

No. 648,081.

Patented Apr. 24, 1900.

C. F. DE REDON.
ELECTRIC RAIL BOND.
(Application filed Aug. 24, 1899.)

(No Model.)

Fig. 1

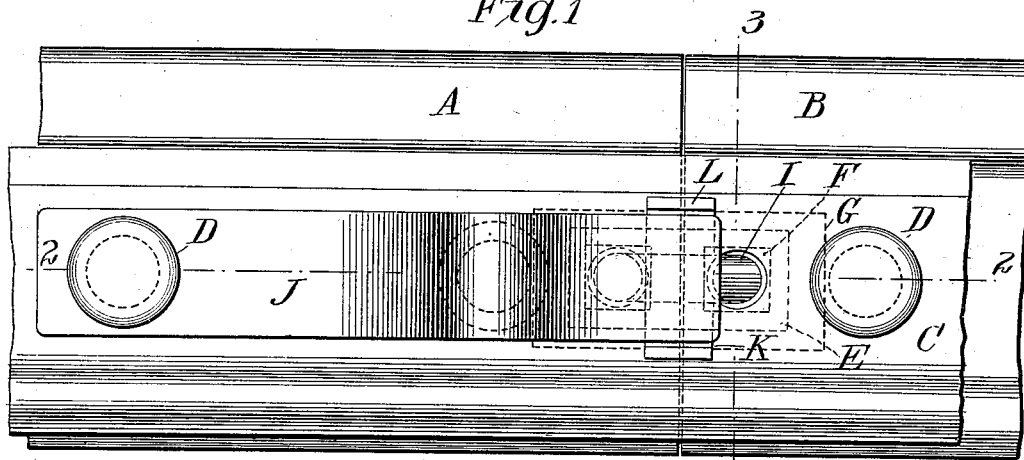


Fig. 2

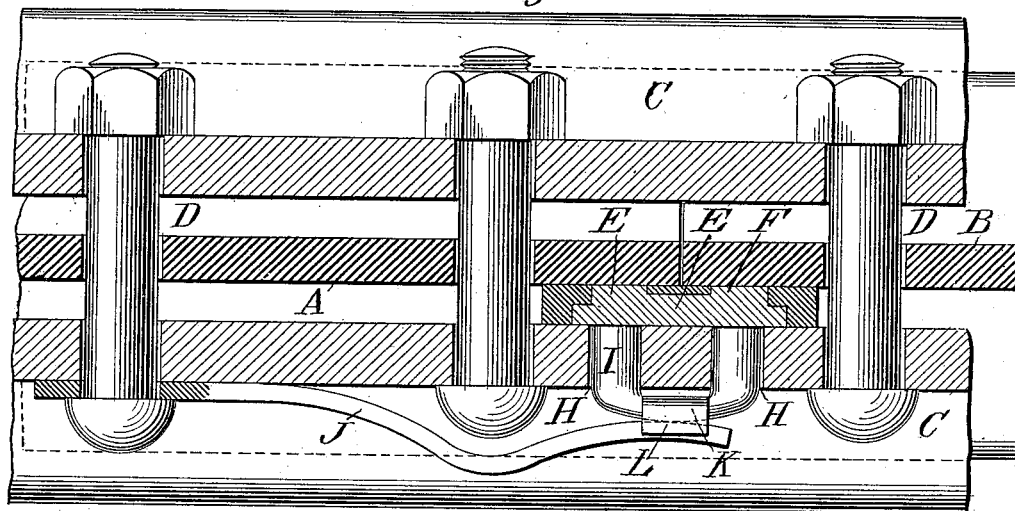


Fig. 4

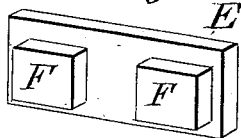
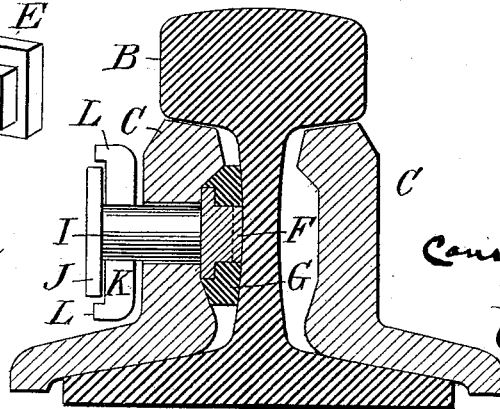


Fig. 3



Witnesses:
C. L. Belcher
J. H. Chapel.

