

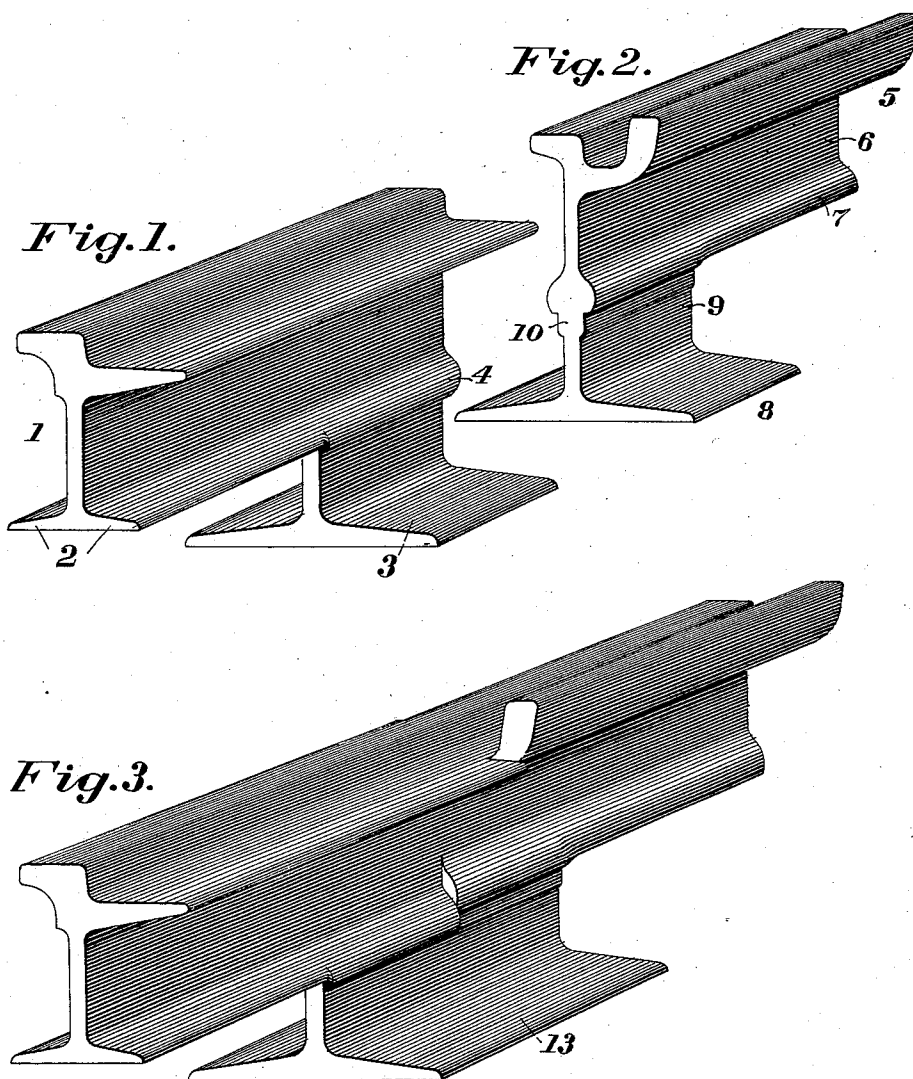
(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.
RAILROAD RAIL.

No. 531,444.

Patented Dec. 25, 1894.



WITNESSES:
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J. T. Bernhardt

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(No Model.)

2 Sheets—Sheet 2.

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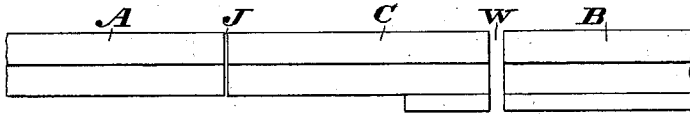


Fig. 5.

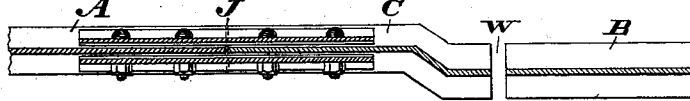


Fig. 6.

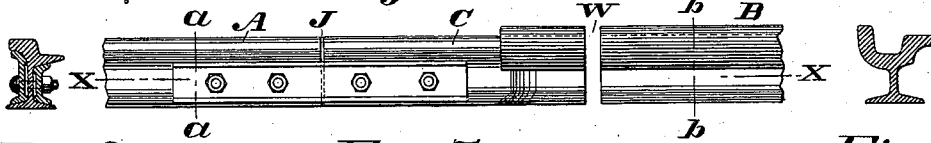


Fig. 8.

