

No. 660,738.

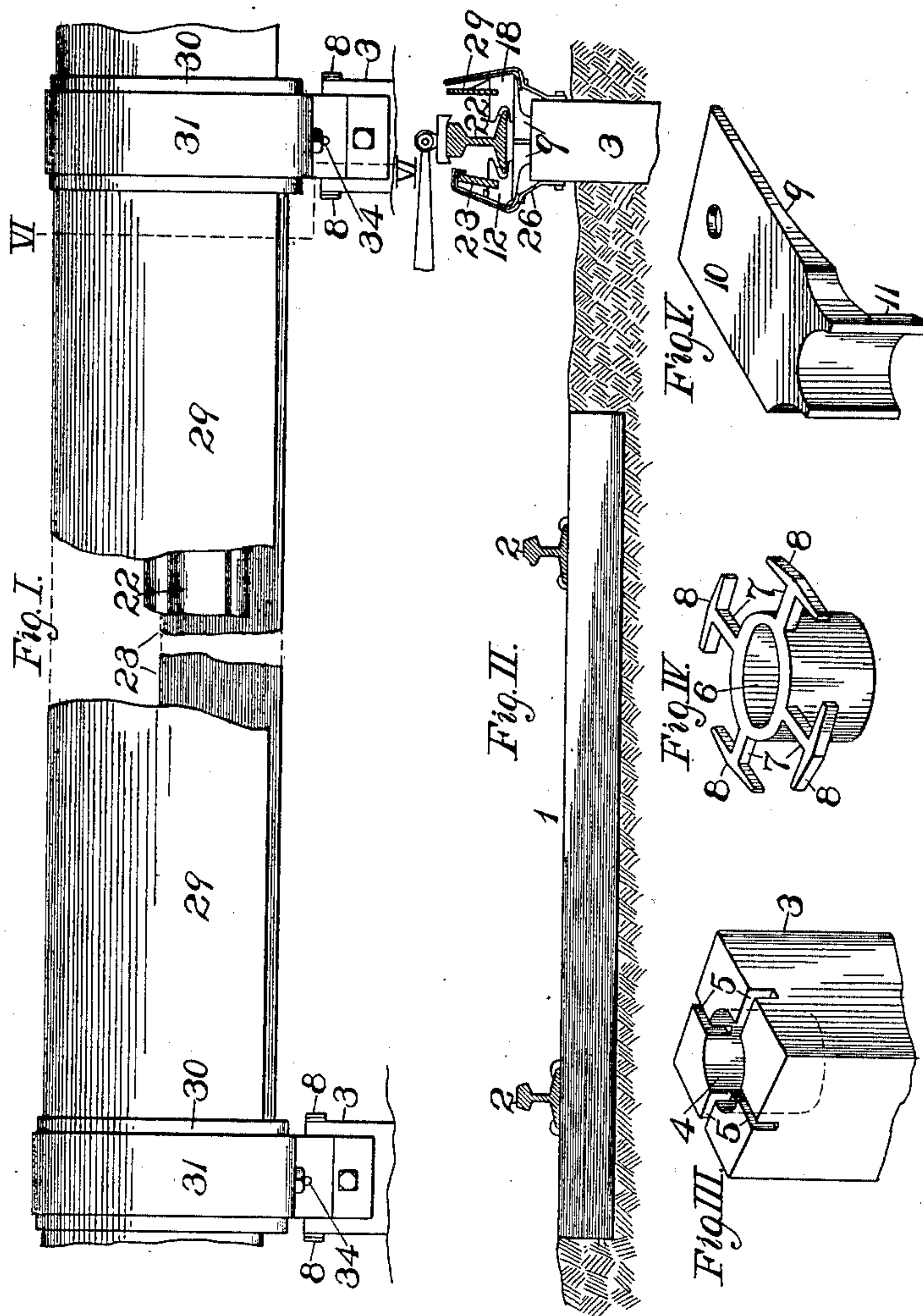
Patented Oct. 30, 1900.

