

No. 712,132.

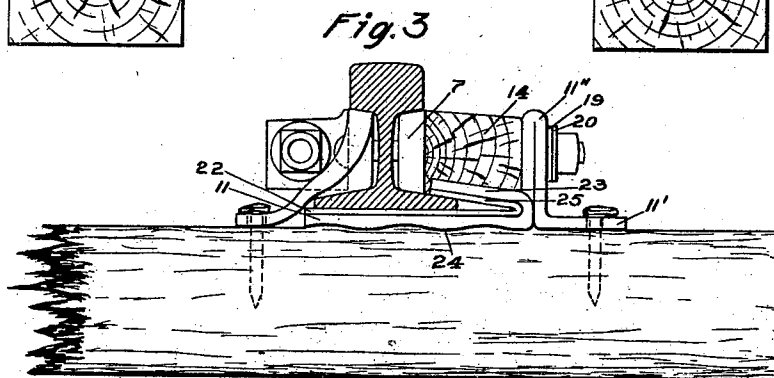
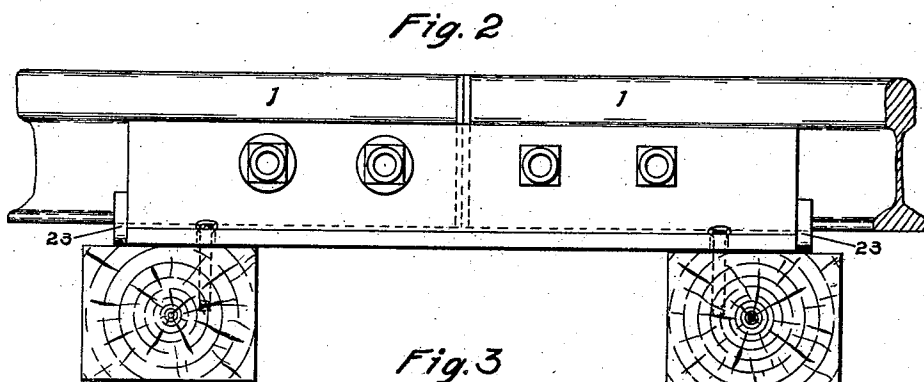
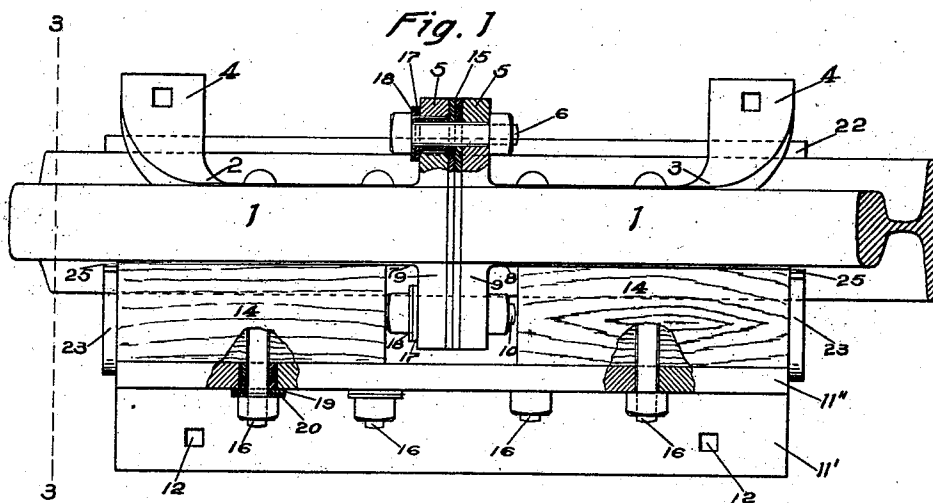
Patented Oct. 28, 1902.

