

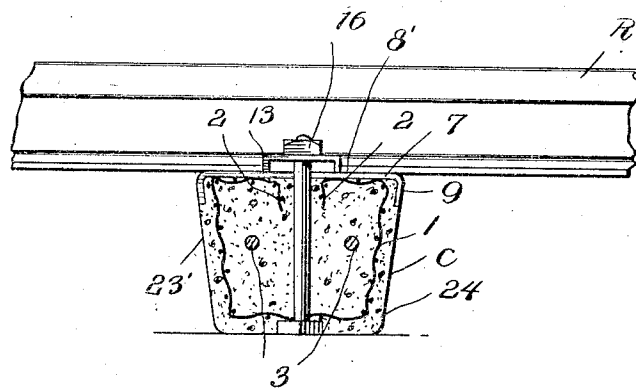
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Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.

[illegible]

Fig. 4.



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RAILROAD TIE.
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1,037,750.

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2 SHEETS—SHEET 2.

Fig. 2.

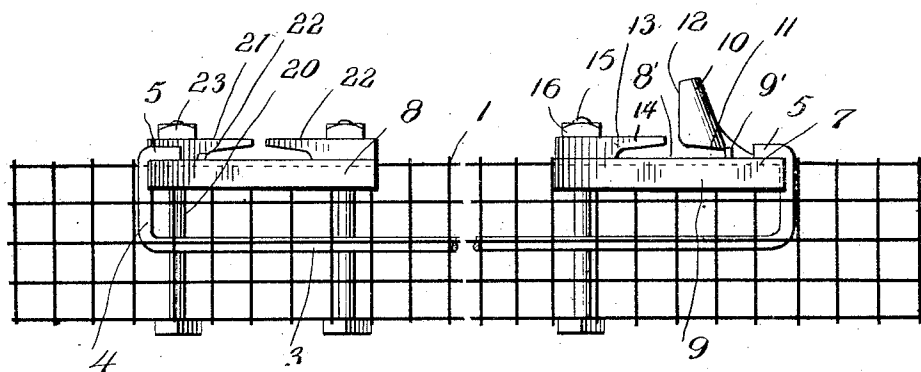
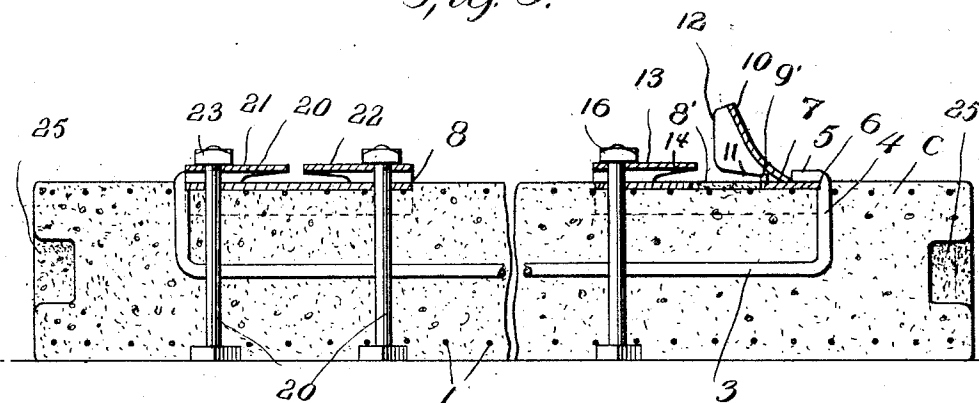


Fig. 3.



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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE.

1,037,750.

Specification of Letters Patent.

Patented Sept. 3, 1912.

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To all whom it may concern:

Be it known that I, SIGMUND FRIEDMAN, a citizen of the United States, residing at Gorgona, Canal Zone, Panama, have invented new and useful Improvements in Railroad-Ties, of which the following is a specification.

The present invention relates to railroad ties and has particular application to certain novel and useful improvements in reinforced concrete ties.

In carrying out my invention, it is my purpose to provide a railway tie embracing the desired features of simplicity, durability and strength, coupled with cheapness of cost in manufacture and installation.

A further object of my invention is the provision of a concrete tie reinforced by a body of metallic mesh, my construction further embodying tie members extending in such manner as to embrace the base or plates of the rail chairs.

Furthermore, I aim to provide a novel arrangement of means carried by the concrete tie for supporting the rails positively and safely in position.

Another object of the invention is to provide a reinforced railway tie which while possessing many of the advantages of the ordinary wooden tie, such as a certain amount of elasticity, will not be subjected to the disadvantage of rapid destruction and decay, due to the action of the elements and other well-known factors which tend to shorten the life of the ordinary tie.

With the above-recited objects and others of a similar nature in view, the invention consists in the construction, combination and arrangement of parts, set forth in and falling within the scope of the appended claims.

In the accompanying drawing:—Figure 1 is a perspective view of a railway tie embodying my invention, showing the manner of securing the rails thereto. Fig. 2 is a view in side elevation of the metallic reinforcing mesh, and showing the same carrying the rail chairs. Fig. 3 is a vertical longitudinal sectional view, taken through my improved tie. Fig. 4 is a vertical cross sectional view on the line 4—4 of Fig. 1.

In the present instance, I have shown a preferred embodiment of my invention, wherein the tie comprises an oblong reinforcing body of wire mesh or the like, upon the upper side of which I mount the

plates of the chair rails, these being secured in position by bolts passing through the reinforcing body and the base of the chair rails, said reinforcing body being embedded in or coated with a body of cement, so that said cement embraces the reinforcement, as is shown in Fig. 1 of the drawing. I wish it to be understood, however, that I do not limit myself to all the precise details of construction herein set forth by way of illustration, as modification and variation may be made without departing from the spirit of the invention or exceeding the scope of the appended claims.

