

(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.
SWITCH PIECE FOR RAILROAD TRACKS.

No. 477,686.

Patented June 28, 1892.

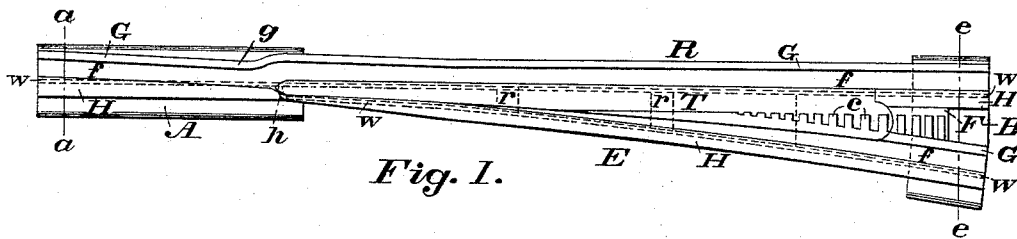


Fig. 1.

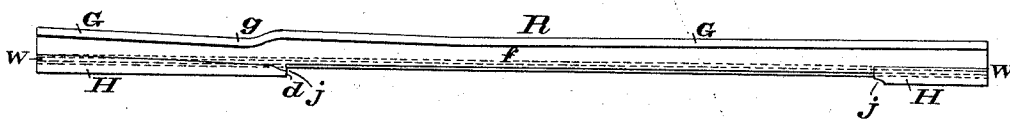


Fig. 2.

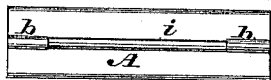


Fig. 11.

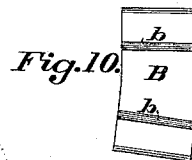


Fig. 10.

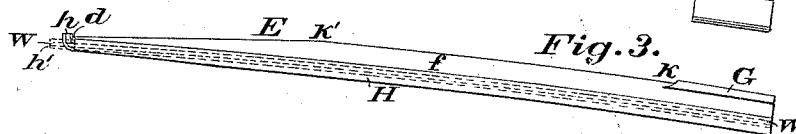


Fig. 3.



Fig. 4.



Fig. 5.

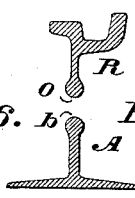


Fig. 6.

Fig. 9.

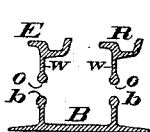


Fig. 8.

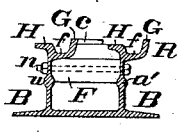


Fig. 7.

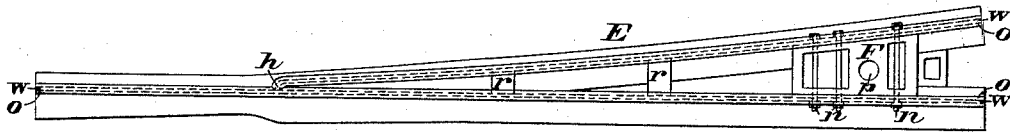


Fig. 12.

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(No Model.)

2 Sheets—Sheet 2.

A. J. MOXHAM.
SWITCH PIECE FOR RAILROAD TRACKS.

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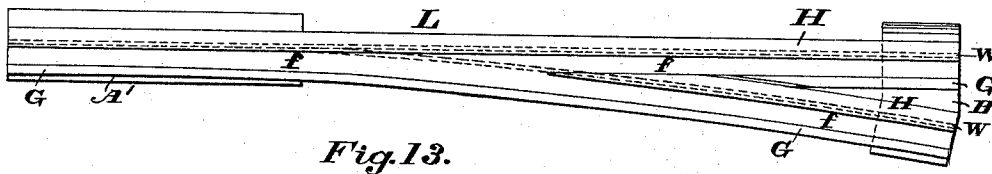


Fig. 13.

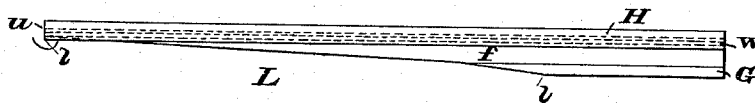


Fig. 14.

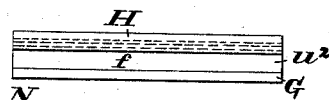


Fig. 15.



Fig. 16.