Fig. 7.

Fig. 9.

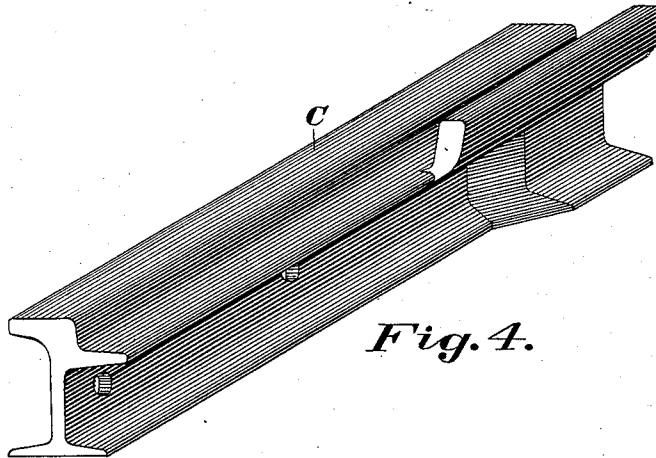


Fig. 4.

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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

RAILROAD-RAIL.

SPECIFICATION forming part of Letters Patent No. 531,444, dated December 25, 1894.

Application filed June 2, 1894. Serial No. 513,277. (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 Railroad-Rails, of which the following specification is a true and exact description, due reference being had to the accompanying drawings.

It is often desirable to have a rail one portion of which differs in cross section from the other portion, as for instance a guard or a groove portion and a side tram portion. It is impossible to roll such a rail and the result is accomplished only by connecting two rails of the required form when in the track by means of splice bars. It is also often necessary to use two rails of such different cross sections as to be difficult to connect together without the use of combination splice bars or like fastenings.

My invention consists in a rail integral throughout, but in which the contour of the head in one portion differs from that in the other, and in a rail integral throughout but having at one end a cross section different from the other end of said rail so that it may be readily joined to rails of the track having cross sections corresponding to the ends of said rail.

I will illustrate in the drawings two types, the first in which the rail has only a difference in head contour and depth of web, and the other in which not only does the head contour differ, but the position of the web differs in different portions of the rail.

In the drawings—Figures 1 and 2 are perspective views showing two portions of the rails separated from each other. Fig. 3 is a perspective view of the parts shown in Figs. 1 and 2 secured in a single rail. Fig. 4 is another form of my improved rail. Fig. 5 is a top view showing a joint made, using my improved rail. Fig. 6 is a section on line $x-x$, Fig. 7. Fig. 7 is a side view of Fig. 5. Fig. 8 is a section on line $a-a$, Fig. 7. Fig. 9 is a section on line $b-b$, Fig. 7.

Treating first of the device of Figs. 1, 2 and 3: I form the rail shown in Fig. 3, so that it shall have two sections, one corresponding to that shown in Fig. 1, and the other corresponding to that shown in Fig. 2. I can form this in the following manner: The two portions 1 and 5 are formed separately, the portion 1 being known as a side bearing rail, and

5 as a guard rail section, as may be seen, the two sections having a different contour of head. The ends of the portions are provided with webbed bases or supports 3 and 8 which are integrally united thereto, the top of the web of the base rail 3 being welded to the bottom of rail 1, and a portion of the horizontal flanges 2 of the latter being bent down and clamped against the sides of said web forming the rib or projection 4 at the welding point.

In Fig. 2 the end of a guard rail portion 5 is shown, having the bottom of its web 6 formed with a groove or pocket inclosed by the depending flanges 7. The end of the portion 5 is provided with the webbed base or support 8 which is integrally united thereto, the top of the web 9 of the base 8 being welded to the upper part of the groove. The flanges 7 are then pressed against the sides of the head 10.

As shown in the drawings, the parts 1 and 5 without the supports are of different height. I therefore in this particular piece make the webs of the supports 3 and 8 of such height that the entire height of the two portions shall be approximately the same. The two parts 1 and 5 are then welded together, forming the single structure shown in Fig. 3, the adjacent ends of the parts shown in Figs. 1 and 2 being the welded point and the bases 3 and 8 becoming the single base 13. There is thus formed an integral rail structure, provided at different portions with a different head contour, and which is readily adaptable either to be used by itself or where say a guard rail and the side bearing rail are desired adjacent to each other.

