

UNITED STATES PATENT OFFICE.

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INSULATED RAIL-JOINT.

1,154,738.

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To all whom it may concern:

Be it known that I, CHARLES E. STEVENS, a citizen of the United States, residing at Lenexa, in the county of Johnson and State of Kansas, have invented certain new and useful Improvements in Insulated Rail-Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to an insulated rail joint, and has for its principal object to provide means for insulating abutting rails to limit a track circuit to a predetermined block.

It is also an object of the invention to provide an insulated joint of this character with means for retaining the ends of rails in spaced relation to prevent wearing of the insulation between the separate alining rails and resultant conduction therebetween.

In accomplishing this object I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of abutting rails connected with an insulated joint and containing my improvements. Fig. II is a plan view of the same, with the balls of the rails removed to better illustrate the joint. Fig. III is a detail perspective of one of the joint chairs with its insulating spacer. Fig. IV is a bottom plan view of the joint. Fig. V is a detail perspective of one of the side insulation spacers. Fig. VI is a detail perspective view of the parting post. Fig. VII is a vertical section of the joint on the line VII—VII, Fig. II. Fig. VIII is a perspective view of the insulation members.

Referring more in detail to the parts: 1 and 2 designate alining rails of a railway track, each of which comprises the ordinary base 3, web 4 and ball 5. The ends of the alining rails are seated in chair members 6 of a rail joint, each of which chair members comprises a fish plate section 7 and base 8, which latter is adapted for extension beneath the end of one of the rails only, in order that current may not be conducted therethrough to the other rail. The fish plate section of each of the joint members comprises a non-insulated member 9 which

lies close against the web of the rail, between the base and ball, and an insulated member 11 which flares outwardly from the part 9.

The flared portion 11 of the fish plate is preferably parallel with the web of the rail on its outer surface, but beveled on its inner surface to provide the taper, and located between the said tapered face and the web of the rail is a wedge 14 which may be of any suitable material, and is insulated from the fish plate by a sheet 12 of fiber or the like, having an outturned lower edge lip 15 adapted for underlying the base angle of the joint and separating the same from the base of the rail, and provided with an inturned end lip 16 that covers the end of the web to separate the same from the shoulder 17 at the flare of the fish plate.

The fish plate, web rail and web members are provided with apertures for receiving the track bolts 18, each of which is insulated from one of the joint members by washers 19, whereby the rails are secured to the joint.

In order to insulate the ends of the rails I provide a parting post 20, of fiber, or other non-conductive material, having the same shape as the cross section of the rail, and which is adapted to insulate the same to prevent current passing from one rail to the other; the lips 16 of the side insulating sheets being projected into contact with the parting post to complete the insulation between the rail and the joint members.

In using the apparatus, presuming the parts to be constructed as described, when the ends of alining rails are placed in position, they are separated by one of the insulating parting posts, and the joint chairs are applied thereto, so that the apertures in the fish plate portions of the joints register with the bolt apertures in the rail webs. The insulating sheets 12 are located within the joint members, with their end lips projecting toward the parting strip and the wedges are driven to place. The parts are then bolted together and the rails held firmly to the joint, and the joint members held rigid to retain the insulating members in their proper relation.

It is apparent that with this construction current cannot pass from one rail to the other, or between the members of the joint, so that each signal block may be operated independently of the next. It is also apparent

that by providing the wedges creeping of the rails toward each other is obviated, as in order for the rails to approach each other it will be necessary for the wedge to be forced inwardly between the rail web and fish plate, so that by providing the anti-creeping wedges, rubbing and wearing of the parting post is prevented to insure complete and permanent insulation of the rails.

10 Having thus described my invention, what I claim as new therein, and desire to secure by Letters-Patent, is:—

Claims:

1. In an insulated rail joint, the combination with meeting rails, of joint members having individual chairs for the separate rails, fish plates on the separate chairs, having portions extending in opposite directions along the separate spaced rails, insulated wedge blocks located between the extensions and rails, and insulated bolts, each attaching the fish plate of one joint member and the extension of the other joint member and interposed wedge blocks to a rail.

2. In an insulated rail joint, the combination with meeting rails, of joint members each comprising a fish plate having a portion lying against one of the rails and spaced from the other rail, wedge blocks located between the spaced portion of each fish plate and the adjacent rail, insulating sheets located between the flared fish plate portions and the wedge blocks, an insulating parting post between the ends of the rails, and insulated means for securing the fish plates and wedge blocks to the rails.

3. In an insulated rail joint, the combination with meeting rails, of joint members each having a chair located beneath one of the rails and spaced from a like chair on the other joint member, and having a fish plate integral with the chair and comprising an extension having a flared inner surface spaced from the web of the meeting rail,

wedge blocks located between the spaced fish plate members and the rail webs, insulating sheets located between the wedges and fish plate members, and insulated bolts holding the fish plates to the rails.

4. In an insulated rail joint, the combination with meeting rails, of joint members each having an integral chair projected beneath one of the rails and spaced from a like chair on the mating joint member, a fish plate integral with each chair comprising a portion adapted for contact with a rail supported on the integral chair and an inclined portion set out from the contacting part to form a shoulder and having a flared inner face, wedge blocks located between the flared fish plate members and the rails, insulation sheets located between the wedge blocks and flared fish plate members, bolts clamping opposite fish plates and blocks to the rails, and means insulating each of the bolts from one of the fish plates.

5. In an insulated rail joint, the combination with meeting rails, of joint members, each having a chair projected beneath one of the rails and having an extension from one edge, with the chair and extension spaced from the opposite rail and from like parts on the mating joint members, a fish plate on each chair having a body part and an extension outset from the body part, and having a flared inner face lying along the opposite rail, insulated wedge blocks located between the fish plate extension and the adjacent rails, and insulated bolts extending through the body member of one fish plate, the wedge block, the rail and the extension of the opposite fish plate.

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

CHARLES E. STEVENS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."