

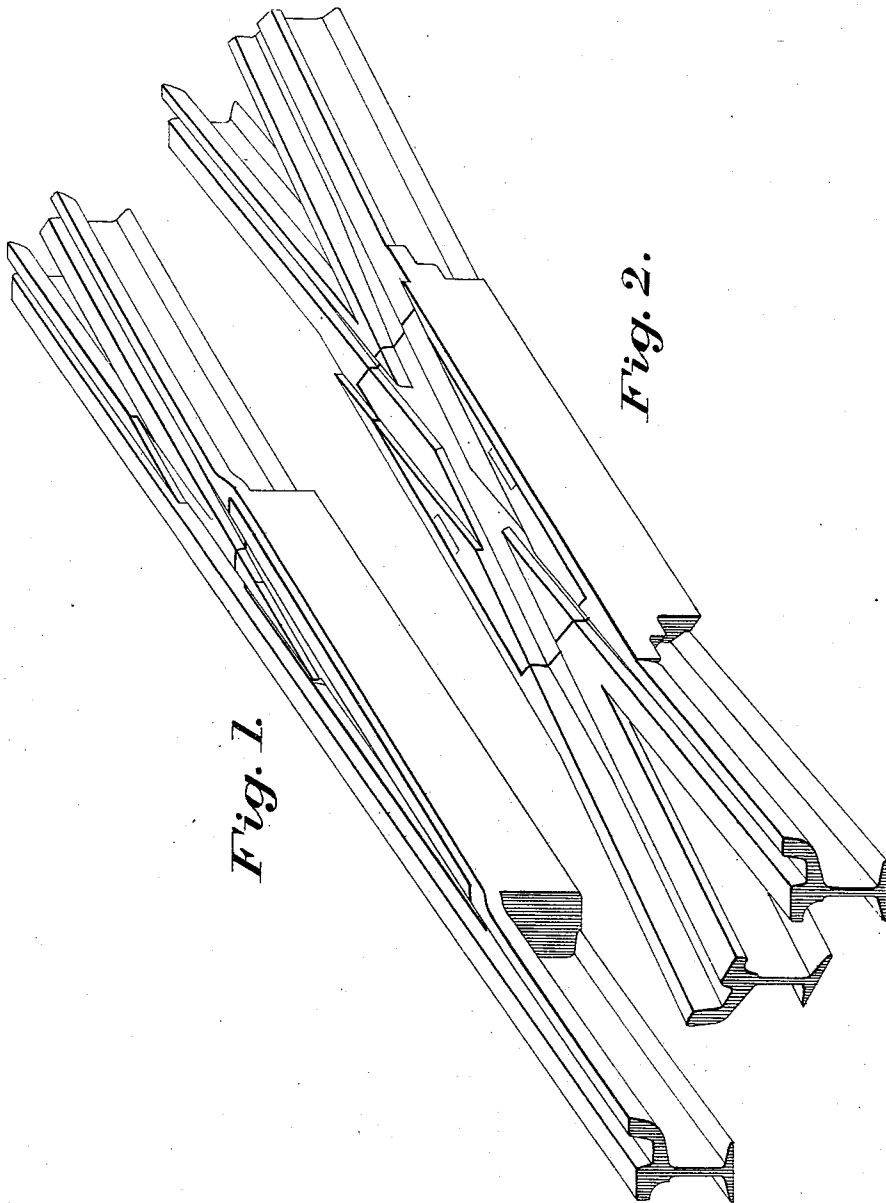
(No Model.)

3 Sheets—Sheet 1.

A. J. MOXHAM.  
RAILWAY SWITCH WORK.

No. 536,734.

Patented Apr. 2, 1895.



*Fig. 1.*

*Fig. 2.*

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(No Model.)

3 Sheets—Sheet 2.

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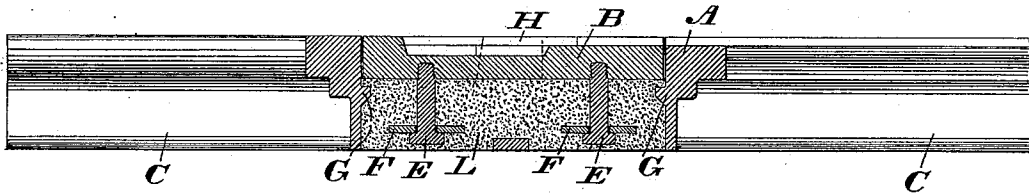


Fig. 5.

