

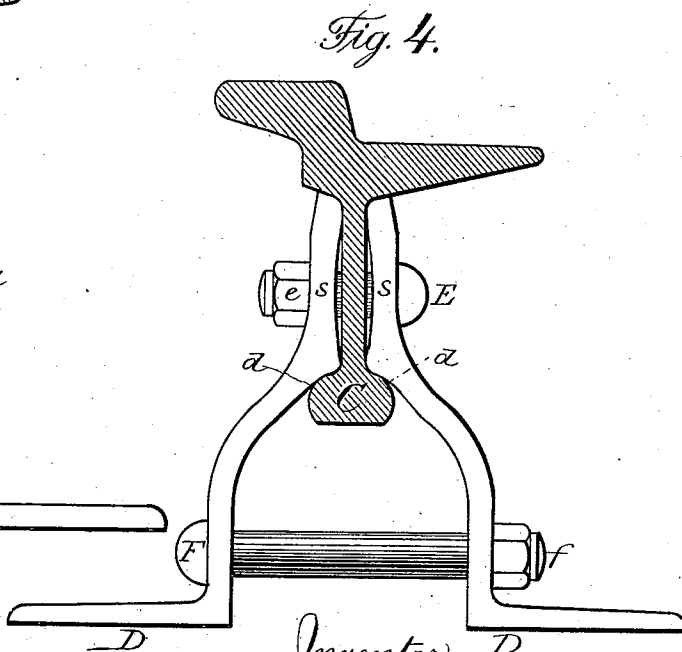
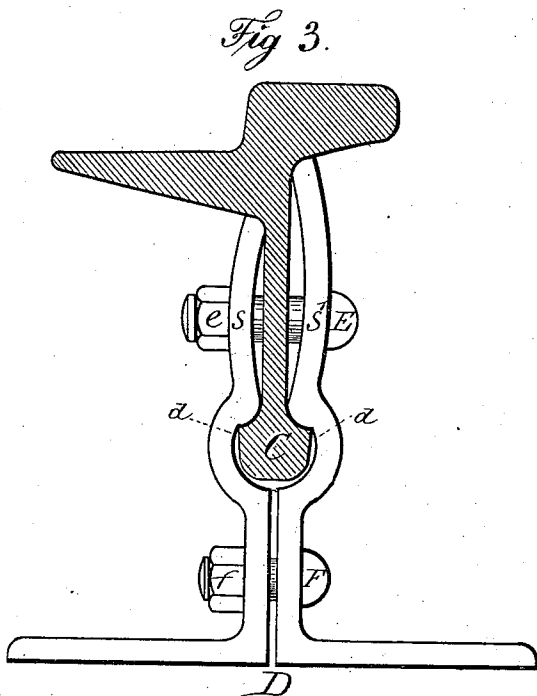
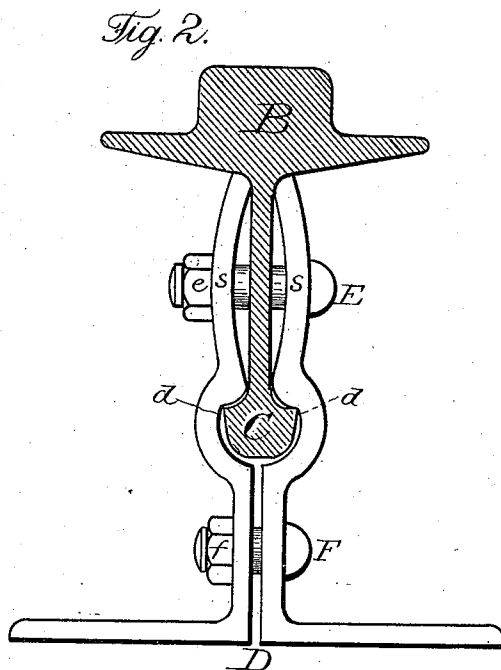
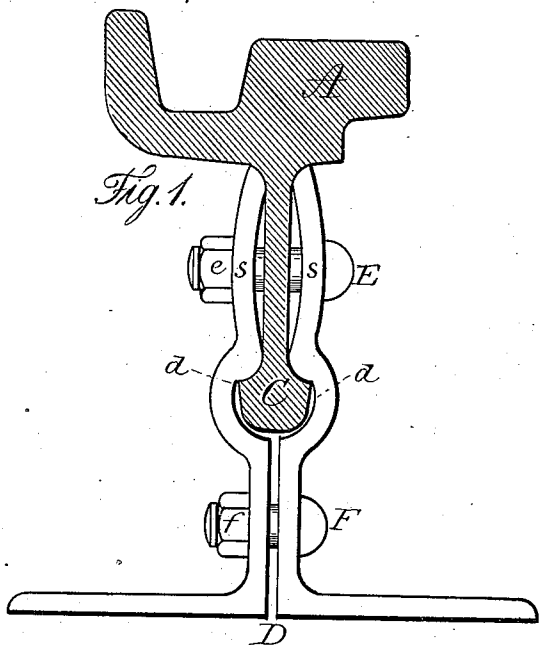
(No Model.)

