

No. 711,256.

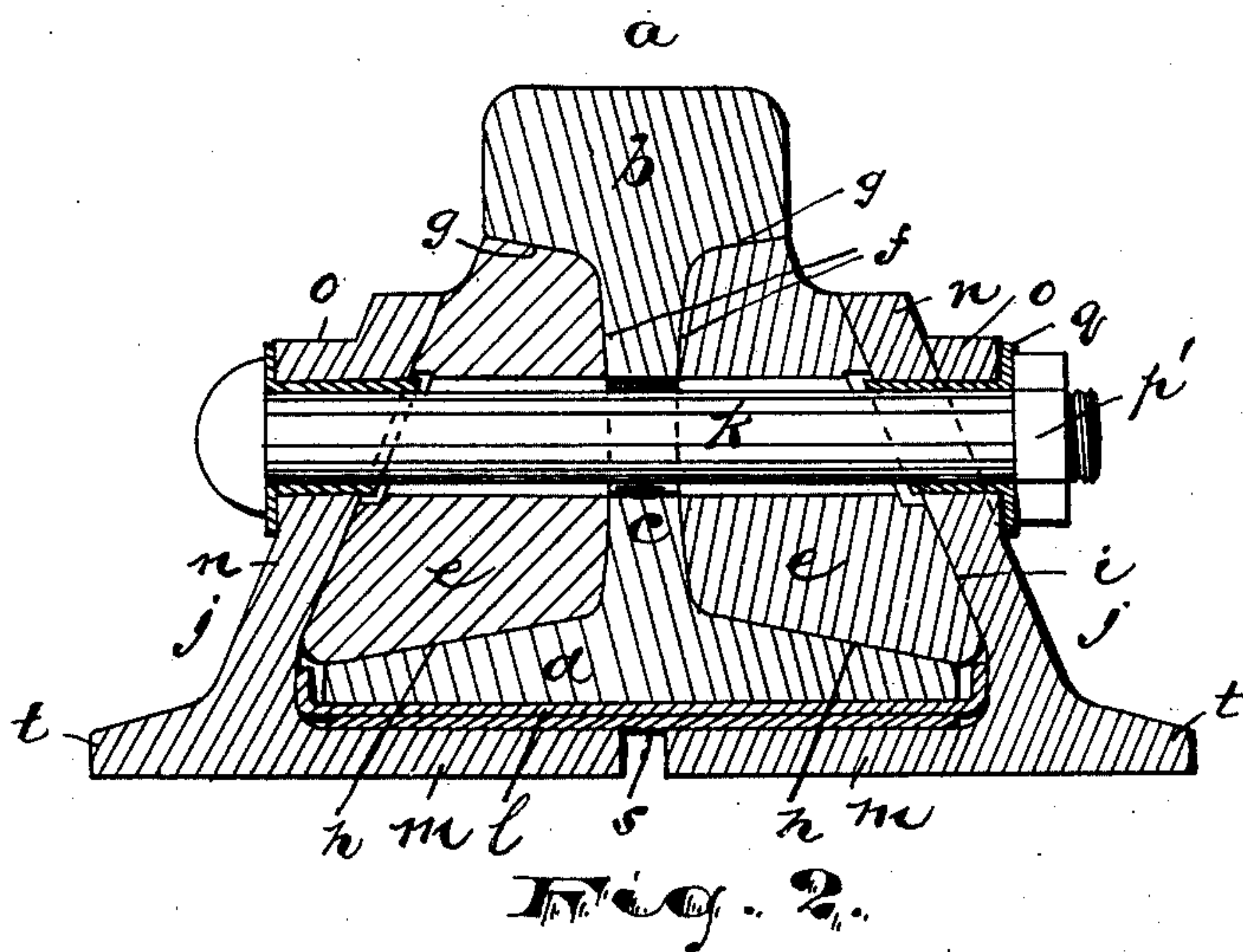
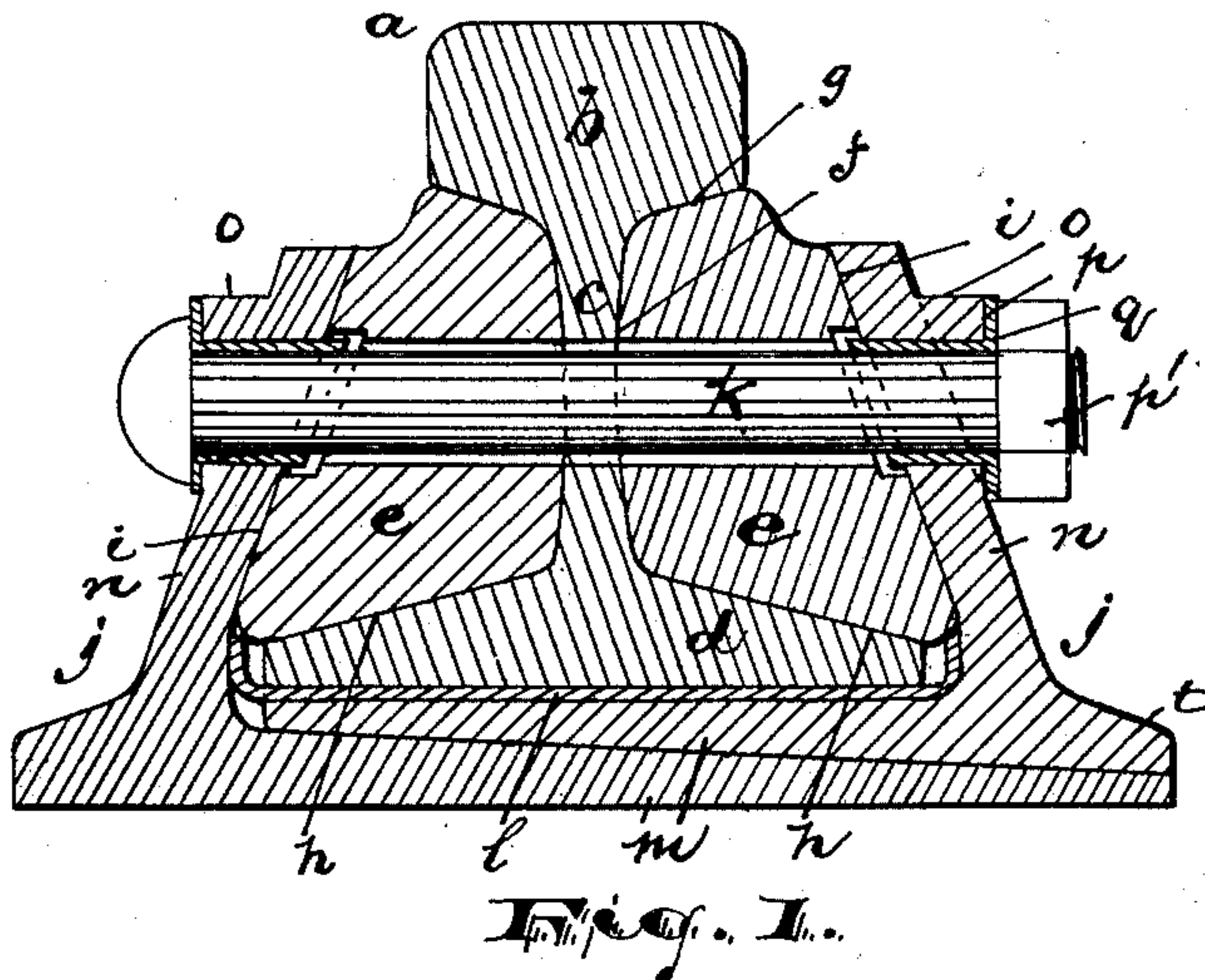
Patented Oct. 14, 1902.

