No. 648,084. Patented Apr. 24, 1900.

C. F. DE REDON.

ELECTRIC RAIL BOND.

(No Model.) (Application filed Aug. 24, 1899.)

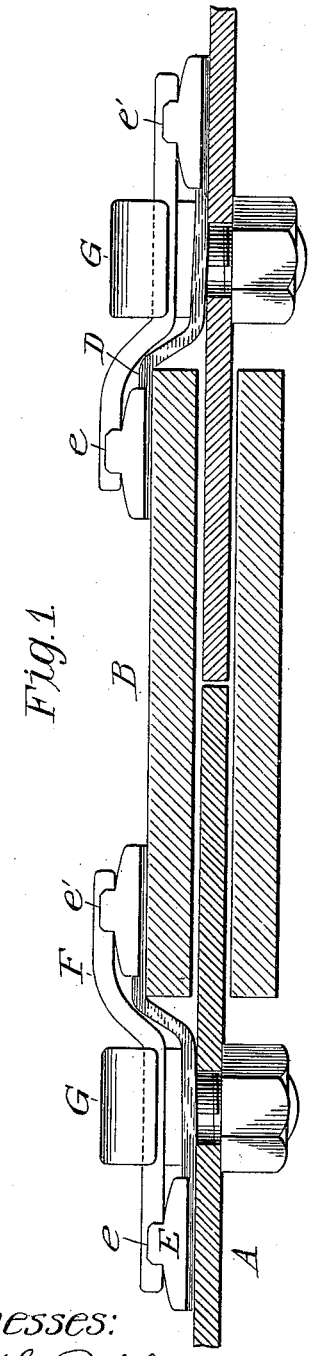

Fig. 1.

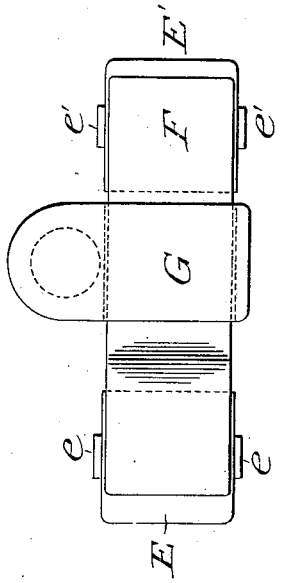

Fig. 3.

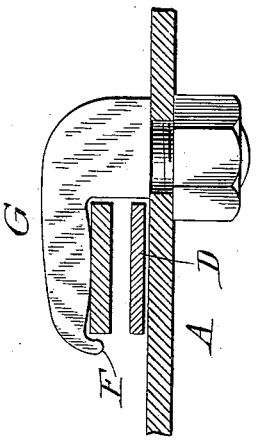

Fig. 2.

Witnesses:
C. L. Belcher
Wm. H. Capel.

Inventor
Louis Paul F. de Redon
By
Charles A. Gross
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. 648,084, dated April 24, 1900.

Application filed August 24, 1899. Serial No. 728,257. (No model.)

To all whom it may concern:

Be it known that I, CONSTANT F. DE REDON, a citizen of the Republic of France, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Rail-Bonds, of which the following is a specification.

A rail-bond in which electrical contact is constantly maintained between the web of a railway-rail and the usual fish-plate without calling for any complicated additions to the ordinary railway-rail structure is what constitutes the main object of the present invention.

In carrying out this invention I retain the features which belong to all my inventions in railway-bonds—that is to say, I insure perfect contact between the relatively-moving parts of a railway-rail joint, such contact, however, being perfectly free so far as the natural movements of the parts are concerned and yet of the most positive character, because the contact is accomplished by the action of springs. In other words, I have a flexible yielding contact which is never broken and the pressure of which never varies, notwithstanding that the expansion and contraction of the rails are allowed to take place freely and that the effects due to the pounding of the rail-ends are assumed to be present.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a horizontal section of a portion of a rail, showing my bonding device bridging the said rail and one of the fish-plates connected therewith. Fig. 2 is a vertical section of a portion of said rail with my bonding device applied to it, and Fig. 3 is a side view of one of my rail-bonds detached from the rail and the fish-plate.

A is a railway-rail, and B and C are ordinary fish-plates. To make good electrical connection from one to the other of the said elements, I provide a plate D of copper, and I mount upon opposite ends thereof two heads E E′ of metal or other rigid material, and I connect the said heads to the copper strip or plate by means of rivets or by any other suitable means. Each head is provided with flanges *e e′*, and a spring F, of steel, extends from head to head and is held at each end between the flanges. To make the spring effective, I employ a bent screw-bolt G, as shown, together with a nut H. The bent portion of the screw-bolt G extends across the spring F, and when the nut H is tightened upon the said bolt it exerts pressure upon the spring F and forces the copper strip D at its ends firmly against the web of the rail A and the fish-plate B, respectively. The same structure appears at the opposite end of the fish-plate, and by means of the two bonding devices good electrical connection is maintained from rail to rail.

The structure described is very simple, and yet it accomplishes the result of making firm electrical contact from part to part and at the same time it allows sufficient relative longitudinal movement between the connected parts to allow for ordinary expansion and contraction, and it also permits of sufficient lateral movement, by virtue of the spring F, to meet the ordinary requirements of railway-service.

In order to apply this rail-bond to ordinary railway-rail constructions, it is only necessary to perforate the web of the rail, as shown, for the purpose of passing the shaft of the screw-bolt G through it.

By reason of the length of the bearing of the head E upon the copper strip D at each end a great surface of contact is insured between the said strip and the rail and fish-plate, respectively.

The invention claimed is—

1. The combination with a railway-rail and a fish-plate, of a conductor connecting the same, and a spring pressing the said conductor against both the rail and the fish-plate.

2. The combination with a railway-rail and a fish-plate, of a spring-pressed conductor bearing against both the rail and fish-plate, and a bolt extending through the rail and compressing the spring.

3. The combination with a railway-rail and a fish-plate secured thereto, of a continuous conductor making contact with both the rail and fish-plate, and a spring bearing against the said conductor at both ends thereof.

4. The combination with a railway-rail and a fish-plate joined thereto, of a conductor bearing against both the rail and the fish-plate, a cap or head on each end of the conductor and having a considerable surface or bearing upon the same, and a spring pressing upon the said heads.

5. The combination with a railway-rail and a fish-plate attached thereto, of a copper conductor bearing upon both the rail and the fish-plate, heads upon the said conductor, a spring bearing upon the said heads, and a screw-bolt compressing the said spring, the said heads having flanges which project outside the said spring.

6. The combination with a pair of adjoining railway-rails and a fish-plate attached thereto, of a spring-pressed conductor at each end of the fish-plate, the said conductor bearing both upon the fish-plate and the rail, whereby freedom of longitudinal movement of the rails is secured without injury to the contact devices.

Signed by me at New York city, New York, this 4th day of August, 1899.

CONSTANT F. DE REDON.

Witnesses:
WM. H. CAPEL,
GEORGE H. STOCKBRIDGE.