or support provided with a web, said web being welded to said through-rail on both sides of its juncture with the crossing-rail.

13. A railroad cross or frog composed of three parts, consisting of a through-rail and two pieces of crossing-rail welded together at their common junction and having a support welded to one or more of said parts at said junction.

14. A railroad cross or frog provided with a chair having crossing-webs welded to said cross.

15. A railroad cross or frog formed of a through-rail and two rail-pieces forming the crossing-rail and a chair or support provided with two crossing-webs, one of which is welded to the two pieces forming the crossing-rail, the other welded to the through-rail on each side of the juncture with the crossing-rail.

16. A railroad cross or frog having a support welded thereto at the crossing-point of the rails and supports or chairs welded to said rails at their divergent ends.

17. A railroad cross or frog formed of a through-rail having welded thereto two rail-pieces forming the crossing-rail, a support welded thereto at the juncture of the through and crossing rails, and supports or chairs welded to said rails at their divergent ends.

18. A railroad cross or frog having a support welded thereto at the crossing-point of the rails and a double-webbed support welded to said rails at their divergent ends.

19. A railroad cross or frog formed of a through-rail having welded thereto two rail-pieces forming the crossing-rail, a support welded thereto at the juncture of the through and crossing rails, and a double-webbed support welded to said rails at their divergent ends.

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Witnesses:

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