W. M. RUSH.

BOND SPRING FOR RAIL JOINTS.

APPLICATION FILED JUNE 25, 1912.

1,042,483. Patented Oct. 29, 1912.

Fig. 1.

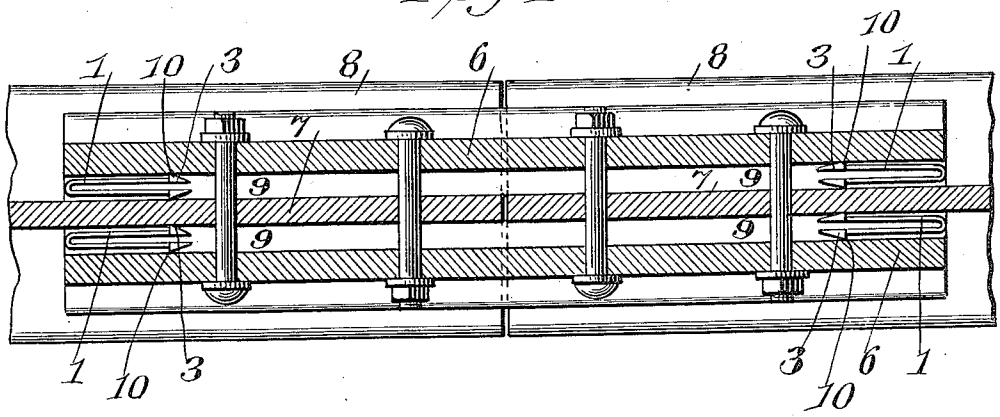


Fig. 2.

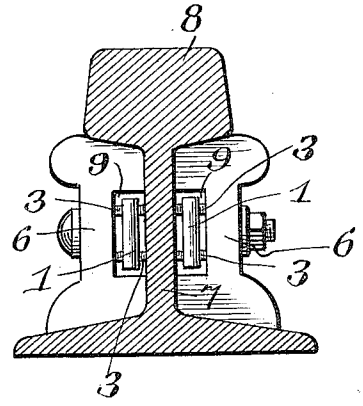


Fig. 3.

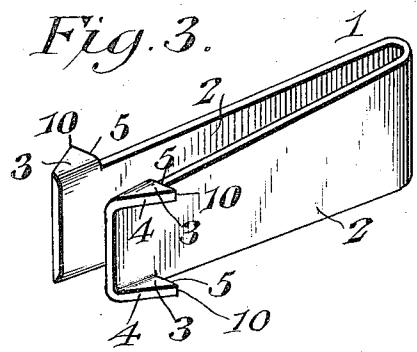
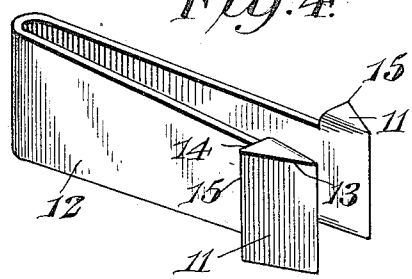


Fig. 4.



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WILLIAM M. RUSH, OF GREENSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO DALLAS M. SMITH, OF ARMBRUST, PENNSYLVANIA.

BOND-SPRING FOR RAIL-JOINTS.

1,042,483. Specification of Letters Patent. Patented Oct. 29, 1912.

Application filed June 25, 1912. Serial No. 705,806.

To all whom it may concern:

Be it known that I, WILLIAM M. RUSH, a citizen of the United States, residing at Greensburg, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Bond-Spring for Rail-Joints, of which the following is a specification.

The invention relates to a bond spring for rail joints.

