

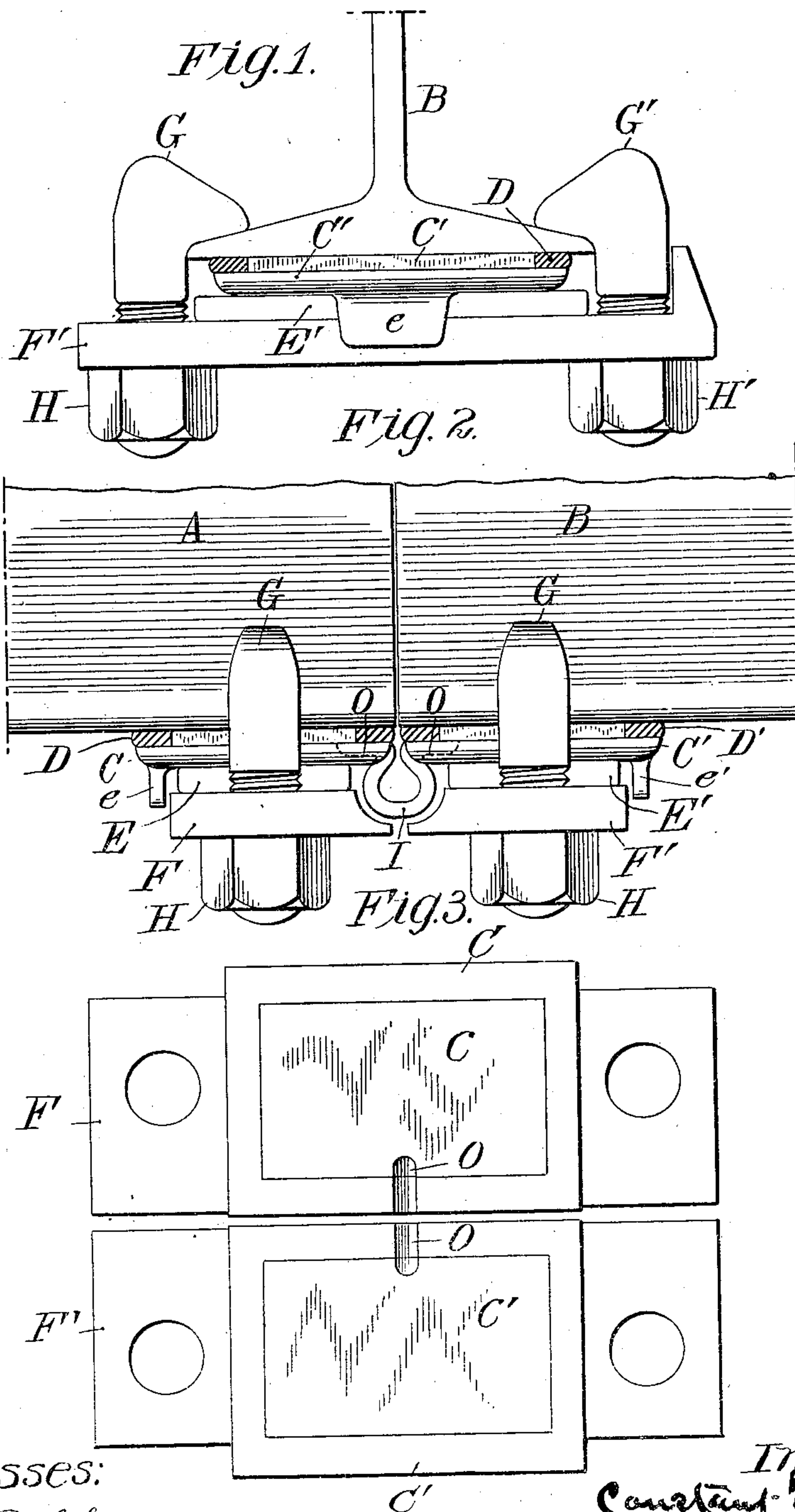
No. 648,083.

Patented Apr. 24, 1900.

C. F. DE REDON.
ELECTRIC RAIL BOND.

(Application filed Aug. 24, 1899.)

(No Model.)



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

Inventor
Constant F. de Redon
By
Charles A. 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. 648,083, dated April 24, 1900.

