No. 842,815. PATENTED JAN. 29, 1907.

E. H. SCHWARTZ.

RAIL JOINT.

APPLICATION FILED MAY 25, 1903.

Fig. 1.

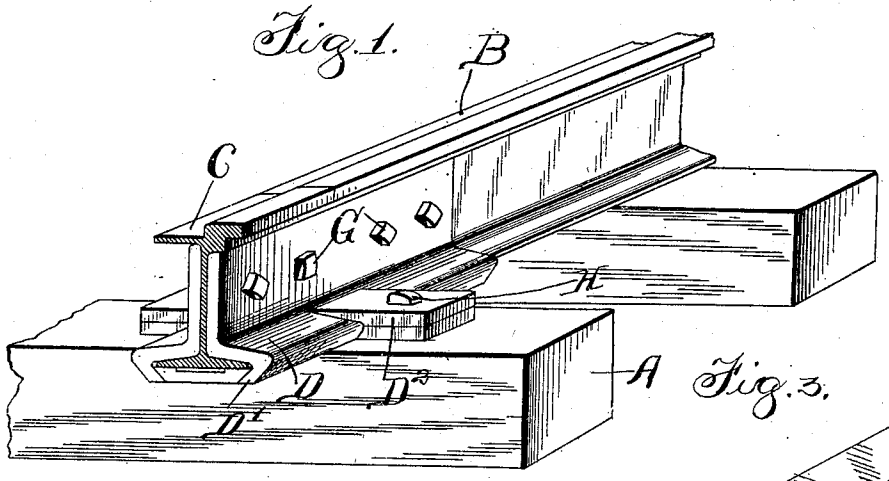


Fig. 3.

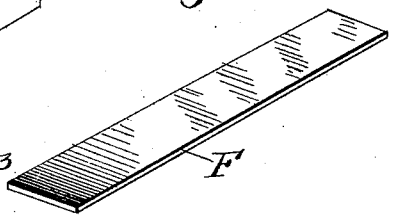


Fig. 2.

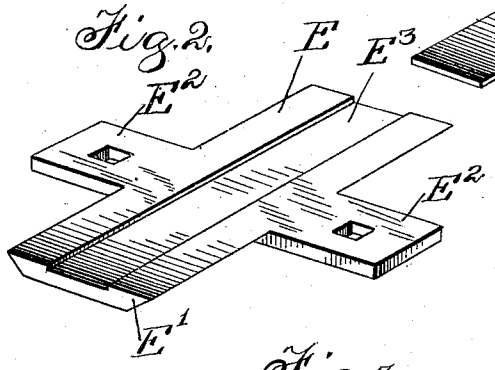
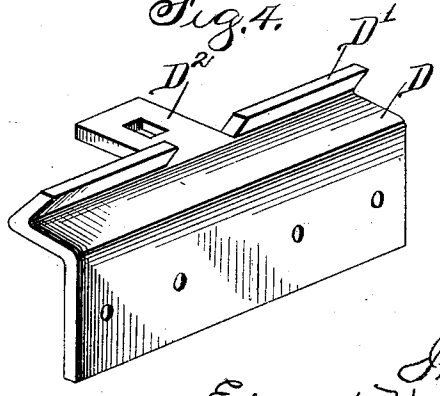


Fig. 4.



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RAIL-JOINT.

No. 842,815. Specification of Letters Patent. Patented Jan. 29, 1907.

Application filed May 25, 1903. Serial No. 158,711.

To all whom it may concern:

Be it known that I, EDWARD H. SCHWARTZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to improvements in rail-joints, especially in such rail-joints as are adapted to serve as rail-bonds for electrically-propelled cars, in which it is necessary to have a good electrical connection between the ends of adjacent rails.

The object of my invention is to provide a strong, simple, inexpensive, and effective rail-joint which may be readily and quickly applied and which may be provided with means for effectively establishing an electrical connection between the adjacent ends of rails, which shall be strong, and which shall not be readily displaced. These and such other objects as may hereinafter appear are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of two rails secured to each other by my novel joint. Fig. 2 is a perspective view of my bed-plate. Fig. 3 is a perspective view of the connecting-strip, and Fig. 4 is a perspective view of one of my peculiar fish-plates reversed.

Like letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A is a sleeper or tie.

B and C are rails arranged end to end in the usual manner. These rails are securely attached or bonded together by my novel rail-joint comprising the peculiar fish-plate D, the bed-plate E, and the connecting-strip F. Preferably the upper surface of the sleeper or tie A is in a plane below that of the upper surfaces of the adjacent ties, as shown in the drawings, or else a recess is cut in the upper face of the sleeper or tie A to receive my improved rail-joint.