G. L. HALL.
INSULATED RAIL JOINT.

(Application filed Feb. 12, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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Geo. L. Hall INVENTOR

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Fig. 4

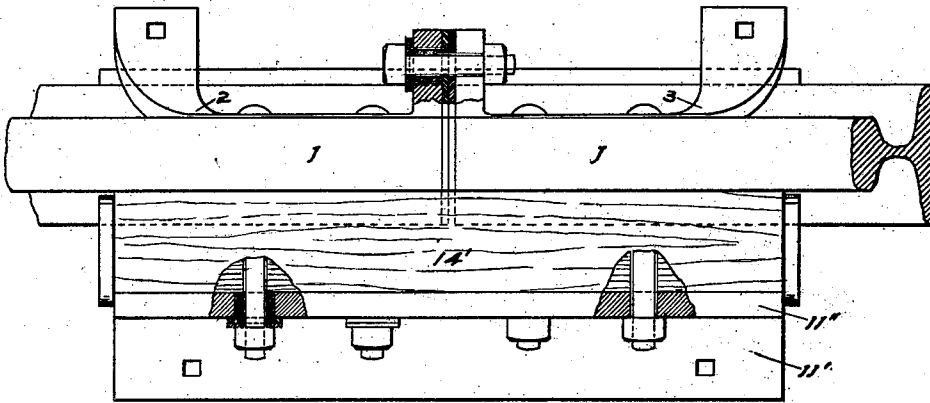


Fig. 5

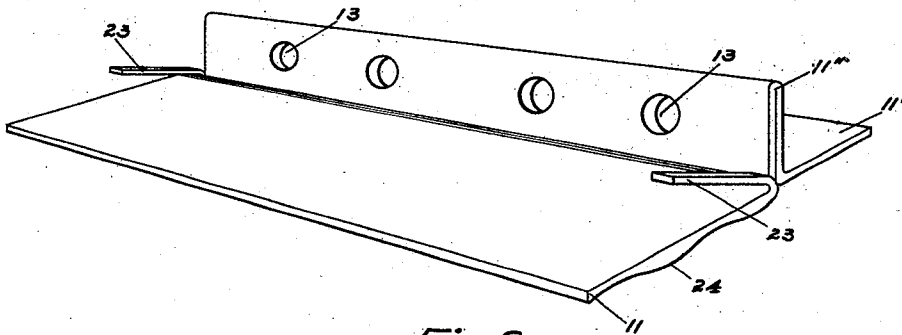
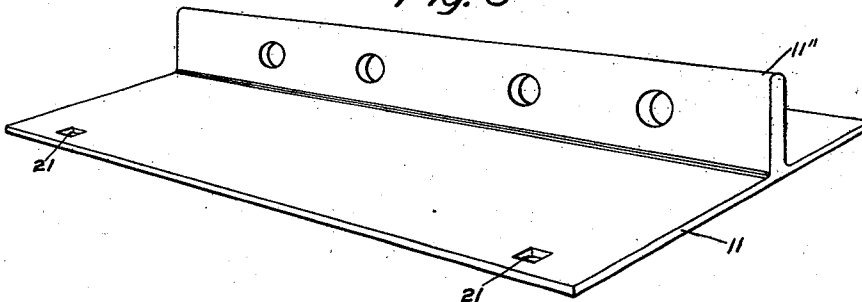


Fig. 6



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UNITED STATES PATENT OFFICE.

GEORGE L. HALL, OF BROOKLYN, NEW YORK.

INSULATED RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 712,132, dated October 28, 1902.

Application filed February 12, 1902. Serial No. 93,677. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. HALL, a citizen of the United States of America, residing in the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to joints between adjacent rails of a railway; and its objects are to provide a strong union for the rail ends and cheap means of insulating them from each other.

In some cases it may be found that the rail-joint described in my application for Letters Patent filed January 18, 1902, Serial No. 90,233, Series of 1900, is not adapted to the situation and that the joint should be provided with an angle-chair.

To these ends my invention consists of a two-part fish-plate, in combination with an angle-chair, of means of insulating the two parts of the fish-plate from each other and of the angle-chair from one of the rail ends.