Referring now to the accompanying drawings in detail, the numeral 1 designates the reinforcing body which is in the nature of an oblong structure formed of metal having openings therein, such as wire mesh or the like, the free longitudinal edges of the reinforcing body being bent inward and downward at the top thereof, as shown at 2—2. Extending longitudinally through the reinforcing body are the tie rods 3, the ends of which are curved upward as at 4, to project through the openings in the mesh at the top, the ends being then curved inward as at 5 to form hooks for engaging with the notches 6 in the adjacent edges of the rail chairs 7—8. The chair 7 is formed with a flat base or section 8' having downturned flanges 9 at the longitudinal edges thereof and upon this base is formed a vertical flange or stop 9' from the central of which extends upwardly the slightly inclined member 10 cut away at its base as at 11 for the reception of the base of the rail the face 12 of said member being adapted to engage with the web of the rail. On the opposite side of the rail is a clamping member 13 having a shouldered end 14 for engaging with the adjacent portion of the rail base, while 15 indicates a bolt extending vertically through the tie, rail chair and clamp 13, a nut 16 being threaded onto the end of the bolt for holding the clamp rigidly in position.

The rail chair 8 is formed of a plate or base section 17 having the downturned flanges 18, while upon top of the base is a vertical flange 19 against which abuts the side of the rail base, while 20—20 designate bolts passing upward vertically through the tie, rail chair and clamping members 21—21 arranged at opposite sides of the rail base, the clamping members having shoulders 22

engaging with the rail base, said clamping members being secured to the projecting ends of the bolts by the nuts 23.

The rails of the track are indicated at 5 R—R.

The concrete body of the tie is indicated by the letter C, and in manufacturing, the reinforcement is embedded in and completely covered with the body of concrete, 10 the concrete in its plastic state working in through the openings of the mesh and completely filling the inside of the oblong mesh body while the concrete also covers the entire outside of the reinforcement, the plates 15 of the rail chairs lying flush with the top face of the concrete of the tie, while the downwardly turned side flanges of the chair plates are flush with and embedded in the vertical sides of the concrete body. The 20 sides which are indicated at 24—24 are slightly tapered downward and inward to prevent the tie from sinking sidewise in the ground, while the ends of the ties are molded with holes 25—25 to lighten the weight of 25 the tie and to provide means whereby the tie may be easily carried, by the insertion of bars or rods therein.

From the above description taken in connection with the accompanying drawings, 30 the construction and manner of employing my improved rail tie will be readily apparent. It will be noted, that I provide a reinforced concrete tie which, owing to the peculiar character of the reinforcement, is 35 capable of yielding to the shocks and jars of the rolling stock passing thereover, much in the manner of the ordinary wooden tie. In addition, by forming the chairs practically as an integral portion of the tie and 40 securing the chairs in position as shown, I provide against the accidental loosening and disengagement of the latter, the same means which secure the chair in position at its base also holding the clamps or retaining clips.

45 I claim:—

1. A railway tie comprising an inner body and an outer body, said inner body being formed of a resilient member formed with holes, flanged rail chairs resting upon the 50 said inner body, tie rods having curved inner ends and intumed portions engaging with the rail chair, and said outer body being formed of plastic material within which the resilient inner body is embedded.

55 2. A railway tie comprising a body of concrete or similar material, a reinforcing body of pervious metal bent to provide a substantially rectangular body embedded therein, the edges of the said reinforcing 60 body being arranged at the top thereof and being bent downwardly within the body to

provide longitudinally extending substantially vertical spaced walls, the said top of the reinforcing body being positioned adjacent the top of the concrete body and being 65 provided with flanged edges which engage with the longitudinal sides of the concrete body, and means embedded within the concrete body and arranged between the sides and the downturned walls of the reinforcing body and engaging with the chairs 70 for sustaining the said chairs upon the tie.

3. A railway tie comprising a body of concrete or similar material, a reinforcing 75 body of pervious metal bent to provide a substantially rectangular body embedded therein, the edges of the said reinforcing body being arranged at the top thereof and being bent downwardly within the body to provide longitudinally extending substantially 80 vertical spaced walls, the said top of the reinforcing body being positioned adjacent the top of the concrete body and being provided with flanged edges which engage with the longitudinal sides of the concrete body, means embedded within the 85 concrete body and arranged between the sides and the downturned walls of the reinforcing body and engaging with the chairs for sustaining the said chairs upon the tie, rail 90 clamps upon the rail chairs, and both members passing through both of the bodies of the tie and between the downturned ends of the reinforcing body for retaining the 95 clamps upon the chair.

4. A railroad tie comprising a body of concrete and a body of wire mesh which is bent into tubular form and which is embedded within the concrete body, the edges 100 of the reinforcing member being extended downwardly within the concrete body adjacent the top thereof, a rail chair resting upon the reinforcing body and having its edges provided with flanges which engage 105 with the concrete body, tie rods within the concrete body having curved ends formed with intumed portions which pass through the bodies of the tie and which engage with the edges of the rail chair, headed bolts embedded within the concrete and passing 110 through the chair between the downturned portions of the reinforcing body, rail clamps adapted to co-act with the bolts and nuts for retaining the rail clamps upon the chair and upon the bolts.

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

SIGMUND FRIEDMAN.

Witnesses:

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FRANK H. REITMAN.