A. J. MOXHAM.

SPLICE BAR RAIL CHAIR FOR STREET RAILROAD TRACKS.

No. 334,265.

Patented Jan. 12, 1886.



Witnesses:

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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

SPLICE-BAR RAIL-CHAIR FOR STREET-RAILROAD TRACKS.

SPECIFICATION forming part of Letters Patent No. 334,265, dated January 12, 1886.

Application filed July 20, 1885. Serial No. 172,040. (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 Improvement in Splice-Bar Rail-Chairs for Street-Railroad Tracks, which invention or improvement is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide light, strong, and durable chairs which can be cheaply made and quickly applied in the operation of laying the car-tracks.

The invention consists of the two-part chair, as hereinafter described, and set forth in the claim.

In the accompanying drawings, Figure 1 shows the chair in end elevation bolted to a girder guard-rail shown in cross-section.

Fig. 2 shows the chair in end elevation bolted to a center-bearing girder-rail in cross-section.

Fig. 3 shows a chair in end elevation whose sides are made from different-sized blanks instead of from similar blanks, as shown in the

preceding figures. Said chair embraces a side-bearing girder-rail shown in cross-section.

Fig. 4 shows in end elevation a modification of the chair shown in the preceding figures and a girder-rail in cross-section.

In Figs. 1 and 2 the respective rails A and B are set and firmly clamped within the chairs D, composed of the two similar parts or sides s s. Said rails are provided each with a fillet,

C, at the upper edge or foot of their webs, and each side s of said chairs is provided with a corresponding recess or offset, d, to fit over and embrace said fillet.

The bolts E pass through each side piece of the chair, and are provided with ordinary screw-threaded ends and nuts, e, screwing up thereon.

Two of said bolts are preferably used with each chair. The bolts F pass through the lower web portion of each side piece of the chair only, and below the offset d, said side pieces, however,

preferably not quite touching each other below the offset, but remaining a slight distance apart, as shown in the several figures.

The bolts F are provided with nuts f, for setting up hard upon the bolts and securely holding the side pieces, s s, together.

But one of the bolts F is preferably used with each chair when the

chair is used only as an intermediate chair; but when the chair is used as a splice-bar chair at the joints of the rails, then two of the bolts F may be used, one near each end of the chair, the chairs at said joints being preferably made longer than the intermediate chairs.

A good length for the splice-bar chairs is from twelve to eighteen inches, and for the intermediate chairs five inches. These chairs are made of rolled metal. The metal can be rolled in bars of the desired cross-section—say forty feet in length—and economically sheared to proper lengths by ordinary means. The desirability and some of the advantages of the use of these chairs, both as splice-bar chairs and intermediate chairs, compared with chairs heretofore used will now be explained.

In the manufacture of girder street-rails without a lower flange or base it has been largely the practice to use chairs of various

forms to replace the said lower flange, such chairs, if of cast-iron, depending generally for their fastenings upon keys or bolts or a combination of both keys and bolts, or, if of wrought-iron principally upon the bolts alone.

The use of a key involves a proportionate increase in the size of the chair to withstand the strain of said key. Such provision necessitates also a considerable bulk and awkward-

ness of shape of chair, which effect is of much disadvantage in the construction of the track, particularly by its obstructiveness to the paving sets or blocks which adjoin the rail.

