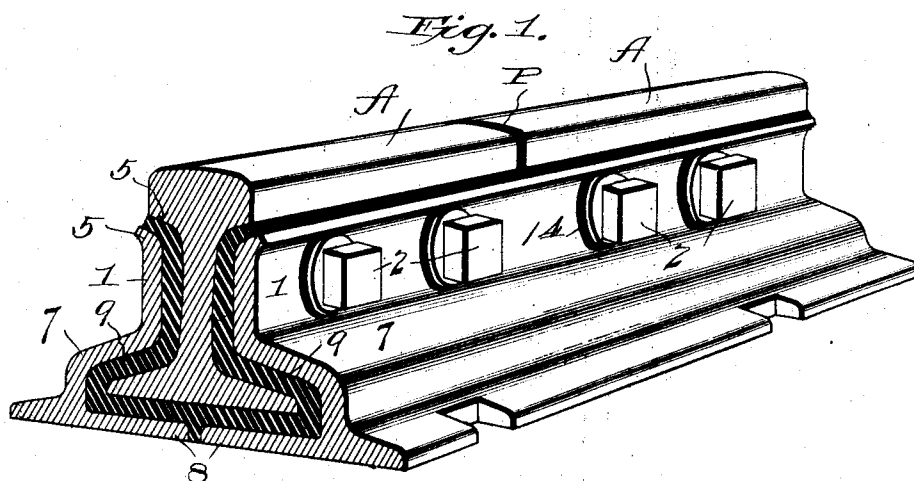
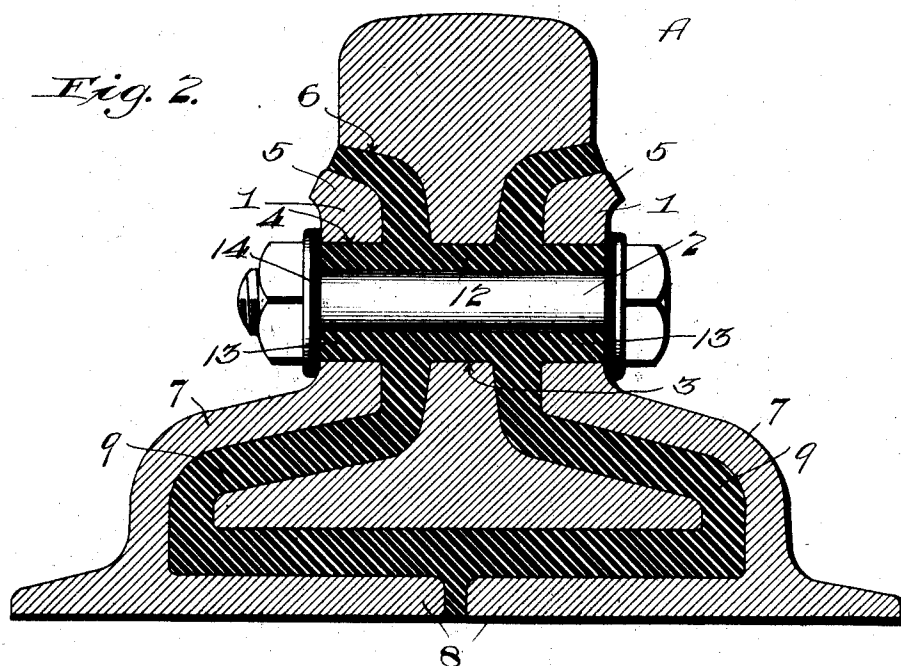


No. 878,588.

PATENTED FEB. 11, 1908.