I hereinafter describe a rail-joint embodying the features of my improvements and then point out the novel features in the claims, having reference to the accompanying drawings, in which similar figures of reference indicate similar parts throughout the various views, of which—

Figure 1 is a plan view, partly in section, of a rail-joint embodying my invention. Fig. 2 is a side elevation. Fig. 3 is an end view, partly in section, on the line 3 3 of Fig. 1. Fig. 4 is a plan view of a modified form of the joint. Fig. 5 is a perspective view of the angle-chair. Fig. 6 is a perspective view of a modified form of the angle-chair.

1 1 are ends of two railway-rails to be joined.

2 and 3 are respectively parts of a fish-plate. Each of said parts 2 and 3 is provided with one or more lugs 4 offsetting from the same. These lugs may be so arranged as to be spiked to ties or so as to be run into the earth, or some of them may be arranged to be spiked to ties and others to be run into the earth. Said parts 2 and 3 of said fish-plate are also provided with offsetting lugs 5, adapted to be united by one or more bolts, rivets, or other joining devices 6. 7 and 8 are re-

spectively parts of another fish-plate. Each of said parts 7 and 8 is provided with offsetting lugs 9, adapted to be united by one or more bolts, rivets, or other joining devices 10. Of course it will be understood that lugs 4 may in some cases be omitted from the parts 2 and 3 of the other fish-plate.

11, 11', and 11'' designate the several parts of an angle-chair, 11' being the part resting upon the ties and adapted to be spiked thereto through holes 12, 11'' being the upright part and provided with bolt-holes 13, and 11 being the supporting part of the chair. Said upright part 11'' is formed of a fold or extra thickness of the metal, so that it is substantially double the thickness of the parts 11 and 11'. In this way the chair, and thereby the joint, is greatly strengthened.

14 represents pieces of packing and insulating material, such as wood, between the upright part 11'' of the angle-chair and the corresponding parts 7 and 8 of the two-part fish-plate on that side of the rail ends, said packing material being of sufficient thickness to prevent any electrical connection between the part 11'' of the angle-chair and the lugs 9 of the two-part fish-plate.

15 represents insulating material, preferably vegetable fiber, between lugs 5 5 of the parts 2 and 3 of one fish-plate and lugs 9 9 of the parts 7 and 8 of the other fish-plate, and extending between the rail ends 11, though said insulation may be omitted between the rail ends if they are properly separated by air-space.

16 represents bolts passing through the upright part 11'' of the angle-chair, the packing 14, the respective parts 7 and 8 of one fish-plate, the rail ends 1, and the respective parts 2 and 3 of the other fish-plate.

17 represents thimbles or bushings of insulating material adapted to prevent any electrical connection between the two parts of each fish-plate, and 18 represents washers protecting said bushings 17 from the wear of bolts 6 and 10.

19 represents thimbles or bushings of insulating material adapted to prevent any electrical connection between the rail ends 1 and the angle-chair through bolts 16, and 20 represents washers protecting said bushings 19 from the wear of bolts 16.

It will be readily understood that it is necessary only to insulate from the angle-chair one of the two rail ends, as shown in Fig. 1 of the drawings.

- 5 22 represents insulating material intermediate of the bottom of the rail ends and supporting part 11 of the angle-chair. A good method of holding said insulating material in place is shown in Fig. 3. Said insulating material is provided at each end with a lap 25, adapted to be folded upon the upper surface of bottom flange of the rail ends, and the angle-chair is provided with lugs 23, adapted to pinch said laps to the rail ends, as shown in Fig. 3; but of course I do not limit myself to this method of holding said insulating material 22 in place. The angle-chair may be provided with a corrugated under surface, as shown at 24 in Figs. 3 and 4.
- 20 In Fig. 4 is shown a modified form of the joint. It is in all respects similar to the joint above described, except that the two-part fish-plate 7 8 is omitted and the packing and insulating material 14' is made of one piece and extends across the joining-point of the rail ends 1 1.