B. C. SEATON.  
THIRD RAIL FOR ELECTRIC RAILWAYS.

(Application filed Mar. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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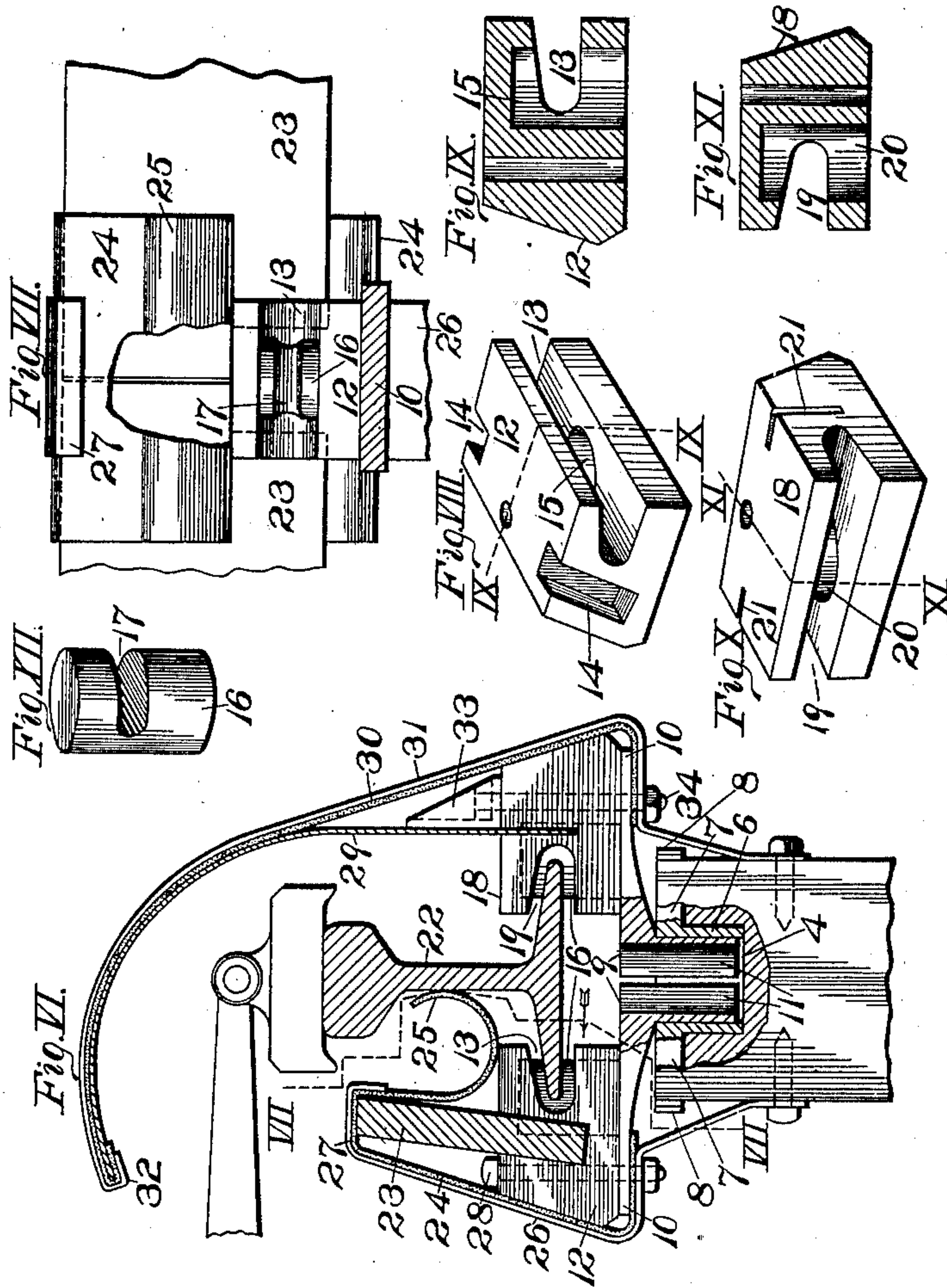
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# UNITED STATES PATENT OFFICE.

BENJAMIN C. SEATON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
BENJAMIN EISEMAN, OF SAME PLACE.

## THIRD RAIL FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 660,738, dated October 30, 1900.

Application filed March 5, 1900. Serial No. 7,366. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN C. SEATON, a citizen of the United States, and a resident of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Third Rails for Electric Railways, of which the following is a specification.

My invention relates to that class of electric railways wherein a "third rail" or current-conductor is arranged adjacent to the railway-track, in approximately the same horizontal plane therewith.

One of the objects of my invention is to provide simple and efficient means for protecting the third rail from the weather and from accidental contact; also, to provide means for retaining the third rail or conductor in position and to thoroughly insulate the same from its supports.

Figure I is a side elevation of a portion of the third rail or conductor and its support and shield. Fig. II is a transverse sectional view showing the railway-track and the position of the third rail relative thereto. Fig. III is a view in perspective of the upper end of one of the supporting-posts made use of in carrying out my invention. Fig. IV is a view in perspective of a spider and socket that is positioned on the upper end of the post just referred to. Fig. V is a view in perspective of one of a pair of mating brackets that are held in the sockets previously mentioned. Fig. VI is an enlarged cross-sectional view taken approximately on the indicated line VI VI, Fig. I. Fig. VII is a vertical sectional view taken approximately on the indicated line VII VII, Fig. VI. Fig. VIII is a view in perspective of one of a pair of blocks which are carried by the brackets previously mentioned. Fig. IX is a vertical sectional view taken on the line IX IX, Fig. VIII. Fig. X is a view in perspective of the outer one of these blocks. Fig. XI is a vertical sectional view taken on the line XI XI, Fig. X. Fig. XII is a perspective view of an insulator-block.