B. WOLHAUPTER.
INSULATED RAIL JOINT.
APPLICATION FILED JULY 27, 1906.

2 SHEETS—SHEET 1.



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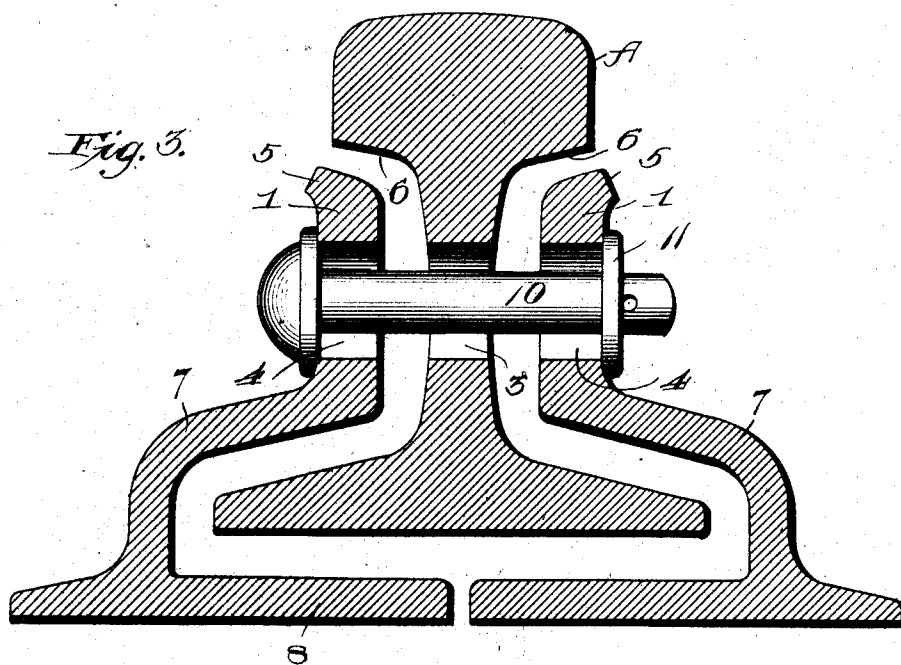
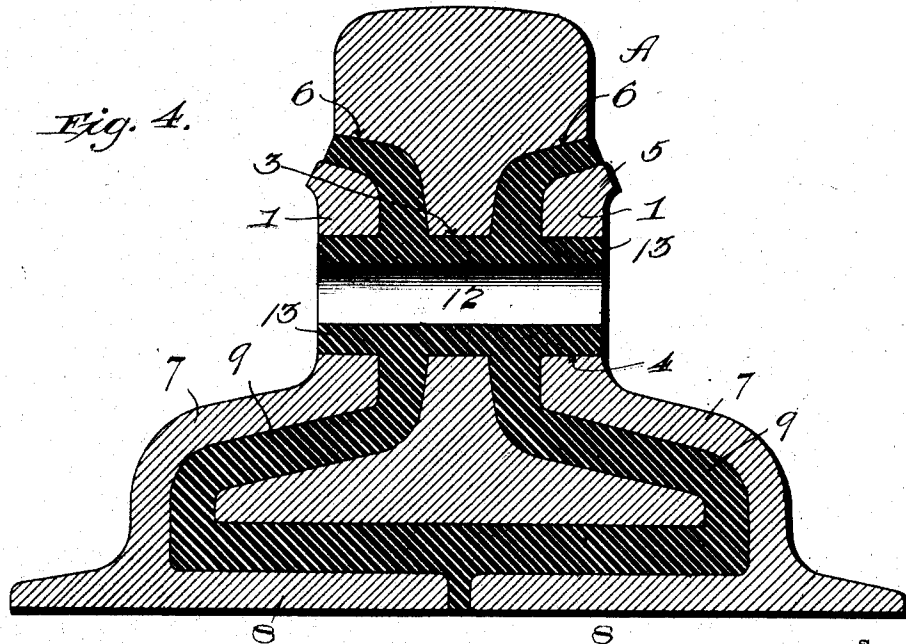
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UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW YORK, N. Y., ASSIGNOR TO THE RAIL JOINT COMPANY,
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INSULATED RAIL-JOINT.

No. 878,588.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed July 27, 1906. Serial No. 328,062.

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

This invention relates to the general subject of rail joints, and more particularly to that type of rail joints technically termed insulated joints and performing the usual functions of joints of that character. To this end the invention has in view an improved type of insulated rail joint involving a novel and practical method or process of manufacture which not only greatly facilitates the application of the joints to rails but also reduces the cost of making. Also the invention contemplates a means of placing insulated material about the rail ends and between the latter and the rail joint members whereby a perfect insulation is secured throughout the entire extent of the joint and about the bolts thereof. With this and many other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described and illustrated in the claims.

The essential feature of the invention involved in the idea of molding insulating material in a plastic state about the rail ends and within the spaces between the same and the rail joint members, is necessarily susceptible to a very wide range of modification both as to the process or method for carrying into effect the molding operation and also as to the structural features of the joint members according to the particular type of rail joint with which the invention may be associated. However, for purposes of illustration, one practical embodiment of the invention is suggested in the accompanying drawings in which,

Figure 1 is a sectional perspective view of a rail joint preserving the general characteristics of the well-known insulated "continuous" type of joint, and embodying the present invention. Fig. 2 is a cross-sectional view of the same type of joint insulated by the improved method of insulation; the line of section being through the vertical plane of one of the joint bolts. Fig. 3 is a cross-

sectional view in the same plane as Fig. 2 and showing the parts of the rail joint set up as a mold, preliminary to carrying out the molding operation of shaping the plastic molding material about the rail ends. Fig. 4 is a view similar to Fig. 3 with the plastic material molded into the spaces to be insulated, illustrating the bolt-hole cores removed.