Inventor
Constant F. de Redon
By
Charles E. Perry
Attorney

UNITED STATES PATENT OFFICE.

CONSTANT F. DE REDON, OF NEW YORK, N. Y., ASSIGNOR TO THE
WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF
PENNSYLVANIA.

ELECTRIC RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 648,081, dated April 24, 1900.

Application filed August 24, 1899. Serial No. 728,254. (No model.)

To all whom it may concern:

Be it known that I, CONSTANT F. DE REDON, a citizen of the Republic of France, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Rail-Bonds, (Case No. 1,) of which the following is a specification.

The invention relates to improvements in electric rail-bonds, and one object is to provide an electric-contact connection between two rails by the constant pressure thereon of the conductor without any necessity for screwing or riveting the parts together, the conductor being kept constantly against the rails by pressure alone and allowing the rails to expand and contract without affecting the conductor or its contact with the rails.

A further object of the invention is to provide a rail-bond which is amply protected against atmospheric influences and is entirely durable and permanent in character.

In accordance with my invention the conductor connecting the rails is preferably held in contact with the latter by means of spring-pressure and is not subjected to bending or straining by any expansion or contraction of the rails. The conductor connecting the sections of the rail is preferably a plate of copper placed against the webs of said sections, so as to connect the same, and is protected from atmospheric conditions, water, dirt, and other foreign matter by means of a soft-metal plate, and said conductor is simply held against the webs of the rail-sections by constant pressure without being bolted or riveted thereto. The construction and relative arrangement of the parts are such that the rails and their connections may expand or contract at will, while the conductor connecting said rails may remain stationary in all of its parts.

The nature and objects of the invention will be more fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, of two sections of a railway-rail equipped with the rail-bond constructed in accordance with and embodying the invention. Fig. 2 is

a horizontal longitudinal section of same on the dotted line 2 2 of Fig. 1. Fig. 3 is a vertical section of same on the dotted line 3 3 of Fig. 1, and Fig. 4 is a detached perspective view of the copper-plate conductor bonding the rail-sections.

In the drawings, A B respectively designate the sections of the railway-rail, C C the customary fish-plates, and D the usual bolts securing said fish-plates in the customary 60 manner.

The conductor, which in accordance with the present invention connects the rail-sections A B, is designated by the letter E, and, as illustrated more clearly in Fig. 4, said conductor E, which is preferably of copper, is in the form of a plate provided with contacts F, adapted, as illustrated in Fig. 2, to engage the face of the webs of the rails A B. The plate E is seated within the soft-metal protector G, which is in the form of a plate adapted to fit around the edges of the plate E and around and between the contacts F of said plate E, as illustrated in Figs. 2 and 3. The soft metal G, located between the contacts F, is of sufficient width to cover the joint between the rail-sections A B and to at all times prevent water or other foreign matter from reaching said contacts through said joint. The soft-metal protector G firmly contacts with the surface of the rails A B and with the edges of the plates E and prevents water or other foreign matter from reaching the contacts F along the sides of the rails. The soft metal G forms, in effect, a protecting-casing for the conductor E, and with said conductor is located between the fish-plate and the web of the rail, said fish-plate being, as usual, secured firmly in position against the rail and in the present instance against the conductor E and soft-metal protector G, whereby said conductor and said protector are brought into firm contact with the web-surfaces of the rail-sections, the contacts F, which are of somewhat-extended surface-area, directly impinging said web-surfaces. The fish-plate C, directly over the conducting-plate E and preferably directly in line with the contacts F, is formed with the apertures H H, into which are freely inserted the legs of the U-shaped or 100