The object of the present invention is to improve the construction of electric rail bonds, and to provide a simple, inexpensive and efficient bond spring of great strength and durability, adapted to be easily and quickly applied to a rail joint either when the track is in the course of construction or after the same has been laid, and capable of indicating a broken fish plate by a breakage of the circuit, whereby defective rail joints may be readily detected.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a horizontal sectional view of a rail joint equipped with bond springs, constructed in accordance with this invention. Fig. 2 is a transverse sectional view, the fish plates and the bond springs being in elevation. Fig. 3 is a perspective view of one of the bond springs. Fig. 4 is a similar view, illustrating another form of the invention.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates an approximately U-shaped bond spring constructed of suitable resilient metal and preferably galvanized or otherwise coated to prevent it from rusting. The sides 2 of the bond spring taper in width toward the terminals of the material, and they are provided at their ends with laterally projecting spurs or lugs 3 formed integral with the spring and presenting outer beveled edges 4 having inner shoulders 5. The lugs or spurs are approximately triangular, and they provide contact points for engaging the fish plates 6 of a rail joint and the webs 7 of rails 8. The bond springs are designed for use on the rail joints of tracks where electric or electromagnetic signal work is installed, or where track circuits are required, and they are adapted to be easily and quickly applied to a finished track by driving them into the spaces 9 between the fish plates and the rails without removing the bolts or the fish plates. Also in track construction, they may be placed in position when the fish plates are applied to the rails, or they may be driven between the fish plates and the webs of the rails after the parts have been bolted together. The beveled lugs or spurs form pointed terminals to facilitate the introduction of the spring between the fish plate and the rails, and the shoulders 5 prevent the springs from moving outward from the rail joint, and the lugs or spurs also form contact points 10, which are held tightly in engagement with the webs of the rails and the inner faces of the fish plates by the resiliency of the bond spring. The jar and vibration incident to the passage of a train over the track are adapted to keep the contact points bright and thereby maintain a proper electrical contact between the sides of the springs and the parts of the rail joint. Also the expansion and contraction of the rails will assist in maintaining the contact points in a bright and operative condition.

While only two bond springs are necessary for bonding the rails of a joint, four bond springs are preferably provided at each rail joint, and they are located in spaced relation with the ends of the rail, and they conduct the current through the fish plates from one rail to the other and not directly through the rails, and they are thereby adapted to indicate a broken fish plate by interrupting the current and thereby enable a defective rail joint to be detected. When the springs are in position, they cannot be torn off, and when removed from a rail joint they may be used over again.

One or more of the pointed lugs or spurs 3 may be employed, and in Figs. 1 to 3 of the drawing, they are bent at right angles and project from the outer faces of the sides

2 of the bond spring, which in this form of the invention is constructed of sheet metal. In Fig. 4 of the drawing, the beveled lugs or spurs 11 are solid and extend entirely across the outer faces of the terminal portions of the sides of the spring 12. The solid lugs form relatively sharp front edges and present beveled outer faces 13 and form inner shoulders 14. They also provide sharp contact edges 15 for engaging the fish plates and webs of the rails. Any other preferred arrangement of lugs or spurs may, of course, be employed.

What is claimed is:—

1. An electric rail bond consisting of a spring adapted to be driven into the space between the fish plate and the rail of a rail joint and having opposite contacts for engaging the inner face of the fish plate and the rail to conduct the current from the rail through the fish plate.

2. An electric rail bond consisting of a spring provided at the end with tapered lugs or spurs presenting front beveled faces to enable the spring to be driven between a fish plate and a rail for conducting the current from the rail through the fish plate, said lugs forming laterally disposed contact points and providing shoulders, whereby they are retained in place between the fish plate and the rail.

3. An electric rail bond consisting of an approximately U-shaped spring adapted to be arranged between a fish plate and the web of a rail in spaced relation with the end thereof for conducting the current from the rail through the fish plate.

4. An electric rail bond consisting of a spring composed of two sides and adapted to be arranged between a fish plate and the web of a rail, said sides being provided with laterally projecting lugs or spurs forming contact points.

5. An electric rail bond consisting of a spring composed of two sides and adapted to be arranged between a fish plate and the web of a rail, said sides being provided at their front ends with tapered lugs or spurs extending laterally from the sides of the spring.

6. An electric rail bond consisting of a spring composed of two sides and adapted to be arranged between a fish plate and the web of a rail, said sides being provided at their side edges with tapered lugs or spurs bent outwardly at right angles and forming laterally projecting contact points.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. RUSH.

Witnesses:
S. M. ARTER,
D. E. DUNMIRE.