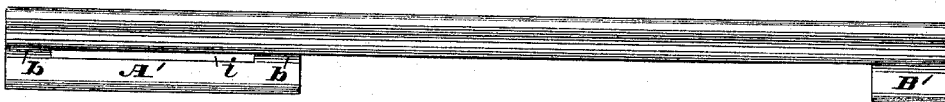


Fig. 17.

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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

SWITCH-PIECE FOR RAILROAD-TRACKS.

SPECIFICATION forming part of Letters Patent No. 477,686, dated June 28, 1892.

Application filed September 22, 1891. Serial No. 406,488. (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 Switch-Piece for Railroad-Tracks, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to make a switch-piece having the parts of which it is composed 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 the switch-piece in plan. Figs. 2 and 3 are views in plan of the two rails forming the switch-piece, showing their appearance before being united, as hereinafter described. Fig. 4 shows the complete switch-piece in side elevation. Fig. 5 is a cross-section taken through Fig. 1 at the line *a a*. Fig. 6 is a view similar to Fig. 5, showing the parts before being united, as hereinafter described. Fig. 7 is a cross-section taken through Fig. 1 at the line *e e*. Fig. 8 is a view similar to Fig. 7, showing the parts before being united, as hereinafter described. Fig. 9 shows in cross-section, enlarged, one of the rails composing the switch-piece with its supporting-chair separate therefrom. Fig. 10 is a view in plan showing the double-web chair or support, marked B in Fig. 8, detached. Fig. 11 is a view in plan showing the single-web chair or support, marked A in Fig. 6, detached. Fig. 12 is a bottom plan of the switch-piece, the supporting-chairs for the rail being omitted. Fig. 13 shows in plan a modified form of switch-piece. Figs. 14, 15, and 16 are views in plan of the pieces of rail forming the switch-piece illustrated in Fig. 13, showing their appearance before being united, as hereinafter described. Fig. 17 is a side elevation of Fig. 13.

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

Referring first to Figs. 1 to 12, inclusive, the letters R E indicate the two rails composing the switch-piece; H, their heads; G, the super-elevated guards; W, their webs, and *f*, the grooves formed between the heads and

guards. The rail R, as shown in Fig. 2, has a portion of its head *h* cut away between the points *j j* to a level with the floor of the groove *f*. Its guard portion G is bent or offset, as shown at the point *g*, and opposite said bend a portion of the head H is also cut away, as shown. The other rail E is curved, as shown in Fig. 3, and has its guard portion G cut away to a level with the floor of the groove *f* between the points *k k'*, and from the point *k'* to the end *h* of the rail said guard and a portion of the floor of the groove *f* are cut away, tapering the floor to the end *h*. Said end *h* is bent, as shown in said figure, the dotted lines *h'* indicating the end of the rail before being so bent. By cutting and bending the rails, as above described, a clear and level floor for the operation of the movable tongue T is provided, when the rails are united and also suitable abutting surfaces for such union. When the rails have been formed in the manner above described, the bent end *h* of the rail E is abutted to the rail R at the point *d*, and the two rails are then welded together at this point by any suitable method, process, means, or act of welding. A chock F, of any suitable form, is then inserted in the divergent ends of the two rails and said rails tied together by means of the bolts *n*, passing through their webs and through said chock. (See Figs. 1 and 12.) Said chock is provided with a hole *p*, which acts as a bearing for the pin of movable tongue T. Said chock may be omitted, if desired; but by its presence a convenient bearing for the pin of the tongue T is provided. The letter *c* indicates upraised corrugations or ribs on the tongue T, which are continued on the chock F. Stiffening-strips *r* may be inserted, as shown in Figs. 1 and 12, between the rails E R and welded to either or both of said rails. If desired, however, said strips may be omitted. The upper portion of the switch-piece is now a complete structure in itself, with the exception of the movable tongue T. A supporting-chair A, Figs. 4, 5, and 6, is then welded to the web of the switch-piece at the single end, Fig. 1, Figs. 5 and 6 showing, respectively, the appearance of the parts after and before welding, the letter *a* indicating the point of the weld. A portion of the upper surface of said chair is cut away,

as shown at *i*, and the points of welding are at the points *b b* only, thereby avoiding the welding together of long surfaces. If desired, instead of cutting away part of the chairs a portion of the web of the rail might be removed instead. I do not herein claim said feature, but reserve the same as the subject of another application for Letters Patent. At the divergent end of the switch-piece, at the right-hand side of Fig. 1, a double-web chair B is welded to the webs of the rails E R, as clearly shown in Figs. 7 and 8, the latter figure showing the rails and chair before being welded and the former after welding, the letter *a'* indicating the point of the weld. The two webs of said chair are welded to the two corresponding webs of the rails R E, thus making two welds. In the case, however, of the chair A, used at the other end of the switch-piece, the single web of the chair is welded to the single web of the rail R, and, if prolonged, as shown in Fig. 11, the web of the rear end of the chair is welded to the webs of the rails R E at the junction of the same at the point *d*. The chairs having been attached, as above described, the switch-piece is complete, and the tongue T may be then put in place for use.

