F. B. COREY.

INSULATED RAIL JOINT.

APPLICATION FILED JAN. 18, 1916.

1,174,478.

Patented Mar. 7, 1916.

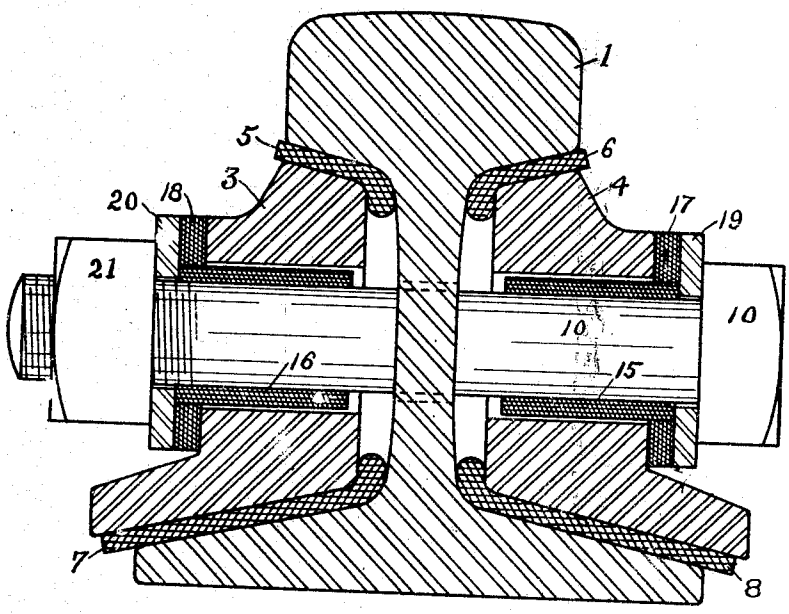


Fig. 1.

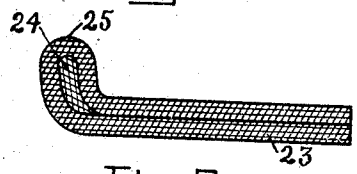


Fig. 2.

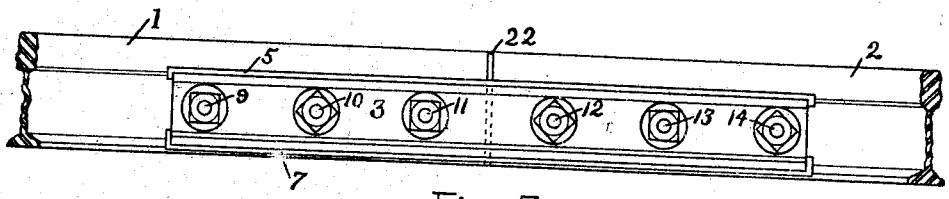


Fig. 3.

Witnesses,

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FRED B. COREY, OF EDGEWOOD PARK, PENNSYLVANIA.

INSULATED RAIL-JOINT.

1,174,478. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed January 18, 1916. Serial No. 72,678.

To all whom it may concern:

Be it known that I, FRED B. COREY, a citizen of the United States, residing at Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

My invention relates to insulated rail joints, used in connection with railway signal apparatus, to interrupt the electrical continuity of the track rails, as required in track circuit signaling.

The objects of my invention are to secure the maximum strength and durability of the rail joint with a minimum amount of insulating material, and to guard against the natural tendency of the insulating material to move out of position when subjected to the excessive vibration and strains due to heavy traffic over the rails that are joined by such insulated joints.

My invention consists in a novel method of forming the strips of insulating material that are placed between the rails and the metal splice-bars and incorporating such strips of insulating material into a rail joint of proper construction. The said insulating strips are formed with flat parallel sides with a thickened edge which prevents the strips from being forced out of the joint.

In the drawings which illustrate my invention, Figure 1 is a cross-sectional view of an insulated rail joint embodying my invention. Fig. 2 is a cross-sectional view of a strip of insulation, drawn to an enlarged scale, showing the method of its construction. Fig. 3 is a side view of an insulated joint, drawn to a reduced scale, indicating the way in which the joint is applied to the track rails of a railway.