Mounted upon the tie A is the bed-plate E. The edges of the bed-plate E are beveled outwardly from the under face of the plate. The bed-plate E is also provided with lugs E^2, which extend transversely of the rail. Where my improved joint is used with an electrically-operated road, the upper face of the bed-plate is also provided, preferably, with a groove E^3 for receiving the contact-strip F.

My peculiar form of fish-plate is provided with an inwardly-extending portion or flange D′ and preferably with a lug D^2, extending transversely of the rail. Opposite to the lug D^2 the flange D′ is preferably cut away in the manner shown in Fig. 4 to accommodate the lug E^2 on the base-plate E.

In the preferred form of my invention as shown in the drawings these parts are so arranged that when the joint is assembled, as shown in Fig. 1, the lug E^2 of the base-plate E will extend through the opening or cut-away portion of the inwardly-extending flange D′ of the fish-plate D, the lug D^2 of the fish-plate D will rest upon the lug E^2 of the base-plate E, and spike-openings through the lugs D^2 and E^2 will substantially register, although the lugs D^2 and E^2 may be secured to each other in any suitable well-known manner.

With the parts constructed as shown the joint will be assembled as follows: The base-plate E being placed in position upon the tie or sleeper A and the connecting or contact strip F, which is preferably of copper or aluminium or other material of high conductivity, is placed upon the base-plate E, and if the base-plate E is formed exactly as shown in Fig. 2 the strip F is placed within the groove E^3, but preferably so that the upper face of the strip F will project slightly above the base of the base-plate E. The ends of the rail B C being now placed upon the base-plate E and upon the contact-strip F and in intimate contact with said contact-strip F, the fish-plates D are put in place in the usual manner and are clamped together and to the rails C B by means of the bolt G, also in a familiar manner. As is shown in the end section, which appears in Fig. 1, the parts are so related to each other that the tightening together of the fish-plates D will bring the inwardly-converging parts or flanges D′ on the fish-plate into contact and coöperation with the outwardly-beveled edges E′ of the base-plate with a resulting wedging action, which will draw the rails B C and the base-plate E tightly together, thus insuring an effective electrical connection between the rails B C by means of the contact-strip F, which at the same time is effectively protected as to its contact-surfaces. The parts being thus securely drawn together and flanged in position by means of the bolts G and any suitable means coöperating with said bolt, the parts may be

further securely clamped together, and especially secured against any loss of contact which might occur in case the flanges of the fish-plate should spring outwardly, by securing the lugs E^2 and D^2 to each other, preferably by means of a spike H, driven through the perforation provided therefor in the lugs E^2 and D^2 and into the sleeper A.

To meet practical conditions, I prefer to provide one pair of lugs, such as D^2, with an elongated slot, as shown. Obviously various changes in detail may be made without departing from the spirit of my invention, which contemplates, broadly, first, the use of a base-plate in combination with fish-plates having an inwardly-projecting portion arranged to draw the base-plate tightly against the bottom of the rail when the fish-plates are clamped together; second, the like construction, in which an electrical contact-strip is mounted upon the base-plate and between it and the bottom of the rail, and, third, the construction in which the base-plate and the fish-plate have coöperating engagement, substantially as shown.

I claim—

1. A rail-joint comprising a base-plate provided with a seat in its upper face, a contact-strip mounted within said seat, and a pair of fish-plates, said base-plate being provided with beveled edges and said fish-plates being provided with inwardly-extending flanges, all adapted to coöperate to draw said base-plate and said contact-strip upwardly and in contact with the under surface of the rail, when the fish-plates are clamped together.

2. A rail-joint comprising a base-plate, the opposite edges of which are beveled upwardly and outwardly, said base-plate being provided with lugs extending outwardly and with a seat in its upper face, a contact-strip mounted within said seat, a pair of fish-plates, each of said fish-plates being provided with a downwardly and inwardly projecting flange arranged to engage the beveled edge of the base-plate, so as to draw the base-plate tightly against the under surface of a rail mounted upon said base-plate, and clamped between said fish-plates, said fish-plates being also provided with outwardly-extending lugs, and means for securing the lugs on the base-plate and the lugs on the fish-plates to each other, substantially as described.

3. A rail-joint comprising a base-plate on which the ends of the rail rest and which is provided with a longitudinal groove in its top surface, and a bonding or connecting strip located in said groove in contact with the bottom surfaces of the rail ends, said rail-joint embracing means by which said base-plate is clamped toward the bottoms of the rail ends and said bonding or connecting strip thereby pressed firmly against the same.

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