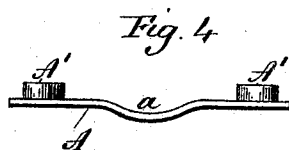
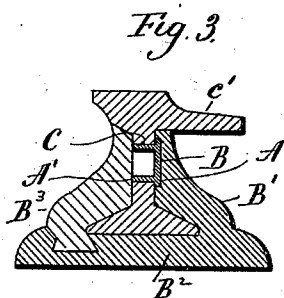
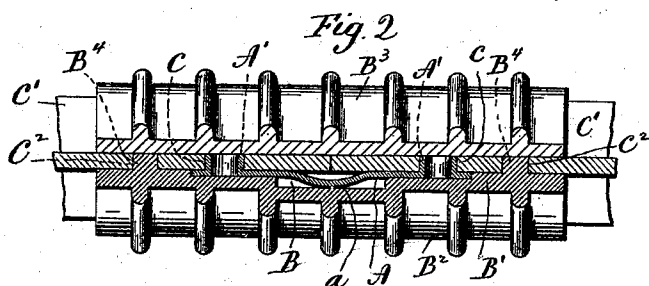
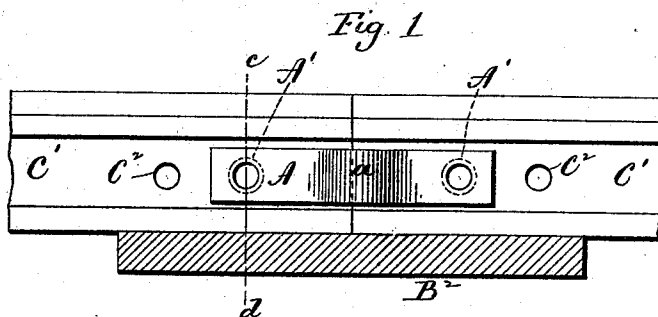


(No Model.)

E. S. WHEELER.
BOND FOR ELECTRIC RAILWAYS.

No. 545,833.

Patented Sept. 3, 1895.



Witnesses,
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UNITED STATES PATENT OFFICE,

ELONZO STERNE WHEELER, OF SAUGATUCK, CONNECTICUT, ASSIGNOR OF
ONE-HALF TO CLARENCE L. WHEELER, OF MARION, INDIANA.

BOND FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 545,833, dated September 3, 1895.

Application filed January 14, 1895. Serial No. 534,853. (No model.)

To all whom it may concern:

Be it known that I, ELONZO STERNE WHEELER, of Saugatuck, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Bonds for Electric Railways; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a bond constructed in accordance with my invention and applied to two rail ends, which are shown to be united by a chair-joint, which is shown in vertical longitudinal section; Fig. 2, a view in horizontal section on the line *a b* of Fig. 3; Fig. 3, a view in transverse section on the line *c d* of Fig. 1; Fig. 4, a detached plan view of the bond.

My invention relates to an improvement in bonds for electric railways, or, in other words, for those connecting pieces of metal which are employed to establish an electric circuit throughout the rails of a railway system in which the cars are electrically propelled.

The object of my invention is to provide a simple and compact bond constructed with particular reference to forming a large area of contact between the rails which it connects, to being protected against injury from whatever cause, and to being produced and applied with the minimum of expense.

With these ends in view my invention consists in a bond for electric railways provided with inwardly-extending projection taking into holes formed in the rail ends, which are thus made electrically continuous, in combination with a chair-joint consisting of a chair provided with a flange, between which and the rail ends the bond is located, and also consisting of a draw-bar adapted to be inserted into the chair and engaging with the opposite faces of the webs of the rail ends.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As shown in the drawings, my improved bond consists of a long narrow plate A, bowed

midway of its length, as at *a*, for the purpose of adapting it to compensate for variations in the length of the rails, owing to their contraction and expansion, and provided at each end with an inward projection in the form of a contact-bushing A'. This bond may be made of sheet or cast metal, as desired. If made of sheet metal, which is the preferred construction, the bushings will be drawn up therefrom. As shown in Figs. 1, 2, and 3, the bond is used in connection with a chair-joint of the same general construction as that shown in United States Patent No. 512,851, granted January 16, 1894, to me, the bond being placed in a shallow recess B, formed in the longitudinal flange B' of the chair B², and the bushings A' and A' of the bond fitting into the transverse openings C C, formed in the abutting ends of the rails C' C'. The said rail ends are firmly seated and held in the chair by means of a flanged draw-clamp B³, which does not need special description. The exterior faces of the bushings A' A' of the bond are designed to make continuous contact with the walls of the said holes C C in the rail ends C' C', whereby a large contact-surface between the bond and the rail ends is secured. It will be understood that when the bond is used in such a chair it is held in place between the said flange and the rail ends and is very easily applied. Furthermore, the holes C C which receive the bushings of the bond are the holes which are formed in all rails to receive the bolts used in connection with the splice-bars or fish-plates ordinarily employed for coupling rails. It will also be understood that when the bond is in place it is entirely protected from injury. The rail ends are also provided with transverse holes C² C², receiving inwardly-projecting pins B⁴ B⁴, which are employed to prevent the rails from creeping.

I would have it understood that I do not limit myself to the exact construction set forth, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bond for electric railways, provided with inwardly extending projections taking

into holes formed in the rail-ends which are thus made electrically continuous, in combination with a chair-joint consisting of a chair provided with a flange, between which and the rail-ends the bond is located, and also provided with a draw-bar engaging with the opposite faces of the webs of the rail-ends, substantially as described.

2. A bond for electric railways, provided with inwardly extending projections taking into holes formed in the rail-ends which are thus made electrically continuous, in combination with a chair-joint consisting of a chair provided with a flange which is recessed to receive the bond which is located between the flange and the rail-ends, and the said chair-joint also consisting of a draw-bar adapted to be inserted into the chair and engaging with the opposite faces of the webs of the rail-ends, substantially as described.

3. A bond for electric railways, provided

with inwardly extending projections taking into holes formed in the rail-ends which are thus made electrically continuous, and bowed between its ends to adapt it to expand and contract to compensate for the expansion and contraction of the rails, in combination with a chair-joint consisting of a chair provided with a flange, and of a draw-bar adapted to be inserted into the chair the flange of which is recessed to receive the bond and the bowed portion thereof, while the flange and draw-bar combine to cover and protect the bond, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELONZO STERNE WHEELER.

Witnesses:

F. B. MATHEWS,
R. H. WHEELER.