S. P. McGOUGH.

INSULATED JOINT FOR TRACK CIRCUITS.

(Application filed Jan. 18, 1902.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL P. MCGOUGH, OF NEWARK, NEW JERSEY, ASSIGNOR TO CONTINUOUS RAIL JOINT COMPANY OF AMERICA, A CORPORATION OF NEW JERSEY.

INSULATED JOINT FOR TRACK-CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 711,256, dated October 14, 1902

Application filed January 13, 1902. Serial No. 89,537. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL P. MCGOUGH, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Insulated Joints for Track-Circuits; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to secure a more compact, durable, and efficient insulated railway-rail connection or joint and to secure other advantages and results some of which may be referred to hereinafter in connection with the description of the operative parts.

The invention consists in the improved electrically-insulated rail joint or connection and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the figures, Figure 1 is a transverse section of a rail and its electrically-insulated connections, showing a construction sometimes preferred; and Fig. 2 is a similar view showing a variety of constructions at other times preferred.

In said drawings, *a* indicates an ordinary railway-rail having the usual head *b*, with a tread-surface at the top, a web *c*, disposed vertically beneath said head and vertically in line with the central longitudinal axis of said head, and *d* is the flange, extending oppositely and horizontally from the lower extremity of said web.

e e are insulating blocks, billets, or bars of wood or other suitable insulating material formed to fit between the head and flange of the rail and against the opposite sides of the web thereof, said blocks, bars, or billets having at the tops and bottoms inclined surfaces

g g h h, the top surfaces being inclined to the bottom surfaces, so that the block or billet may be firmly wedged between said head and flange and bear firmly thereon when pressed toward the web. The outer sides of the blocks or billets *e*, opposite the sides *f* lying against or closely near to the web *c*, are inclined to the vertical plane of the web of the rail, the inclined surfaces *i* being more or less exactly in the lines extending from the lines formed by the outer sides and base of the rail-head to lines a little out from the outer edges of the rail-flange. The blocks or billets *e* being arranged in place, the same are forced into position by means of angle-plates *j j* and bolts *k*, a suitable sheet of insulating material being interposed between the base of the rail and the flanges in said angle-plates to prevent electrical contact. The said sheet *l* of insulating material is somewhat wider than the rail-flange, so as to turn up at the opposite edges and protect the same from edge contact.