1 designates one of the ties of a railway-track on which the usual rails 2 are positioned, and to one side of the track at regular intervals apart are the wooden posts 3, the same being sunk into the ground a suitable depth.

Formed in the top of each of these posts is a socket 4, and saw-kerfs 5 extend from said socket 4 to the sides of the post. Seated in the socket 4 is a metallic ring 6, which serves as a socket for a pair of brackets, hereinafter described, and integral with and projecting outwardly from the top edge of this ring 6 are the oppositely-arranged pairs of arms 7, on the outer ends of which are formed the heads 8. When this ring 6 is positioned in the socket 4, the arms 7 occupy the saw-kerfs 5 and the heads 8 engage directly against the side faces of the post 3.

9 9 indicate brackets, a pair of which are carried by each post 3, each bracket comprising a horizontally-arranged plate 10, integral with the inner end of which is a vertically-arranged semicircular head 11, which is positioned in the ring 6. These brackets 9 are arranged in alinement with one another and in a position at right angles to the railway-track. Positioned on the inner one of each of the brackets 9 or the one nearest the railway-track is a block 12, in the inner face of which block is formed a longitudinally-extending groove 13, and formed in the ends of said block are the rectangular open-top notches 14.

Formed in the under side of each block 12 and extending upwardly beyond the groove 13 is a circular recess 15, which is occupied by a circular block 16 of suitable insulating material, in the side of which is formed a notch 17, the same being less in width than is the groove 13. Located upon the opposite bracket 9 is a block 18, similar in form and size to the block 12, the front face of said block 18 being provided with a longitudinal groove 19, its under side being provided with a vertically-extending recess 20, which is occupied by one of the blocks of insulating material 16.

The notches 14 are dispensed with in the blocks 18 and vertical saw-kerfs 21 are formed in the ends of said blocks 18 immediately to the rear of the groove 19. The conductor or third rail 22 is held in position between the blocks 12 and 18, the outer portions of the flanges of said third rail occupying the notches 17 in the blocks 16 of insulating material. Extending between the blocks 12 are the guards 23, the same comprising timbers, the



lower portions of their ends resting in the notches 14 and the upper portions extending so as to meet at a central point on top of the blocks 12.

5 Joint insulators 24, in the form of sheets of tar-paper, asbestos, or analogous material, have their lower ends positioned beneath the outer end of the inner brackets 9, said insulators extending from thence upwardly against  
10 the outer ends of the blocks 12, from thence over the top of the guards 23, the ends of said insulators being bent or curved upwardly, as indicated by 25, to form drains which occupy positions immediately over the blocks 12, be-  
15 tween the meeting ends of the guards and the outer faces of the web of the third rail 22. These joint insulators are retained in position by straps 26, the upper ends of which are formed into hooks 27, that engage over the  
20 top edges of the guards 23, said straps extending beneath the outer ends of the inner brackets 9, from thence downwardly onto the inside faces of the posts 3, and there being se-  
25 cured by means of bolts or in any suitable manner. The blocks 12 are located in position upon the plates 10 of the inner brackets 9 by means of bolts 28, which pass downwardly through said blocks 12, through coinciding apertures formed in the outer ends of the  
30 plates 10 of the inner brackets, and through the joint insulators and straps 26.

The continuous shield for the third rail comprises a continuous series of plates 29, preferably of sheet metal, the lower corners  
35 of the ends of which occupy the saw-kerfs 21, formed in the ends of the blocks 18, each of said plates 29 extending vertically to a point approximately in the same horizontal plane with the top of the third rail 22, and from  
40 thence said plates curve upwardly and inwardly over the third rail and the guards 23. The meeting ends of these plates 29 are covered by a sheet of insulating material 30, the same being retained in position by means of  
45 a strap 31, the upper end of which is formed into a hook 32, that engages over the upper end of said sheet of insulating material and the plate 29. This strap extends downwardly to the rear of the block 18, from thence be-  
50 neath the outer end of the plate 10 of the outer bracket 9, and from thence downwardly onto the outer face of the post 3, to which it is secured by means of a bolt or in any suitable manner.