What I claim, and desire to secure by Letters Patent, is—

1. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the same side of the rail ends as the upright portion of the angle-chair, means of structurally uniting and electrically insulating the two parts of said fish-plate; a two-part fish-plate on the opposite side of said rail ends, means of structurally uniting and electrically insulating the same; insulating-blocks intermediate the upright portion of the angle-chair and each of the parts of said first-mentioned fish-plate; a plurality of bolts passing through the upright portion of the angle-chair, insulating-blocks, rail ends, and fish-plates; insulating-bushings between the angle-chair and those of said bolts which pass through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they rest, and means of maintaining the rail ends from contact with each other.

2. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the same side of the rail ends as the upright portion of the angle-chair, means of structurally uniting and electrically insulating the two parts of said fish-plate; a two-part fish-plate on the opposite side of said rail ends, each of the parts of said last-mentioned fish-plate being provided with an offsetting lug or lugs adapted to be spiked to a tie or otherwise held in place, means of structurally uniting and electrically insulating the same; insulating-blocks intermediate the upright portion of the angle-chair and each of the parts of said first-mentioned fish-plate; a plurality of bolts passing through the upright portion of the angle-chair, insulating-blocks, rail ends, and fish-plates; insulating-bushings between the angle-chair and those of said bolts which pass

through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they rest, and means of maintaining the rail ends from contact with each other.

3. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the same side of the rail ends as the upright portion of the angle-chair, means of structurally uniting and electrically insulating the two parts of said fish-plate; a two-part fish-plate on the opposite side of said rail ends, each of the parts of said last-mentioned fish-plate being provided with an offsetting lug or lugs adapted to be spiked to a tie or otherwise held in place, means of structurally uniting and electrically insulating the same; insulating-blocks intermediate the upright portion of the angle-chair and each of the parts of said first-mentioned fish-plate; a plurality of bolts passing through the upright portion of the angle-chair, insulating-blocks, rail ends, and fish-plates; insulating-bushings between the angle-chair and those of said bolts which pass through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they rest, means of holding in place said last-mentioned insulating material, and means of maintaining the rail ends from contact with each other.

4. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the opposite side of the rail ends from the upright portion of said angle-chair, means of structurally uniting and electrically insulating the same, an insulating-block intermediate the upright portion of the angle-chair and the rail ends and extending across the joint, a plurality of bolts passing through the upright portion of the angle-chair, insulating-block, rail ends, and fish-plate, insulating-bushings between the angle-chair and those of said bolts which pass through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they rest, and means of maintaining the rail ends from contact with each other.

5. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the opposite side of the rail ends from the upright portion of said angle-chair each of the parts of said fish-plate being provided with an offsetting lug or lugs adapted to be spiked to a tie or otherwise held in place, means of structurally uniting and electrically insulating the same, an insulating-block intermediate the upright portion of the angle-chair and rail ends and extending across the joint, a plurality of bolts passing through the upright portion of the angle-chair, insulating-block, rail ends, and fish-plate, insulating-bushings between the angle-chair and those of said bolts which pass through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they rest, and means of maintaining the rail ends from contact with each other.

6. An insulated rail-joint comprising an angle-chair, a two-part fish-plate on the opposite side of the rail ends from the upright portion of said angle-chair each of the parts of
5 said fish-plate being provided with an offsetting lug or lugs adapted to be spiked to a tie or otherwise held in place, means of structurally uniting and electrically insulating the same, an insulating-block intermediate the
10 upright portion of the angle-chair and the rail ends and extending across the joint, a plurality of bolts passing through the upright portion of the angle-chair, insulating-block, rail ends, and fish-plate, insulating-bushings be-
15 tween the angle-chair and those of said bolts which pass through one of the rail ends, insulating material between the rail ends and the part of the angle-chair upon which they

rest, means of holding in place said last-mentioned insulating material, and means of maintaining the rail ends from contact with each other.

7. An angle-chair for rail-joints comprising a two-part base, an upright part intermediate the two parts of said base, said upright part
25 being formed of a fold of the metal substantially double the thickness of the base, and a lug offsetting from the base and adapted to pinch the insulating material upon the rail.

In witness whereof I have hereunto set my
30 hand this 11th day of February, 1902.

GEO. L. HALL.

In presence of—

H. V. N. PHILIP,

J. F. BOUDREAU.