The angle-plates *j* comprise heavy pieces of rolled metal having the said bottom flanges *m* extending horizontally beneath the rail and inclined flanges *n* extending upward and lying against the inclined outer sides of the blocks or billets *e*, the inclinations of the upwardly-extending flanges corresponding with the inclinations of the said billets, as indicated. At points between the upper and lower edges or parts of the inclined flanges *n* the said flanges are provided with bolt-perforations and bosses *o*, having vertical outer surfaces or seats *p* for the bolt-head and nut *p'* or for the washer *q*. Said bosses *o* may be integrally formed upon or otherwise attached to the said inclined flange. The washers *q* may be of insulating material and may be provided with sleeve-like extensions *r*, adapted to enter the bolt-perforations and prevent contact of the bolt with the angle-plates.

The rail *a* and blocks and billets *e e* are each provided with bolt-perforations corresponding with those in the angle-plates. When the bolts are arranged in place as shown and the nuts thereof are screwed up, the blocks or billets *e e* are not only forced into the recesses

between the head and flange of the rail, but because of the acute angles formed between the inclined flanges *n n* and base-flanges *m m* the flanges *m* are brought rigidly and closely up toward the base of the rail, so that the abutting ends of the rail-sections are firmly supported, and this support and rigidity is increased by the specific construction shown in Fig. 1, where the base-flanges *m* are made wide and wedge-shaped and overlap one over the other.

Where the base-flanges *m m* do not overlap, as in Fig. 2, I prefer to interpose a plate *s*, of sheet metal, between the insulation *l* and said flanges *m*, said plates covering or breaking the joint between the edges of the flanges *m* and protecting the said insulation from injury.

At the outside of the angles formed by the flanges *n m* are narrow flanges *t t*, serving to receive the spike-heads in fastening the angle-plates down upon the ties. Said flanges may be notched to receive the spikes in any suitable manner, the notches, being common, not being shown.

Having thus described the invention, what I claim as new is—

1. The improved insulated railway-rail connection, comprising rigid, rail-supporting bracing-billets of insulating material arranged at opposite sides between the heads and flanges of the rail-sections, and angle-plates having inclined flanges and horizontal base-flanges forming acute angles to receive the said billets and the rail-flanges, and bolts for drawing said parts together into connection with the said rail-sections, substantially as set forth.

2. The combination with the rail-sections, of rigid blocks or billets of insulating material arranged at opposite sides of said rail-sections and adapted to hold said sections in rigid alinement, said billets extending out from the recess between the head and flange and having, at top and bottom, bearing-surfaces for the head and flange of the rail, said surfaces being inclined one to the other and thus adapted to be wedged between said rail head and flange and having inclined outer sides, acute-angle plates, and bolts extending

through said blocks, rail-sections and angle-plates for drawing said parts together.

3. The combination with the rail, of rigid wooden blocks or billets having head and flange bearings at top and bottom inclined on to the other, and having inclined bearings at the outer sides, acute-angle plates one flange of each, of which bears against a block or billet and the other extends horizontally beneath the rail to bear upward and support said rail and present a horizontal bearing to engage the ties, an electrical sheet insulation interposed between the rail-flange and said flanges of the angle-plates and means for drawing said parts into rigid and firm relation.

4. The combination with the rail, of rigid bracing or supporting billets or blocks of insulation, acute-angle plates and bolts extending through said rail, blocks or billets and angle-plates for drawing said parts into rigid relation, substantially as set forth.

5. The combination with the rail of rigid insulating-blocks, acute-angle plates having flanges arranged at the outside of said blocks and extending underneath the rail and bolts, extending through blocks, rail and said outside flanges of the angle-plates, substantially as set forth.

6. The combination with the rail, of insulating-blocks, acute-angle plates having wedge-shaped overlapping horizontal flanges beneath the rail and bolts for drawing said parts into rigid relation.

7. The combination with the rail, of rigid insulating-blocks acute-angle plates having horizontal flanges extending beneath the rail and inclined flanges lying against said blocks the said inclined flanges being perforated and having bosses with vertical bearings for the bolt-heads, and bolts having said heads, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of January, 1902.

SAMUEL P. MCGOUGH.

Witnesses:

CHARLES H. PELL,
C. B. PITNEY.