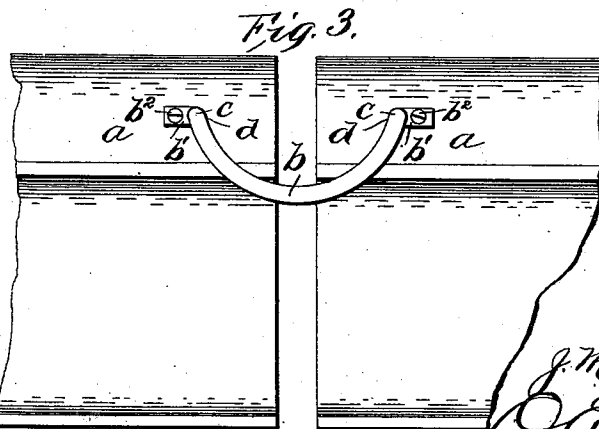
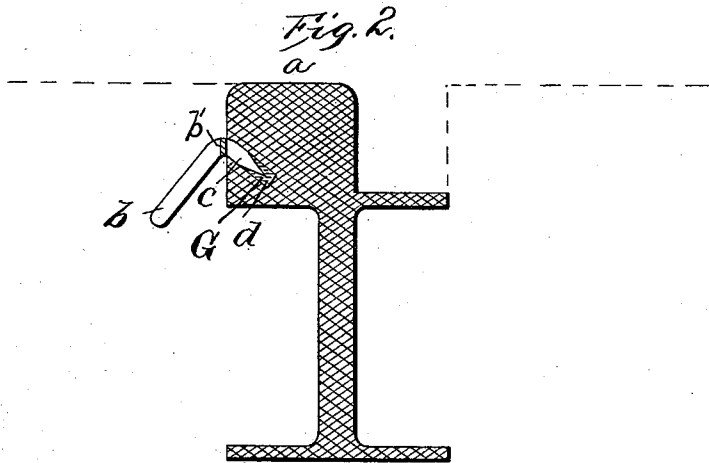
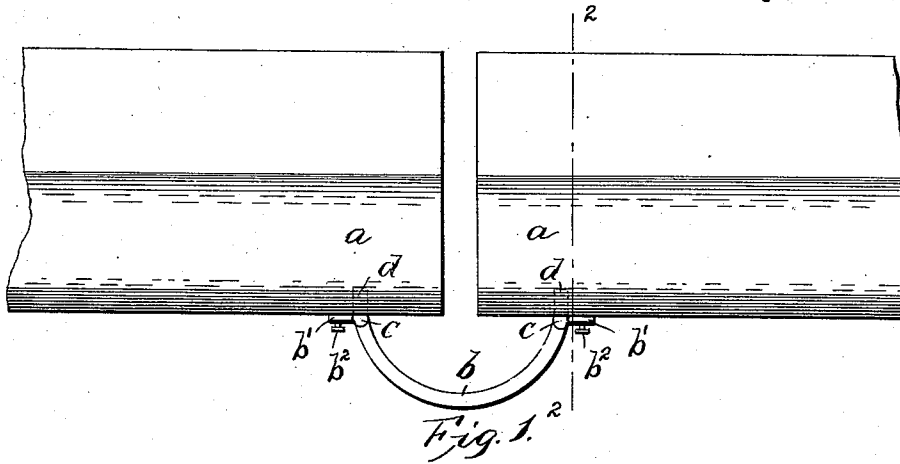


(No Model.)

J. M. FAULKNER.
ELECTRICAL CONNECTION.

No. 538,904.

Patented May 7, 1895.



Witnesses:
E. C. Duffy
C. M. Werle

Inventor
J. M. Faulkner
per E. C. Duffy
Attorney

UNITED STATES PATENT OFFICE.

JAMES M. FAULKNER, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRICAL CONNECTION.

SPECIFICATION forming part of Letters Patent No. 538,904, dated May 7, 1895.

Application filed February 28, 1895. Serial No. 540,094. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. FAULKNER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electrical Connections; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in the art of electrically connecting conductor sections.

It is a well known fact to those experienced in the art of electrical railway construction and operation that waste and leakage of current take place at the bonds or connections between sections of conductors, such as the railroad rails, by reason of poor joints, oxidation, &c. This leakage is some times so great as to seriously impede traffic on the road and is always a source of great expense and waste of current.

It is the object of this invention to overcome this leakage by providing an improved manner of electrically connecting rails, &c., so that perfect electrical joints will be made between the conductor sections in a simple, effective and economical manner.

This invention consists in the improved method and in certain novel features of construction and in combinations of parts more fully and particularly described hereinafter, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a top plan view of two abutting rail ends, showing a convenient way of accomplishing the object of my invention. Fig. 2 is a cross-section on the line 2 2, Fig. 1. Fig. 3 is a side elevation of the rail ends and bond.

In the drawings, *a, a*, are two abutting railroad rails employed as a conductor and which are electrically united or bonded by the conducting wire or strip *b*. This strip has its ends *c, c*, bent laterally and ending wells or holes *d, d*, suitably formed in the rails and containing mercury *G*, into which said strip ends extend. The bond is preferably formed

curved or bowed substantially as shown so as to readily accommodate all expansion and contraction of the rails. The ends *c, c*, of the bond are bent laterally at any suitable angle and each tapered to a point. Perforated lips *b', b'*, can be formed on the bond at the angles where the points are bent, to fit against the outer surface of the rails when the points are in the wells. Screws *b²*, are passed through these ears into holes tapped in the rails by which means the bonds are securely fastened and held.

The wells *d, d*, can be drilled in any desirable portion of the rail so as to have a downward inclination from their open ends. As here shown the wells are formed in the sides of the rail head at a downward and inward inclination. The bond ends are driven into these wells so as to tightly close the same and with the tapered ends in the mercury. The bonds are secured by suitable means and hang down from the rails and are completely covered by the material of the street.

In carrying out my invention in bonding rails, &c., already laid, the connecting strips are properly prepared with their lateral bent ends. The rails then have the holes drilled therein near their ends, and at any desired portions thereof. The mercury is then placed to a suitable depth in the holes and the ends of the connecting strips are driven into the holes so as to enter the mercury and the parts are held by the securing devices and the mercury covered by the ends of the bonds.

I do not limit myself to any peculiar location of the mercury wells or the strip.

It is evident that various changes might be made in the forms, locations and constructions of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction herein set forth, but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

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

1. A rail having a hole or chamber formed therein, mercury in said hole and a connecting strip secured to said rail with its end extended into said hole and entering the mer-

cury therein, the chamber being closed and the strip entering the outer end thereof substantially as described.

2. Two adjacent conductor sections having
5 holes or chambers therein, with mercury in the holes and the bond having its ends closing said holes and entering the mercury, substantially as described.

3. The combination of the rails having the
10 holes or wells formed therein at their ends and containing mercury, the conductor strips between the rails having their ends extending into such holes and the mercury and closing the holes, and means securing the strips,
15 substantially as described.

4. The electric bond comprising the curved conductor with bent tapered ends and the perforated securing ears at the bends, substantially as described.

5. The rail ends having wells containing 2c mercury, the bond having its ends driven into and closing said wells with its points entering the mercury, substantially as described.

6. The rail ends having the downwardly inclined holes containing mercury, and the 25 bowed bond having the bent pointed ends driven into and closing said holes with the point in the mercury, and having the lips for securing the bond to the exterior of the rails, substantially as described. 30

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES M. FAULKNER.

Witnesses:

C. M. WERLE;
HUBERT E. PECK.