In the drawings 1 and 2 are two contiguous track rails that are connected by the insulated joint.

3 and 4 are the steel splice bars that hold the track rails joined and in proper alinement.

5 and 6 are strips of insulating material separating the splice bars 3 and 4 from the heads of the rails 1 and 2, while 7 and 8 are similar strips of insulating material separating the said splice bars 3 and 4 from the flanges of the said rails 1 and 2. These strips of insulating material may be continuous from end to end of the joints, as shown, or may be divided at the center, making eight strips instead of four. It is the form and construction of these strips 5, 6, 7 and 8 that constitute the essential features of my invention.

9, 10, 11, 12, 13 and 14 are six bolts by means of which the splice bars 3 and 4 are secured in place. The construction surrounding each of these bolts is clearly shown in Fig. 1, in which 15 and 16 are short tubes or sleeves of insulating material surrounding the bolt 10, and 17 and 18 are washers of similar insulating material. In contact with these insulating washers 17 and 18 are the steel washers 19 and 20 which serve to protect the said insulating washers 17 and 18. The bolt 10 is held in place and the whole structure securely clamped by the nut 21. It is to be understood that the structure just described in connection with the bolt 10 is repeated for each of the bolts 9, 11, 12, 13 and 14. The contiguous ends of the rails 1 and 2 are separated by a piece of insulating material 22 (see Fig. 3) commonly called the end post.

Referring now to Fig. 2, the construction of the insulating strips 5, 6, 7 and 8 is more fully shown. A strip of insulation 23 is built up of superimposed layers of canvas or similar fabric and thoroughly saturated with bakelite or similar insulating substance. This strip 23 is of one half the thickness and approximately double the width required for the finished insulation. At the center of the strip 23 is placed a narrow piece 24 of canvas, cordage or other absorbent material which is also thoroughly saturated with the insulating substance, and the strip 23 is then folded on itself so that a strip is formed having a thickness of double the original thickness throughout the greater portion of the strip and an increased thickness along one edge due to the insertion of the part 24. This folded strip is then placed in a suitable mold and subjected to the combined action of heat and pressure. This process converts the whole piece into a hard compact mass of uniform structure, of great strength and high insulation resistance. The finished strip is of uniform thickness except near the edge 25 where the thickness is considerably greater. The form of the mold is such that the finished insulation will conform to the shape of the rails and splice bars with which the insulation is to be used. It is this thickened inner edge that prevents improper displacement

of the insulation when the joint is in service.

With my improved insulation it is unnecessary to make any modification of the usual form of splice bars and other parts of the joint, as these improved insulating strips can be used in place of the ordinary vulcanized fiber or bakelized canvas heretofore used. In those cases where the space between the splice bar and the web of the rail is not sufficient to accommodate the thickened edge, it is necessary only to increase the thickness of the main portion of the insulation so as to prevent the splice bars from being drawn too close to the web of the rail.

I do not desire to limit myself to the exact construction and arrangement of parts here shown, but aim in the appended claims to cover all modifications that are within the scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is—

1. In an insulated rail joint, an insulating strip formed of fabric folded upon itself and means for increasing the thickness of the strip adjacent the fold in the said fabric.

2. In an insulated rail joint, a folded strip of insulating material and a second strip of material inclosed in the said folded strip.

3. In an insulated rail joint, a folded strip of insulating material and a second strip of material inclosed in the said folded strip, the whole being formed into a compact mass by the combined action of heat and pressure.

4. The process of producing a strip of insulating material consisting of folding a flexible strip of insulating material about a second strip of material and forming the whole into a compact mass by pressure within a heated mold.

5. In an insulated rail joint, a strip of insulating material formed of layers of fabric impregnated with insulating compound, the number of layers of fabric in the edge portion of the said strip being greater than the number of layers in the main portion.

In witness whereof I have set my hand this 14th day of January 1916.

FRED B. COREY.

Witnesses:
SIMON F. LOEB,
D. ATWELL.