bifurcated post I, the inner ends of the members of which contact with the exterior surface of the conductor E, being thereagainst firmly pressed by means of the spring J, which
 5 is secured at one end upon one of the bolts D and has its other end in contact with the transverse bar K, connecting the members of said post I. The bar K is formed with the flanges L L at its upper and lower edges in order to
 10 prevent the spring J from moving upward or downward and to retain the end of said spring directly against the post I. The spring J is of considerable strength and exerts a constant pressure against the post I and through the
 15 latter against the conducting-plate E, whereby the latter is preserved in constant contact with the rail-sections A B without being riveted or bolted or otherwise attached to said rail-sections. The conducting-plate E, arranged
 20 and secured in the manner above explained, is not subjected to any bending or straining during the expansion and contraction of the rail-sections, but preserves its contact with said sections at all times without interfering
 25 with the expansion and contraction of said sections. The conducting-plate E while in use is protected against the effects of water, moisture, and dirt, and hence it is both lasting and efficient.
 30 The rail-bonds, which have been secured at their ends to rails or parts connected therewith, so as to be compelled to expand and contract with the rails, have proved to be inefficient for long service, and this particular
 35 objection to rail-bonds as heretofore constructed and used is one of the main objects of the present invention to obviate.

The rail-bonds constructed in accordance with the present invention possess the merit
 40 not only of being simple and comparatively inexpensive, but of being entirely efficient and lasting.

One of the main objects of the present invention is to obviate any direct attachment
 45 of the conducting-plate to the rail-sections, but to maintain said plate against the face of the rail-sections by constant pressure without attaching said plate to the rail-sections, leaving the rail-sections free to expand and contract at will without affecting the conducting-plates, and leaving the conducting-plates entirely free of the rails, with the exception of
 50 simply having a face-to-face contact therewith.

I do not limit the invention to the precise form and construction of the parts illustrated in the drawings, since this may vary with the conditions to be met with in carrying the invention into effect.

60 I claim as my invention and desire to secure by Letters Patent—

1. In combination with the rail, the plate of conducting material connecting the sections

of same and contacting therewith, the soft metal protecting said plate, and the spring 65 pressing said plate against said rail; substantially as set forth.

2. In combination with the rail, the plate of copper placed against and connecting the webs of the sections of same, the soft-metal 70 protector encompassing the edges of said plate and a spring exerting a constant pressure against said plate to retain it in face contact with said webs; substantially as set forth.

3. In combination with the rail, the conducting-plate having upon its inner face the 75 two contacts for engagement with the rail-sections, the soft-metal protector encompassing the edges of said plate and said contacts, and the spring exerting a constant pressure 80 against said plate; substantially as set forth.

4. In combination with the rail, the conductor connecting the sections of same and being in face contact with the webs of said 85 sections, the post extending through the fish-plate and contacting with said conductor, and the spring flexed against said post; substantially as set forth.

5. In combination with the rail, the plate-conductor having the contacts in face contact 90 with the webs of the rail-sections, the post having its members extended through the fish-plate and against said plate-conductor, the bearing at the outer end of said post and the spring flexed against said post 95 and having its end held within said bearing; substantially as set forth.

6. In combination with the rail, the plate-conductor connecting the sections of said rail and contacting with the web-surfaces of 100 same, the bifurcated post having the inner ends of its members in contact with said plate and provided at its outer end with the bearing having the edge flanges and the spring flexed against said post and having its free 105 end between said flanges and against said bearing; substantially as set forth.

7. The combination with the ends of adjacent railway-rails, of a rail-bond connecting said ends and contacting therewith, a spring 110 pressing the said plate against the said rail ends, and a protecting-frame of soft material adapted to keep out dust and moisture.

8. The combination with a railway-rail and a conducting-plate connecting the sections of 115 the said rail, of a spring held rigidly at one end, the said spring being adapted to press with its free end the said plate against the said rail.

Signed at New York, in the county of New York, and State of New York, this 4th day of August, A. D. 1899.

CONSTANT F. DE REDON.

Witnesses:

WM. H. CAPEL,

GEORGE H. STOCKBRIDGE.