Where the wrought-iron chair is used, if depending upon the use of bolts alone for its fastenings, it is generally the case that the connection of chair to rail depends principally upon side friction, as the holes in the chairs are usually made larger than the bolts, to provide for the natural irregularities of fit.

In street-railway construction speedy adjustment of rail to chair is a necessity. If a nice adjustment between the two is maintained, it must be secured by means which involve no delay in making necessary connections of the parts.

In the chairs herein illustrated it will be noted that such absolute adjustment and speedy connection are both secured. The chair is made of two side pieces, the upper parts of which are of such shape as to fit under and against the heads or trams of the sev-

eral rails illustrated. The lower parts of said pieces are so offset that when placed on either side of the rail their inner surfaces come nearly in contact with each other, except as shown in Fig. 4. The web below this offset or recess thus formed in this part of the chair is of sufficient depth to take in an ordinary sized track-bolt—say five-eighths of an inch in diameter. Not only, therefore, may this depth of web provide for the proper attachment of the two sides of the chair together by a bolt or bolts, but it provides for a sufficient depth of the chair for the desired or proper height between the head of the rail and the cross-tie to which the base of the chair is secured. By depending upon the splice-bar fit of chair to rail the only provision of the bolts is that of holding the two sides of the chair together. By a "splice-bar fit" is meant what is technically well-known to the trade as being a fit which depends upon two extreme upper and lower bearings on the side of any vertical rail-web.

Upon the completion of the road-bed it is found that contact with the adjoining street-ballast quickly rusts the nuts and prevents any subsequent turning of the same upon their bolts; hence used in this way such bolts can be absolutely depended upon without any necessity for the addition of nut-locks. By offsetting the lower part of the chair around and under the web of the rail the further advantage is gained that the principal axis of support is thrown directly under the vertical web of the rail.

It will be noted that the lower parts of the sides of the chair do not come in absolute contact unless it is deemed advantageous to draw them to such contact by the lower bolts. By this means a certain "spring" in the metal of the two sides is secured, which permits of more thoroughly retaining the two sides of the chair in contact with the web of the rail. Both side pieces may be made from the same blank, as shown in Fig. 2, or one side from one blank or form and the other side from a different one, as shown by s' , in Fig. 3, this depending, however, only upon the form of the rail. The shapes of the blanks from which these chairs are made are easily rolled, and therefore cheaply supplied, and the bolts used for the connections can be the ordinary track-

bolts, the use of which is thoroughly familiar to street-railway workmen, and so a thorough fit and fastening of chair to rail is secured, due to the shape of the chair, by the mere tightening of ordinary bolts. A further advantage of this form of chair is that the upper bolt-holes can be slotted without affecting the connection of the chair to the rail. By this means expansion and contraction are provided for without affecting the stability of the track.

In the modification shown in Fig. 4 a wider base of chair is shown, which may be sometimes desired, in which case the part of the chair below the offset, made to fit over the fillet on the web of the rail, may be offset on each side outwardly instead of inwardly, as in Figs. 1, 2, and 3. The same spring in the side pieces is preserved in this Fig. 4 by drawing them together by the bolt F , as is done in the other figures; but in said figures, as well as in Fig. 4, the bolts F may be omitted, if desired, where the splice-bar fit of chair and rail is sufficient, reliance being placed upon the bolts E and the necessary fastenings of the chair to the cross-ties of the track.

I do not herein claim any of the forms of rails herein shown to which the chairs herein illustrated are secured.

I am aware that chairs having T-flanges or a T-base are not new, and such I do not herein claim; but,

Having thus fully described my said improvement as of my invention, I claim—

As a new article of manufacture, a rolled-metal T-chair for street-car girder-rails of the form substantially as described, consisting of two side pieces shaped each to make a splice-bar fit under the head of the rail, offset, as at d , to similarly fit on top of fillets on the web of the rail, and provided with bolts for tying said side pieces to the rail above and below said fillets, whereby said chair is caused to clamp the rail only by said splice-bar fit of its two sides and by said fit alone transmit the weight of the load upon the rail to the chair, substantially as and for the purposes set forth.

A. J. MOXHAM.

Witnesses:

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