Referring now to Figs. 13 to 17, inclusive, which show a modified construction, the letters L M N indicate three pieces of rail composing the switch-piece; H, their heads; G, their super-elevated guards; W, their webs, and *f* the grooves formed between the heads and guards. The rail L, as shown in Fig. 14, has a portion of its head H and floor *f* cut away between the points *l l*. The rail M is curved, as shown in Fig. 16 and has its head and guard cut away between the points *m m*. When the rails have been so formed, their ends *u u'* are welded by a butt-weld to the end *u'* of the rail N, (shown detached in Fig. 15,) or either one of said rails may be welded to the rail N. Said rails L M in addition to being welded to the rail N may also be welded together at their contiguous portions, if desired. Chairs or supports A' B', similar in form to the chairs A B, shown in Figs. 1 to 12, are welded at each end to the switch-piece.

By the invention herein described a light, strong, and durable switch-piece is provided ready to be secured through the medium of its chairs integral therewith, directly to cross-ties set deeply, below the surface, thus making a switch-piece suitable for securing in track with deep-webbed girder-rails, such as it is desirable to use for street-railroads.

The rails shown in the drawings 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 switch-piece, 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—provided they are adapted to be welded to the web of the rail. The bulbs or beads shown on the rails and chairs at the points *o b* 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.

It is obvious that the invention herein described is applicable to either a plain switch or to a switch having a movable tongue.

Having thus fully described my said invention, I claim—

1. A railroad switch-piece having its component parts formed of two or more rails welded together at a common point of union.

2. A railroad switch-piece formed of rails welded together and to a connecting-piece at their divergent ends.

3. A railroad switch-piece provided with transverse stiffening-pieces between the switch-rails thereof welded to one or both of said rails.

4. A railroad switch-piece formed of three rails welded together to form a common point of juncture.

5. A railroad switch-piece formed of rails welded together and provided with stiffening-pieces between said rails welded to one or both of said rails.

6. A railroad-switch piece composed of girder-rail pieces having the web of one of the rail-pieces bent over at one end at or near a right angle for making a short abutting contact at said point with another rail-piece.

7. A railroad switch-piece formed of rails, the web at the end of one of said rails being bent over and welded to form a short weld at said point to another rail.

8. A railroad switch-piece formed of rails welded together at their point of juncture, one of said rails extending beyond said juncture, and a support welded to said rail beyond the point of juncture.

9. A railroad switch-piece formed of rails welded together, one of said rails extending beyond their point of juncture, and a single-webbed chair or support welded to said rail beyond said juncture.

10. A railroad switch-piece formed of rails welded together, one of said rails extending beyond the point of juncture, and a single-webbed chair or support welded to said rail beyond said juncture and to the webs at said juncture.

11. A railroad switch-piece formed of rails welded together and a support welded to each of said rails at their divergent ends.

12. A railroad switch-piece formed of rails welded together and a double-webbed chair or support welded to said rails at their divergent ends.

13. A railroad switch-piece formed of rails welded together, one of said rails extending

beyond their point of juncture, a support or chair welded to said rail beyond said juncture, and a support or supports welded to said rails at their divergent ends.

5 14. A railroad switch-piece formed of rails welded together, one of said rails extending beyond their point of juncture, a single-webbed support or chair welded to said rail beyond said juncture and to the rails at their
10 juncture, and supports or chairs welded to said rails at their divergent ends.

15 15. A railroad switch-piece formed of rails welded together, one of said rails extending beyond their point of juncture, a support or chair welded to said rail beyond said juncture, and a double-webbed chair or support welded to said rails at their divergent ends.

ure, and a double-webbed chair or support welded to said rails at their divergent ends.

16. A railroad switch-piece formed of rails welded together, one of said rails extending beyond their point of juncture, a single-webbed support or chair welded to said rail beyond said juncture and to the rails at their point of juncture, and a double-webbed chair or support welded to said rails at their divergent ends. 20

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Witnesses:

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A. J. BRYAN.