Application filed August 24, 1899. Serial No. 728,256. (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 and State of New York, have invented certain new and useful Improvements in Electric Rail-Bonds, (Case No. 3,) of which the following is a specification.

In developing my system of rail-bonds wherein the contact-surfaces of the conductors are constantly maintained in contact with the rails, so as to form practically water-tight and dust-proof connection therewith, without being bolted or riveted thereto I have devised various forms of apparatus; and the present invention relates to one form which I find to be especially well adapted to the purposes I have in view.

By means of the construction which constitutes the subject of the present invention I am able to secure a very flexible connection between the conductor which forms the main electrical part of the bond and the ends of adjacent rail-sections without sacrificing any of the essential advantages which appertain to good railway bond connections.

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

Figure 1 is an end view of a railway-rail having my bonding device applied thereto. Fig. 2 is a side elevation of a portion of two adjacent railway-rails with my bonding device attached, and Fig. 3 is a plan of the bonding device detached from the rails and having the attaching-bolts removed.

In the drawings, A and B are portions of two adjacent railway-rails. Below the said rails are plates C C', of iron, the former having suitably attached to it a copper contact-plate c and the latter a similar contact-plate c'. Surrounding the said contact-plates of copper on each of the iron plates is a frame D, of leather or similar material or preferably of some metal, such as lead. Below the plates C and C' are springs E E', respectively, formed from small curved plates of steel. In order to form a suitable backing for said springs, I supply metallic plates F F' below the springs, and I clamp the said plates,

together with the springs and the contact bearing-plates, against the lower sides of the rails A and B by means of hooked screw-bolts G G', supplied with suitable nuts H H'.

It will be seen that the plates F and F' extend across nearly or quite the full width of the rails and that the plates C C' are provided with flanges e e', which prevent the dislodgment of the said contact bearing-plates.

To make good electrical connections across from one contact-plate D to the other contact-plate D', I provide a bent piece I, of copper, the ends of which are laid in openings o o in the respective plates C C'. The said piece of copper is large enough to have a carrying capacity equal to that of either of the rails A or B. The plates F and F' are cut away or rounded off to give room for the copper piece I.

The copper piece I may be permanently connected at its outer ends to the plates D D', or it may simply be laid in place in the grooves o o. In any event the rails A and B will manifestly be united by a good mechanical and electrical connection, and the structure as a whole will have great flexibility, inasmuch as the copper piece I will be capable of yielding somewhat, while the fact that the plates D and D' are supported upon mechanically-independent structures allows for the pounding effect of the wheels. Moreover, the rails A and B can expand longitudinally without destroying the bonding apparatus or injuring the electrical continuity of the rail-circuit.

I claim as my invention—

1. The combination with a pair of adjacent railway-rails, of a bonding device secured to the under side of the rails, the said bonding device consisting of separate flexibly-supported contact-pieces joined by a flexible conductor.

2. The combination with the ends of adjacent railway-rails, of spring-pressed contact devices underneath the said rails, means for clamping the said devices against the bottom of the rails, and a flexible conductor joining the contact devices.

3. The combination with the ends of adja-

cent railway-rails, of a separate contact device secured to the under side of each rail, means for clamping the said contact devices against the bottom of the rails, and springs
5 interposed between the said clamping devices and the contact-carrying plates.

4. The combination with the ends of adjacent railway-rails, of separate contact plates or pieces held flexibly against the under side
10 of the rail ends, and protectors for the said contact devices adapted to keep out moisture and dust.

5. The combination with the ends of adjacent railway-rails, of electrically-connected
15 contact devices secured to the under side of the rails, clamps for holding the said contact devices against the rails, the said clamps con-

sisting of metallic plates secured to the foot of the rails by bent screw-bolts.

6. The combination with the ends of adjacent railway-rails, of electrically-connected
20 contact devices in contact with the underside of the said rails, clamps for holding the contact devices to the rails, and springs interposed between said clamps and the contact-
25 carrying plates, the said clamping devices consisting of rigid metallic plates secured to the foot of the rails by bent screw-bolts.

Signed by me in the city, county, and State of New York this 4th day of August, 1899. 30

CONSTANT F. DE REDON.

Witnesses:

WM. H. CAPEL,

GEORGE H. STOCKBRIDGE.