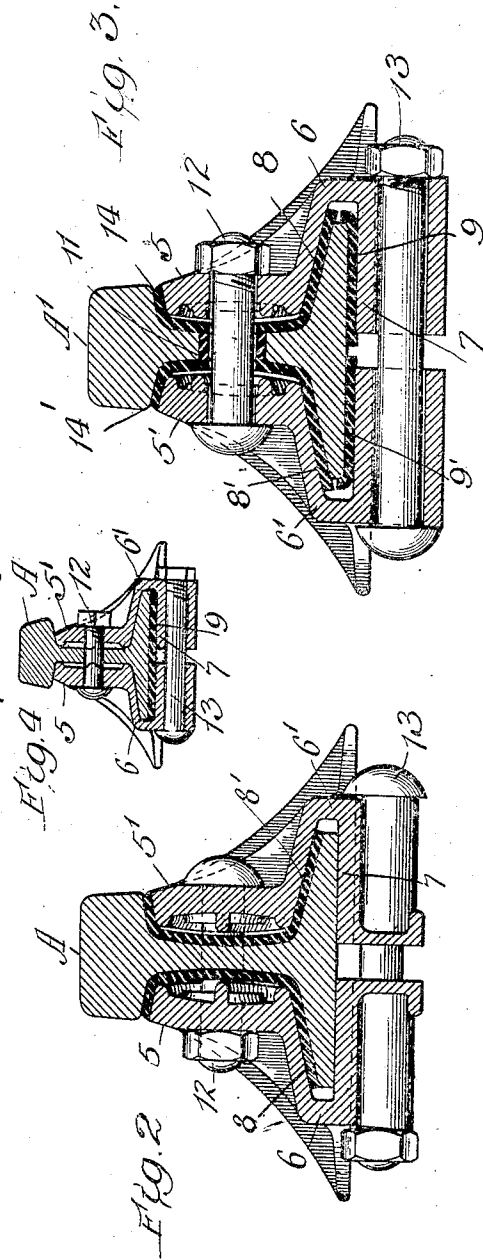
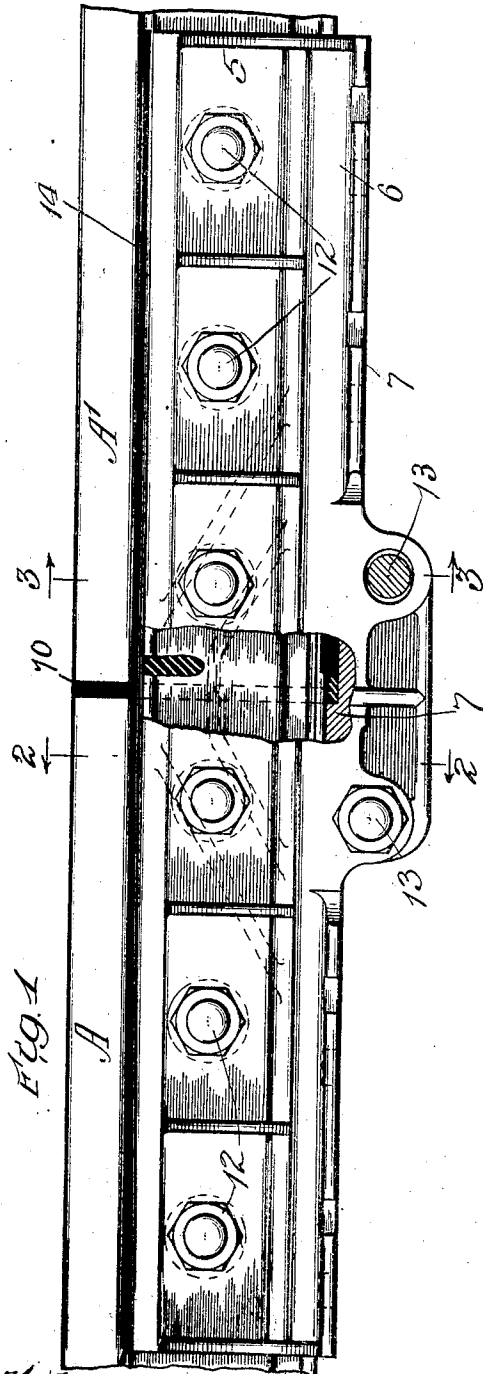


J. G. McMICHAEL.
RAIL JOINT.
APPLICATION FILED JUNE 18, 1906.

932,053.