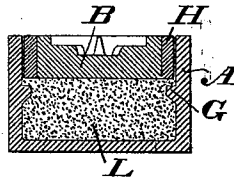


Fig. 4.

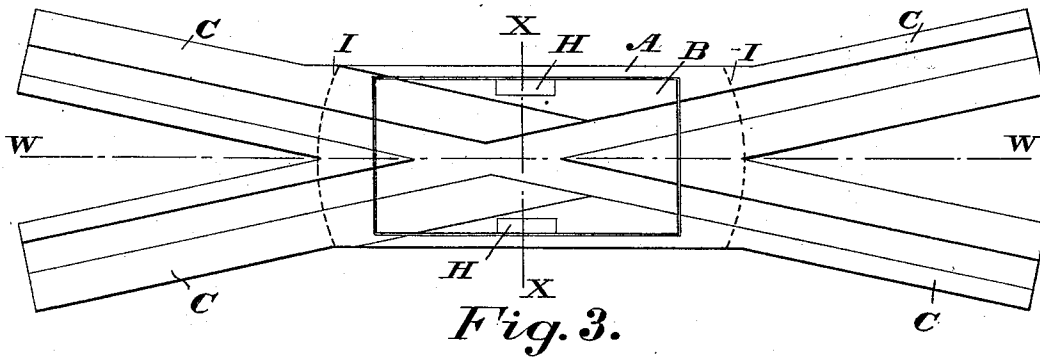


Fig. 3.

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(No Model.)

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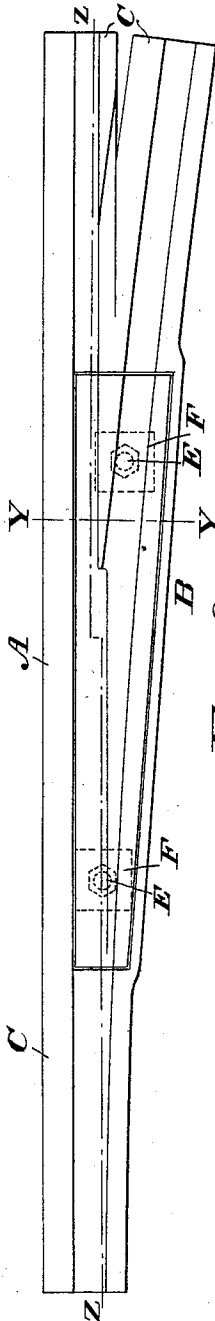


Fig. 6.

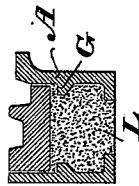


Fig. 7.

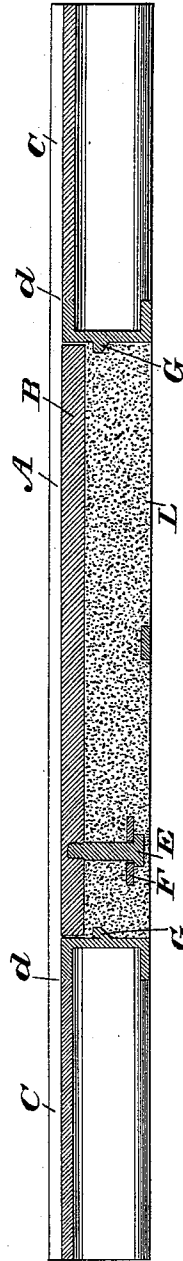


Fig. 8.

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# UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

## RAILWAY-SWITCH WORK.

SPECIFICATION forming part of Letters Patent No. 536,734, dated April 2, 1895.