In carrying out the invention it is not essential to employ any special type or construction of rail joint proper as the distinctive and distinguishing feature claimed herein is that of molding suitable insulating material in a plastic state directly about rail ends and within any suitable or approved rail joint members, whereby such insulation will completely fill up all spaces and interstices between opposing metallic surfaces, thus insuring a continuous, complete and thorough insulation throughout the entire joint. Hence, for illustrative purposes there is shown in the drawings, an insulated rail joint preserving in the main the essential characteristics of that type of rail joint known to railway engineers as the "continuous" joint. This joint includes in its general organization the rail ends A—A, the opposite side angle plates 1—1, and the joint bolts 2, connecting said plates and passing through the bolt-holes 3 and 4, respectively in the web of the rails and in the said side angle plates.

In the form of rail joint referred to, each of the side angle plates 1, is provided at the upper edge of its upright portion with a flange bearing head 5, arranged opposite the under bearing face 6, of the rail head, and at the lower edge of said upright portion of each said angle plate the latter is provided with a foot flange 7, lying over the base flange of the rail, and with a base flange extension 8, projected from said foot flange 7, and lying in a substantially horizontal position beneath the rail base. Said angle plates 1, having elements of substantially the form, relation and position above-described, when set off from the sides of the rail ends provide what may be termed a well-defined mold casing having its molding space extending about the rail sides and bottom, and lying between all opposing metallic surfaces of the side plates and the rail. In this connection it is to be observed that the invention is preferably carried out by forming the bolt holes

3 and 4 sufficiently larger than the bolts, 2, to provide spaces within such holes forming a part of the main molding space or spaces receiving the insulating material, 9, which is flowed into said space or spaces from any convenient point.

The molded insulating material 9, may consist of any non-conducting, plastic material or composition such as fiber or rubber compositions capable of being reduced to a plastic condition, and then handled in the way contemplated by the present invention, that is, flowed into a circuitous or irregular molding space or spaces, and afterwards becoming set or hardened in such a manner as to provide for the perfect insulation of the opposing metallic faces.

While the manner of carrying out the invention, as stated, is necessarily susceptible to a variety of modifications, a practical method of carrying the same into effect is illustrated in Figs. 3 and 4 of the drawings. Referring particularly to these figures of the drawings, it will be observed that the first step in the process of making the joint is shown in Fig. 3 and consists in setting up the rail joint members, 1—1, in any suitable way, about the adjoining rail-ends so as to leave a well-defined intervening space between said members and the sides and bottom of the rail, which space may be properly characterized as a molding space for the reception of the insulating material 9, in a plastic state. The rail ends and the opposite joint members may be blocked or jacked up by means of any suitable blocking or supports to hold them in a relative position to form the mold shown in Fig. 3 of the drawings, while the ends of the molding spaces at the ends of the joint members or bars may be temporarily closed by molder's sand or equivalent closures until the insulating material has hardened sufficiently to retain its position. Also in order to make proper provision for the insulation of the bolts 2 in the bolt-holes 3 and 4, temporary bolt-hole cores 10 are arranged through the aligned bolt-holes 3 and 4 and supported on the side plates 1, through the medium of any suitable holding means 11. The said temporary cores are held in centered positions so that when, in the next step of the process, the insulating material in a plastic state is flowed inside of the joint such material will find and fill all spaces and will also flow about the cores 10, into the bolt-holes 3 and 4, with the result of forming an integral insulating bolt sleeve 12, within the bolt-hole 3, in the rail web, and integral insu-

lating bolt thimbles 13, within the bolt-holes 4 of the side plates. After the insulating material has set sufficiently, the temporary cores 10 are replaced by the joint bolts 2, which may be supplied at their ends with insulating washers 14, serving to insulate the heads and nuts of the bolts from the outer sides of the angle plates.

The ordinary insulating end posts, P, between the rail ends may or may not be used in connection with the main molded insulating body 9.

I claim:

1. A process of making insulated rail joints which consists first in setting up in spaced relation the rails and rail joint members to form thereby a mold having a molding space between said rails and members, and then casting plastic insulating material in said molding space to form an integrated body of insulation therein.

2. A process of making insulated rail joints, which consist first in setting up the rails and rail joint members in spaced relation to form thereby a mold having communicating molding spaces, then temporarily centering bolt hole cores through the bolt holes in the rail webs and joint members, then casting plastic insulating material in said molding spaces to form an integrated body of insulation therein, and finally removing said cores.

3. An insulated rail joint having an insulation consisting of an integrated molded body of insulating material cast between the rails and joint members.

4. In an insulated rail joint, the combination with the rails and joint members, of a continuous integral molded body of insulating material cast on and between said rails and joint members.

5. In an insulated rail joint, the combination with the rail joint members, of a molded integral body of insulating material entirely enveloping the sides and bottoms of the rail ends between the opposing faces of the latter and the joint members.

6. In an insulated rail joint, the combination with the rails and joint members, of an integral molded body of insulating material filling the spaces between the rails and joint plates and also lining the bolt holes therein.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:

E. F. SCHERMERHORN,
ANNA M. COYNER.