I have shown and described two forms of head contour, but the rail may be of any other desired different head contour or cross section at the different parts, and by the term head contour I mean the contour of the entire mass of metal above the web and including the head proper, tram or guard.

The bases 3 and 8 are not essential and need only to be used where one or both of the rails have the groove at the bottom of the web. Thus, where the two parts of the rails are of the same height of web and approximating each other as far as the web and base are concerned, they may be directly welded one to the other.

I do not intend to limit myself to the par-

ticular method of making this new rail by forming the two sections separately and welding them together.

In the drawings, from Figs. 4 to 9 I have illustrated my invention as applied to a rail in which, as shown, not only is the head contour different at the different portions of the rail, but the rail is not symmetrical, in reference to the position of its web at different portions. This construction, which is shown in Fig. 4 is advantageous where it is desired to connect track rails of unlike cross-section together, in which case this rail may be interposed, having at each end a cross section which corresponds to the cross section of the rail to which it is to be united, and each end connected to the rail corresponding to it in cross section. I will now describe the construction of this rail shown in Fig. 4.

It will be seen that the top of the head and the gage line are continuous, but that the tram on the one end changes to a guard on the other, and that the web and lower flanges are considerably offset between the two ends. I preferably form this rail, C, by a casting of steel, and I make the connection between it and its corresponding track rails in the following manner:

In Fig. 6, A and B represent two rails of the shape shown in Figs. 8 and 9, respectively, A being the shape in common use in the plain straight track of the street railroads, and B the common form of curved or guard rail. One end of the piece C conforms in cross section to the rail A, and the other end conforms in cross section to the rail B.

The rail C is preferably welded at its corresponding end to the guard rail, this being the best way, as the guard or curved rail is generally specially prepared for a certain place, while the straight rail is usually fitted in place as the track is laid.

I preferably weld the end of the rail C corresponding to the rail B to said rail B at any convenient place in the shop before shipping, as it simplifies greatly the labor of finally laying the track in place.

J shows the final joint with the track laid in the usual manner with splice bars and bolts.

It will be seen that by forming this integral rail differing at each end in cross section, but conforming in cross section at each end to its corresponding track rail, it can be connected to two dissimilar sections of track rail, and by welding it or integrally uniting it to one of the rails there is formed an integral rail which is adapted to be joined to a rail of dissimilar section by means of plain and inexpensive splice bars, instead of costly and unsatisfactory offset or combination splice bars. By forming a single integral rail provided with dissimilar sections as shown, it is possible to secure the union of sections so unlike that they could otherwise not be united, for, although it is possible to weld to-

gether directly rolled steel rails of certain variation of shape, there is a limit beyond which it is not advisable, for if the sections are too different they will not mate or fit together at the welding point, or point of abutting contact sufficiently to secure the desired strength of weld and in any event the cost of partially blacksmithing or otherwise shaping these ends is saved.

It will be understood, in reference to both forms of my invention, that shown in Fig. 3 and the other in Fig. 4, that I do not intend to limit myself to the form shown, as any different shape may be used in the rail.

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

1. As a new article of manufacture, a rail integral throughout provided with a head and web, the head differing in contour at one portion from that at another portion of the rail.

2. As a new article of manufacture, a rail integral throughout provided with a head and web, the web differing in position at one portion from that at another portion.

3. As a new article of manufacture, a rail integral throughout provided with a head and web, the head differing in contour, and the web in position at one portion from that in the other.

4. As a new article of manufacture, a rail integral throughout provided with a head and web, the cross section of the rail at one end differing from that at the other, whereby the said rail is adapted to be connected at each end to rails of corresponding cross sections.

5. As a new article of manufacture, a rail integral throughout provided with a head and web, the web at one end differing in position from the web at the other end.

6. As a new article of manufacture, a rail integral throughout provided with a head and web, the head at one end differing in contour and the web in position from that at the other end.

7. In combination with two rolled railway rails of unlike section and interposed between them, a rail formed of cast metal each end of which is of the same section as the adjacent rail, one end of said intermediate rail being welded to the adjacent rail, and the other end adapted to be connected by splice bars.

8. In combination with a rolled railway rail a rail of cast metal one end being of the same section as the rolled rail and the other end being of different section, the cast and rolled rails being welded together at their similar ends.

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

ARTHUR J. MOXHAM.

Witnesses:

A. J. BRYAN,
D. BRYAN.