

(No Model.)

T. J. McTIGHE & S. W. CHILDS.
RAIL BOND FOR ELECTRIC RAILWAYS.

No. 578,829.

Patented Mar. 16, 1897.

Fig. 1.

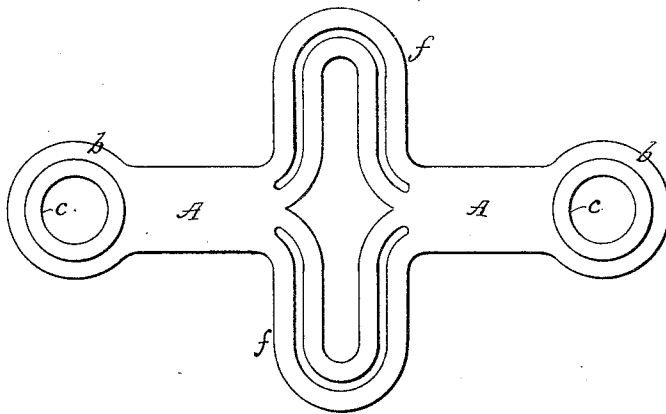


Fig. 2.

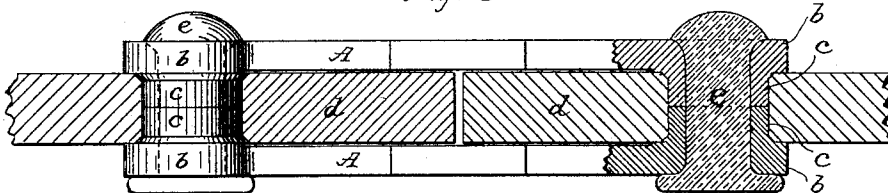
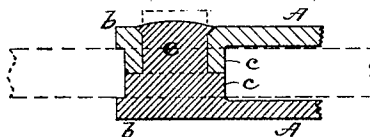


Fig. 3.



WITNESSES:

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RAIL-BOND FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 578,829, dated March 16, 1897.

Application filed October 9, 1896. Serial No. 608,426. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. MCTIGHE, of Brooklyn, in the county of Kings and State of New York, and SUMNER W. CHILDS, of Natick, in the county of Middlesex and State of Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Rail-Bonds for Electric Railways; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of our invention is to provide a simple and easily-applied device for connecting electrically the rails of an electric railway; and the invention consists in the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, which form part of this specification, Figure 1 is a face view of one form of our device before application to the rails. Fig. 2 is a section of two adjoining pieces of rail, showing two bonds in one hole in the rail and constituting our duplex bond; and Fig. 3 is a modification of Fig. 2.

Like letters refer to like parts.

In practicing our invention we prefer to make the rail-bond of copper, and we make it in one piece, either as a malleable casting or from a wire or plate, by drawing or forging or otherwise shaping to conform to the invention and of any requisite length and dimensions demanded by the user.

In Figs. 1 and 2, A designates the connecting part or trunk of the bond, having the enlarged ends *b*, from which respectively extend the tubes or eyelets *c*. The rails *d* are drilled or punched to receive these tubular ends. After insertion of the two parts *c* in the rail from opposite sides thereof solid rivets *e* are inserted or driven through the ends *c* and upset, as shown in the drawings. Thus the tubular ends are expanded into the closest possible contact with the rails, and the upsetting of the rivets secures the bonds firmly against displacement. At the same time the rivets do not necessarily form any part of the electrical circuit, and while the bonds are intended to be of copper the rivets may be of iron or soft steel. No special tools are required in applying such a rail-bond, merely a couple of ham-

mers, as in ordinary riveting operations. The contact secured between bond and rail is absolutely water-tight and moisture-proof. By this use of two such rail-bonds with short tubular ends *c* an important result is produced—namely, firmly clenching two bonds with one rivet. We thus effect a double bonding (*i. e.*, double conductivity) with but one hole in each of the adjoining rails, and if the rail-holes are to be drilled on the ground, as is the usual and best practice, an important saving in cost is effected.

Obviously the rivet may be permanently attached to one of the rail-bonds in the operation of forming the latter, and particularly so if made by casting; and in the modified duplex bond shown at Fig. 3 the rivet end *e* may be an integral part of one bond and, passing through the other bond, be subject to treatment the same as an independent rivet.

In order to provide for expansion and contraction of the rails in a short-length bond, we form the body of the bond with one or more transverse loops *f*, as in Fig. 1, each side of the loop being, in cross-sectional area, about one-half that of the body A; but expansion may be provided for in many ways.

What we claim as our invention, and desire to secure by Letters Patent, is as follows:

1. A duplex rail-bonding device, consisting of two metallic conductors, one on each side or face of the rail, and having inwardly-projecting ends and means for drawing said ends into a single hole in the rail and securing them therein.

2. A duplex rail-bonding device consisting of two metallic conductors having their corresponding ends adapted to enter a single hole in the rail at opposite sides or faces thereof, and having one or both said corresponding ends of tubular form, and a metal rivet passing through one or both ends and capable of upsetting to hold the said ends in contact with the rail.

In testimony whereof we have hereunto affixed our signatures in the presence of two witnesses.

THOMAS J. MCTIGHE.
SUMNER W. CHILDS.

Witnesses:

C. J. SCHEIMANN,
LOUIS F. CURDES.