No. 824,625. PATENTED JUNE 26, 1906.

J. P. CLARK.

RAIL BOND.

APPLICATION FILED OCT. 23, 1905.

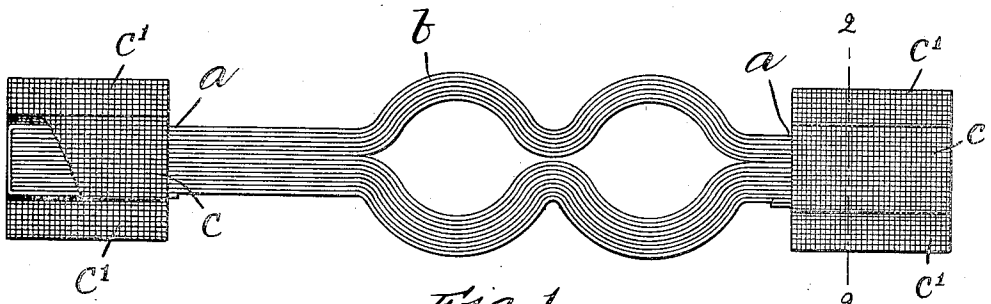


Fig. 1.

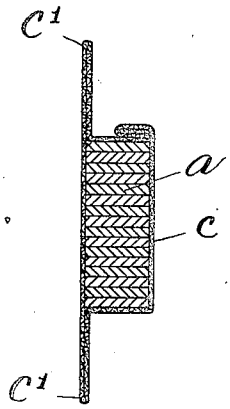


Fig. 2.

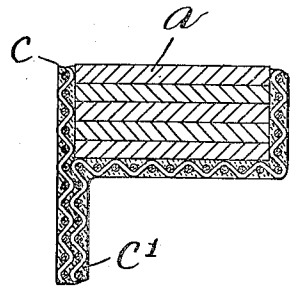


Fig. 3.

Witnesses:
H. B. Davis.
Cynthia Doyle

Inventor:
John P. Clark,
by Sayles & Harriman
Attys

UNITED STATES PATENT OFFICE.

JOHN P. CLARK, OF YPSILANTI, MICHIGAN.

RAIL-BOND.

No. 824,625. Specification of Letters Patent. Patented June 26, 1906.

Application filed October 23, 1905. Serial No. 283,902.

To all whom it may concern:

Be it known that I, JOHN P. CLARK, of Ypsilanti, county of Washtenaw, State of Michigan, have invented an Improvement in Rail-Bonds, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to rail-bonds, and is intended as an improvement upon the rail-bond shown in my application for Letters Patent, Serial No. 262,701, filed May 27, 1905. In said application a rail-bond is shown having a terminal provided with a piece of wire-cloth on its under side, which is adapted to be embedded in the solder used to secure the rail-bond to the rail.

Rail-bonds are subjected to two essentially different strains—one produced by a movement of the rails toward and from each other, due to expansion and contraction of the rails, and the other produced by the rails moving to different elevations with respect to each other, as by a wheel passing from one rail to the next. The strain produced by the movement of the rails toward and from each other is gradual; but the strain produced by the movement of the rails to different elevations with respect to each other is sudden.

When the rail-bonds are secured to the rails by solder, the solder terminals thereof are therefore subjected to a direct end pull or thrust due to the expansion and contraction of the rails, and also are subjected to a twisting strain due to the movement of the rails to different elevations with respect to each other.

This invention has for its object to provide means for securing the terminals of the rail-bond in such manner as to effectively resist both of these strains; and it consists in providing the terminals of the rail-bonds with pieces of wire-cloth which are extended laterally beyond the sides of the terminal in a plane with the bottom of the terminal, to thereby not only increase the area of contact with the rail, but also provide attaching-points remote from the terminal itself. The lateral extensions may be provided at one or both sides of the terminal; but for the greatest security they will be provided at both sides of the terminal. These extensions being composed of wire-cloth are foraminous, and the solder freely flows through them to engage the rail and insure a uniform or uninterrupted contact.

Figure 1 shows in plan view a rail-bond embodying this invention. Fig. 2 is a cross-section of one of the terminals of the rail-bond, showing particularly the wire-cloth which is secured to the terminal and which extends laterally beyond the sides thereof. Fig. 3 is an enlarged sectional detail to be referred to.

a represents the terminals of the rail-bond, and *b* the intermediate portions thereof. The rail-bond, as herein shown, is composed of several superimposed layers or strips of copper; but so far as my invention is concerned the construction of the rail-bond, as well as its shape or design, is immaterial so long as it is formed or provided with terminals adapted to be soldered to the rails. A piece or strip *c* of wire-cloth of fine mesh is applied to the terminal *a*, the cloth used preferably being composed of copper wire. The piece or strip of wire-cloth is or may be wrapped completely around the terminal and is extended laterally from each side of the terminal, as at *c'*, in a plane with the bottom of the terminal, the piece or strip of wire-cloth composing said lateral extensions being folded upon itself. The lateral extensions thus provided are quite stiff and are foraminous, so as to enable the solder to freely run through them into contact with the rail, and said extensions act to secure the terminals to the rails at points more or less remote from the terminals themselves, thereby enabling the terminals to withstand the sudden twisting strain to which they are subjected. The wire-cloth is soldered to the bond-terminal, and the meshes of the lateral extensions are filled with solder; but when the bond is applied to the rails additional solder will be supplied.

When the rail-bond is secured to the rails by solder, it will be seen that the wire-cloth becomes embedded in the solder connection between the bond-terminal and the rail and also is embedded in the solder at each side of the bond-terminal, and the rail-bond is very securely held. I do not herein claim a rail-bond having a terminal provided with a piece of wire-cloth on its under side which is adapted to be embedded in the solder, as the same forms the subject-matter of my application, Serial No. 262,701, hereinbefore referred to.

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

1. A rail-bond having a terminal provided with a piece of wire-cloth on its under side which is extended laterally beyond the sides of the terminals, substantially as described.

2. A rail-bond having a terminal provided with a piece of wire-cloth secured to its under side by solder which is extended laterally beyond the sides of the terminal, substantially as described.

3. A rail-bond having a terminal and a piece of wire-cloth wrapped around said terminal and extended laterally beyond the sides thereof, substantially as described.

4. A rail-bond having a terminal and a piece of wire-cloth wrapped around said terminal and secured thereto by solder and extended laterally beyond the sides of the terminal, substantially as described.

5. A rail-bond having a terminal provided with a piece of wire-cloth on its under side which is extended beyond the sides of the terminal, the meshes of said wire-cloth being filled with solder, substantially as described.

6. A rail-bond having a terminal provided with a lateral extension having numerous openings through it for the solder, substantially as described.

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

JOHN P. CLARK.

Witnesses:
CHAS. B. HOLE,
E. C. SCHMITT.