Patented Aug. 24, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES G. McMICHAEL, OF CHICAGO, ILLINOIS

RAIL-JOINT.

932,053.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed June 18, 1906. Serial No. 322,211.

To all whom it may concern:

Be it known that I, JAMES G. McMICHAEL, 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, and has especial reference to that class of devices known in the art as insulated rail joints.

One of the objects of my invention is to provide a rail joint, of the character referred to, by means of which one of the rail ends of two contiguous rails, preferably the leaving end, may be completely insulated from the other, and the provision of a metallic bearing for the other rail end, preferably the approaching end, the construction being such as to avoid the usual off-set in both the side and base members, or sections, of the joint, to provide space for the insulating material.

The difficulties encountered, heretofore, in the effort to insulate one rail end only, by providing an off-set in the base and side sections, to accommodate the insulating material, or to compensate for the insulating material on the insulated side of the joint by the substitution of additional metallic plates of approximately equal thickness of that of the insulating plate, on the uninsulated side, have been due to the fact that, in such structures, the side sections are unyieldingly clamped to the uninsulated rail end, and through the medium of the more or less elastic insulating material, they are yieldingly clamped to the insulated rail end, the inequality of the clamping, thus effected, rendering it difficult to maintain a tight rail joint. In my improved joint the approaching rail end, the end which the train approaches, which is the end that receives the heavy impact of the moving vehicle or train, is provided with metallic base or side-supporting surfaces, upon which the rail rests; the leaving rail end, being subject to less severe effect, is entirely surrounded with an insulating medium.

Another object of my invention is to so shape the protruding edges of the insulating material, or plates, that they will shed the water, which would otherwise become insinuated between the said insulating material and the surface of the rail.

In the drawings: Figure 1 is a side elevation, partly broken away, showing two con-

tinuous rail ends with my improved insulating joint applied thereto. Fig. 2 is a cross section taken on line 2—2 of Fig. 1. Fig. 3 is a cross section, taken on line 3—3 of Fig. 1. Fig. 4 is a modification, showing a view similar to Fig. 2.

In all of the views the same letters and numerals of reference refer to similar parts.

A and A' are the two contiguous abutting rail ends, held in proper alinement by means of the side clamping sections 5, and 5'. The base plates 6 and 6' are structurally continuations of the respective side sections. The base plates, of the joint, as shown, underlie the rail bases. An off-set, as at 7, is shown in Fig. 1 and Fig. 2, in the base plate, by means of which the rail end A is provided with a metallic bearing surface. An insulating plate of corresponding thickness, being inserted under rail end A'. The insulating plates 8 and 8' extend the full length of the respective sections, and as shown in Figs. 2 and 3, are of uniform cross section, and interfit between the surfaces of the rail and the respective side-clamping sections.

In the modification shown in Fig. 4 the off-set is in the side sections and the rail end rests directly upon the insulated plates, 9—9, and upon the metallic sides of the sections 5, 5'. The insulating plates 9 and 9' underlie the rail end A' only, except as in Fig. 4, and they are of a thickness substantially equal to the off-set 7.

10 is a plate of insulating material intervening between the rail ends to prevent metallic contact thereof.

The usual insulation of the bolts is provided in the bushings 11.

The bolts 12 and 13 are employed for clamping the respective sections to the rail ends, as usual in such structures.

The insulating plates 8 and 8' are chamfered on their protruding edges as at 14, 14' for the purpose of shedding the water and preventing its entrance between the surfaces of the insulating plates and the associated rail ends.

An insulated joint provided with the means of insulation, which I employ, possesses all of the durability of an uninsulated joint, in practical operation, and at the same time is sufficient to insulate the adjacent ends of the rails to which it may be applied.

Having thus described my invention, what

I claim and desire to secure by Letters Patent, of the United States, is:

In a rail joint, adjoining rail ends, an interposed insulating medium therebetween, 5 strips of insulating material on opposite sides of said rails extending substantially the full length of the joint, said strips underlying the heads of the rails, covering the sides thereof and overlying their bases, a 10 strip of insulating material underlying the base of one rail end only, a metallic joint structure comprising rail base-supporting means shaped to receive one rail end in direct metallic contact therewith and to sup-

port the insulating strip underlying the 15 other rail end; metallic fish plate structures, bearing on the insulation overlying the rail base and supporting the insulation underlying the rail head and bolts, insulated from the rail end which has the insulated base 20 support, connecting the fish plates through the rail.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

JAMES G. McMICHAEL.

In the presence of—

GEO. T. MAY, Jr.,
MARY F. ALLEN.