55 A small L-shaped bracket 33, with side flanges, is positioned upon each of the blocks 18, directly against the vertical portions of the meeting ends of the plates 29, and a bolt 34 passes downwardly through coinciding ap-  
60 ertures formed in said bracket, the block 18, plate 10 of the bracket 9, the sheet of insulating material 30, and the strap 31. The sections or plates 29 between the blocks 19 form a continuous shield for the third rail,  
65 while the timbers 23, between the blocks 12, form a continuous guard for said third rail on the inside thereof.

The upturned inner ends 25 of the sheet of insulating material 24 form a trough to drain the water away from the joints and from the  
70 blocks 16 of insulating material positioned within the blocks 12.

The blocks 16 of insulating material positioned in the recesses 15 and 20 are thoroughly protected on all sides except the small  
75 surfaces of the portions that pass through the grooves 13 and 19, and said blocks 16 cannot be removed until the blocks 12 and 18 are disengaged from the brackets 9.

The conductor or third rail is rigidly sus-  
80 tained in the desired position and is very effectually insulated from its supports, and the entire structure may be very quickly and easily assembled and can be readily taken  
85 apart while being repaired or renewed.

I do not limit myself to the precise construction shown or to the construction by which my invention is carried into effect, as many changes may be made therein without  
90 departing from the spirit or scope of my invention, and many such changes will readily suggest themselves to those skilled in the art.

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

1. In a third rail for electric railways, the  
95 combination with an insulated conductor of a continuous guard on one side of said conductor and a continuous shield on the opposite side of and extending over said conductor, substantially as described. 100

2. In a third rail for electric railways, the combination with an insulated conductor of a continuous guard on one side of said conductor, a continuous shield on the opposite  
105 side of and extending over said conductor, and a series of supports, substantially as described.

3. In a third rail for electric railways, the combination with a conductor, of a continu-  
110 ous guard on one side of said conductor, a continuous shield on the opposite side of and extending over said conductor, and a series of supports carrying said conductor, guard and shield and insulated from said conductor, substantially as described. 115

4. In a third rail for electric railways, the combination with an electric conductor of a series of supports below said conductor, a series of insulating-bearings between said con-  
120 ductor and said supports, a continuous guard on one side of said conductor, and a continuous shield on the opposite side of and extending over said conductor, substantially as described.

5. In a third rail for electric railways, the  
125 combination with a series of supports, of a conductor carried by and insulated from said supports, guards extending between the supports on one side of the conductor, shields extending between the supports on the opposite  
130 side of said conductor, and sheets of insulating material covering the meeting ends of the guards and shields; substantially as specified.

6. In a third rail for electric railways, a se-



ries of supports, a pair of blocks arranged on each support, a conductor held by and insulated from said blocks, guards extending between the blocks on one side of the conductor, shields extending between the blocks on the opposite side of the conductor, and sheets of insulating material covering said blocks and the meeting ends of said guards and shields; substantially as specified.

7. In a third rail for electric railways, the combination with a series of supports, of pairs of blocks carried by said supports, insulators held in said blocks, a conductor held between said insulators, a continuous insulating-guard on one side of the conductor, and a continuous shield on the opposite side of said conductor, substantially as described.

8. In a third rail for electric railways, the combination with a series of supports, of pairs of blocks carried by said supports, insulators held in said blocks, a conductor held between said insulators, insulating-guards between the blocks on one side of said conductor, and a shield between the blocks on the opposite side of the conductor, substantially as described.

9. In a third rail for electric railways, a series of supports, a pair of oppositely-arranged blocks carried by each support, in the adjacent faces of which blocks are formed grooves, insulators positioned in said blocks, in the exposed portions of which insulators are formed grooves, and a flanged conductor, the flanges of which occupy the grooves in the insulators, substantially as described.

10. In a third rail for electric railways, a series of supports, a pair of oppositely-arranged

blocks carried by each support, in the adjacent faces of which blocks are formed grooves, insulators positioned in said blocks, in the exposed portions of which insulators are formed grooves, a flanged conductor, the flanges of which occupy the grooves in the insulators, a continuous insulating-guard on one side of the conductor, and a continuous shield on the opposite side of said conductor, substantially as described.

11. In a third rail for electric railways, a series of supports, a pair of brackets upon each support, a pair of oppositely-arranged blocks held by said brackets, insulators held in said blocks, a conductor held between said insulators, guards arranged between the blocks on one side of the conductor, a sheet of insulating material covering the meeting ends of said guards, shields arranged between the blocks on the opposite side of the conductor, and a sheet of insulating material covering the meeting ends of each pair of said shields, substantially as described.

12. In a third rail for electric railways, the combination with a block having a groove formed in one of its side faces and a recess in its under side, of a block of insulating material located in said recess, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN C. SEATON.

Witnesses:

A. WENDELL JACKSON,  
EDWIN SEGER.