Application filed March 30, 1894. Serial No. 505,765. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Railway-Switch Work, of which the following specification is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to frogs, crosses, mates and similar structures in railway tracks and consists in a structure in which the part subject to most wear may be made more durable than the remainder of the switch piece and removable therefrom, all as hereinafter described. In these structures the crossing point of the two rails or point as it is called is subject to greater wear than the remainder of the track as it is traversed by the wheels running on both rails; and also, owing to a groove which must be cut through the head of the rail for the passage of the flange of a wheel crossing either rail, there is more or less jar. If a raised portion or incline is left in the bottom of the groove that the flange of the wheel may run upon it and lift the wheel over the point, the wear upon this incline or raised portion is great, owing to the narrow edge the wheel flange presents for a bearing thereupon. Usually this part of railway track is a source of much trouble and expense, and when worn causes jolting and uncomfortable riding as a car passes over it.

The object of my invention is to provide a switch piece in which is inserted at the point of excessive wear a plate of more durable quality than the remainder of the track, and one which may be readily removed for realignment or replacing when desired.

Referring to the drawings: Figure 1 represents a mate, and Fig. 2 a frog, each embodying my invention. Fig. 3 is a top view of the frog in Fig. 2. Fig. 4 is a transverse section of Fig. 3 on line X—X, and Fig. 5 is a longitudinal section on line W—W, of Fig. 3. Fig. 6 is a top view of the mate and Fig. 1. Fig. 7 is a transverse section of Fig. 6 on line Y—Y, and Fig. 8 is a longitudinal section on line Z—Z, of Fig. 6.

I construct the cross or other switch pieces as follows: The central portion A is formed by casting it of steel of the proper form, having a pocket or orifice adapted to receive the

plate B. This central casting A has also formed upon it short projections conforming to the shape of the abutting rails and in alignment therewith. To these projections are secured the abutting rails. They may be welded thereon by electricity or otherwise or the projections may be long enough to permit of the usual splice bar joint.

The plate B may be either forged, rolled or cast. Where it is rectangular as in the case of the frog, I roll a bar of the desired width and thickness and cut the plates of the proper length from it. I then plane or mill the desired grooves through it to conform to the heads and grooves of the abutting rails. This plate may be made of a harder steel than the rest of the switch piece, and if desired it may be made more durable by hardening, as case hardening, the upper surface. If cast iron the wearing surface should be hardened by chilling.

I will now describe my method of securing the plate in place in the pocket. In the bottom of the plate I screw bolts E having the washers F. Around the inside of the pocket is a ledge or offset G. I secure the plate in place and fill the space beneath it with cement or melted sulphur L or some similar substance which, when soft, will readily flow around the bolts and bond the whole in place, the ledge G holding it in position.

When at any time it becomes necessary to remove the plate it can readily be done by pulling it up with sufficient force to fracture the cement or other filling.

H. H. are dovetails in the side of the plate adapted to receive lewises when it is desirable to remove the plate.

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

1. A railway switch structure which consists of a metallic structure provided with a pocket in which a plate which is grooved so as to form the flangeway and point is removably secured, the rails of the remainder of said switch being secured to said metallic structure.

2. A railway switch structure which consists of a metallic structure provided with a pocket adapted to receive a plate which is grooved to form the flange way and point,

the rails of the remainder of the switch being integrally secured to the said metallic structure.

3. A railway switch structure, which consists of a metallic structure provided with a pocket, in which a plate which is grooved to form the flangeway and point is removably secured, the rails of the remainder of said switch being integrally secured to said metallic structure.

4. A railway switch structure, which consists of a metallic structure provided with a pocket adapted to receive a plate upon which is formed the point, and provided on its exterior with projections which correspond in cross section with the rail of the remainder of the switch and to which projections said rail is abutted and secured.

5. A new and improved construction of railway switch structures, which consists of a metallic structure provided with a pocket adapted to receive a plate upon which is formed the point, and provided on its exterior with projections which correspond in cross-section with the rail of the remainder of the

switch, and to which projections said rail is abutted and integrally secured.

6. A railway switch piece consisting of a body portion having a pocket adapted to receive a plate, a plate in said pocket having track surfaces and depending holding down members, projecting downward from the plate into the space beneath, said space below the plate being filled with a material adapted to support the plate and bond the holding down members substantially as described.

7. In a railway switch piece in combination with a body portion having a pocket adapted to receive a plate, a plate having track surfaces thereupon in said pocket, holding down bolts secured to the bottom of the plate and washers on said bolts and a filling material in the pocket beneath the plate and in which the holding down bolts are embedded.

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

ARTHUR J. MOXHAM.

Witnesses:

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D. BRYAN.